

Accounting

Program Number: 10-101-1

Associate in Applied Science Degree

Accounting & Finance Program Cluster

School of Business and Applied Arts

Program offered at Madison, Portage, Reedsburg, and Watertown Campuses

For information call:
(608) 246-6003 or (800) 322-6282 Ext. 6003

About the Program

The Accounting Program provides the educational background and training required for entry positions in private business and industry, governmental agencies and public accounting firms. Job experience and continuing education provide the necessary qualifications for advanced positions in the field of accounting. Keyboard skills and computer literacy are required.

Admissions Requirements

To review admissions program requirements and application processing dates visit the programs website at:
<http://madisoncollege.edu/program-info/accounting>.

Program Courses

10-101-111 Accounting 1–Principles 4 credits
Introduction to the field of accounting. The accounting cycle of journalizing transactions, posting, adjusting and closing entries, as well as the preparation of accounting statements is emphasized for service industries and merchandising concerns. Details of accounting for cash and receivables are studied. An introduction to a computerized accounting system is also included. Prerequisite: completion of or concurrent enrollment in 10-804-144; otherwise, completion of 10-834-110 or 74-854-793 or 74-854-747 (or sufficient score on the COMPASS test).

10-101-113 Accounting 2–Principles 4 credits
Procedures of accounting for partnerships and corporations. Additional topics include fixed assets, current liabilities and payroll, long-term liabilities, investments, statement of cash flows, analysis of financial statements, and an introduction to cost accounting. Prerequisite: grade of C or better in 10-101-111 and prerequisite or co-requisite: 10-804-144.

10-101-121 Accounting 3–Intermediate 4 credits
This intermediate-level course builds on the material covered in the Accounting Principles-1 and -2 courses. It expands on earlier coverage of both the income statement and balance sheet. Revenue recognition concepts and methods are covered. Emphasis is also placed on each classification of asset. This emphasis includes in-depth coverage of cash, receivables and inventory. Coverage also includes operational asset acquisition, depreciation, and disposal. Present value concepts are studied and applied. Excel spreadsheet software is used in this course.
Prerequisite: grade of C or better in 10-101-113, 10-103-133, and 10-804-144.

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

		Credits	Hrs/week Lec-Lab
First Semester			
10-101-111	Accounting 1-Principles	4	4-0
10-101-139	QuickBooks-Beginning**.....	1	0.5-1
10-102-134	Business Organization, Management, & Ethics	3	3-0
10-103-133	Excel–Beginning	1	0.25-1.5
10-801-195	Written Communication*	3	3-0
10-804-144	Math of Finance	3	3-0
Semester Total		15	

Second Semester			
10-101-113	Accounting 2-Principles	4	4-0
10-101-123	Tax 1	4	4-0
10-101-141	QuickBooks-Intermediate.....	1	0.5-1
10-809-195	Economics*	3	3-0
10-809-199	Psychology of Human Relations*	3	3-0
20-810-205	Small Group & Interpersonal Communication*.....	3	3-0
Semester Total		18	

Third Semester			
10-101-121	Accounting 3-Intermediate	4	4-0
10-101-125	Cost Management.....	4	3-0
10-101-138	Accounting and Payroll Systems	3	3-1
10-102-160	Business Law 1	3	3-0
10-801-198	Speech*.....	3	3-0
Semester Total		17	

Fourth Semester			
10-101-122	Accounting 4-Intermediate	4	4-0
10-101-137	Computerized Accounting Applications.....	2	2-1
10-101-142	Accounting Capstone.....	3	2-2
10-114-130	Personal Finance	3	3-0
10-106-190	Professional Development.....	1	1-0
10-801-197	Technical Reporting*.....	3	3-0
Semester Total		16	

Graduation Requirement

A minimum grade of C is required for all technical studies courses in order to graduate.

Note: Students are placed in English or mathematics courses based on their scores on the COMPASS, ACT, or ASSET test or on completion of the appropriate prerequisites.

*Other course options are available. See Academic Requirements (Advising Report) for specific information.

**Accounting program students should take this course the second half of the semester they take Accounting 1-Principles (or they may take it in a semester after they have completed Accounting-Principles). (Non-program students working in the accounting field or with small business management experience should obtain permission from the instructor to register, and take the course in a section during the first half of a semester.



Program Courses (continued)

10-101-122 Accounting 4–Intermediate 4 credits

Emphasizes analysis of financial statements. Generally accepted accounting principles are applied in the preparation, analysis and interpretation of financial statements. Particular emphasis is applied to valuation of current and long-term liabilities and stockholders' equity, and earnings per share. Special topics included are deferred income taxes, long-term investments, and leases. Further consideration is applied to errors and their correction, and statements of cash flow. Comparison and analysis is also made between GAAP and international standards (IFRS). Prerequisite: grade of C or better in 10-101-121.

10-101-123 Tax 1 4 credits

Introduction to federal and state income tax laws with an emphasis on personal taxes. These areas are included: filing status, personal exemptions and standard deductions; income recognition, itemized deductions, credits, depreciation, gains and losses, and sole proprietorship taxation. The course also requires the preparation of a series of individual income tax returns.

10-101-125 Cost Management 4 credits

This course presents typical accounting methods and processes that are used for collecting information for effective decision making for both manufacturing and service environments. Areas emphasized include job order costing, process costing, standard costing, activity based costing, budgeting, cost allocations, cost-volume-profit analysis and capital investment analysis. Students will be required to prepare and analyze various management reports. Prerequisite: grade of C or better in 10-101-113 and 10-103-133.

10-101-137 Computerized Accounting Applications 3 credits

Provides practical experience developing and applying flexible solutions to accounting problems using Excel. Spreadsheet tools that will be utilized include financial, lookup, and database functions; logical statements (IF); goal seek; pivot tables; and macros. Prerequisite: grade of C or better in 10-101-113 and 10-103-133.

10-101-138 Accounting and Payroll Systems 3 credits

A survey of accounting and payroll systems covering procedures and methods to capture data and report financial information. Specific topics include flowcharting, internal controls, and transaction work in both manual and computerized environments. Special emphasis is also placed on payroll calculations and the processing of payroll information. Lab intensive course involving hands-on experience with Excel spreadsheet software and accounting software. Prerequisites: grade of C or better in 10-101-113 (or concurrent enrollment) and completion of 10-103-133.

10-101-139 QuickBooks-Beginning 1 credit

Introduction to QuickBooks-Beginning small business accounting software. Students become familiar with QuickBooks features and learn to use the software to set up a new company, manage business revenue and expenses, process payroll, reconcile bank accounts, track inventory and create useful reports. A tutorial approach will be followed using a textbook and practice problem templates. Prerequisites: (1) Course work or experience in Microsoft Windows and using email is required. (2) *Accounting program students should take this course the second half of the semester they take Accounting 1-Principles. (Non-program students working in the accounting field or with small business management experiences should obtain permission from the instructor to register, and take the course in a section during the first half of a semester.*

10-101-141 QuickBooks-Intermediate 1 credit

QuickBooks Intermediate is the next course offering after QuickBooks-Beginning which provides student users with in-depth material on advanced topics. Topics will include inventory; Sales Tax; Time Tracking; Payroll Setup and Processing; Estimates and Sales Orders; Budgeting, Forecasting & Business Planning; and Adjustments and Year-End Procedures. A tutorial approach will be followed using a textbook and practice problem company files. Prerequisite: 10-101-139.

10-101-142 Accounting Capstone 3 credits

This course will provide students an opportunity to demonstrate their attainment of program outcomes through the completion of a project. This project accounts for a small business through the accounting cycle, review of internal controls, and financial analysis. Prerequisites: 10-101-121, 10-101-123, 10-101-138, and 10-101-139 (if 3-credit version of 10-101-137 was not taken).

10-102-134 Business Organization, Management, and Ethics 3 credits

This foundation course covers core concepts related to business strategy, marketing, operations and finance, as well as their interrelationships within an organization. Case studies and a computer business simulation are used to deepen student understanding. Corporate culture and the International dimension of business are also covered. An Ethics framework, which will be further explored in upper-level Program classes is introduced, along with a focus on the means businesses use to promote and enforce ethical behavior.

10-102-160 Business Law 1 3 credits

This survey course covers legal principles used in the business world. Major emphasis is placed on contracts along with torts, federal and state courts, criminal law, marital property bankruptcy and wills. The course is taught on a level suitable for an associate degree student. Federal, state and case law serve as the basis of study.

10-103-133 Excel–Beginning 1 credit

Introduction to Excel spreadsheet software. Create, edit, save, format, print, perform calculations, copy/move text and formulas, and create charts. Working knowledge of Windows presumed.

10-106-190 Professional Development 1 credit

Research the job market, develop a job search/career portfolio, and prepare for the job interview. The portfolio will include: a cover letter, resume, reference sheet, job application form, thank you letter and work samples. It is recommended that this course be taken during the third or fourth semester of the program. Prerequisite: 10-801-195 or 20-801-201.

10-114-130 Personal Finance 3 credits

This introductory course considers finance from the point of view of the individual or family unit. Topics include budgets, insurance, housing, borrowing, saving, investing and estate planning. Students complete personal finance projects applying the material learned. Prerequisites: grade of a C or better in 10-101-113 and 10-804-144.

10-804-144 Math of Finance 3 credits

This course takes an algebraic approach to solving financial problems. Topics include personal finance, mathematics of retailing, mathematics of banking, and statistical applications. Major emphasis is placed on solving problems involving the time value of money by using a financial calculator. The material in this course develops a sound base for subsequent courses by using an analytical approach to problem solving. Prerequisite: appropriate score on COMPASS test or 10-804-110.

Career Potential:

- Accounts Payable/Receivable Clerk
- Bookkeeper
- Payroll Clerk
- Cost Accountant
- Public Accountant
- Staff Accountant
- Tax Accountant
- Account Manager
- Account Specialist
- Payroll Accountant

With additional education and/or work experience, graduates may find employment as:

- Auditor
- Certified Public Accountant
- Comptroller
- Treasurer
- Trust Officer

Other Recommended/Related Courses

(These are not required, and would not be covered by financial aid.)

- 10-101-118 Management Accounting
- 10-101-140 Accounting/Business Internship
- 10-102-104 Business Statistics
- 10-102-143 Management Techniques
- 10-103-132 Excel–Advanced
- 10-103-139 Excel–Intermediate
- 10-103-145 Access-Beginning
- 10-106-172 Administrative Office Management
- 10-114-126 Corporate Finance
- 10-114-127 Financial Analysis

More detailed and updated information on this program may be available at: madisoncollege.edu. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

Madison Area Technical College provides equal opportunity in education and employment.

Accounting Assistant

Program Number: 31-101-1

One-Year Technical Diploma

Accounting & Finance Program Cluster

School of Business and Applied Arts

Program offered at Madison, Portage, Reedsburg, and Watertown Campuses

For information call:
(608) 246-6003 or (800) 322-6282 Ext. 6003

About the Program

The Accounting Assistant program provides students with the skills and confidence necessary to perform entry-level bookkeeping and accounting work for local employers.

Accounting Assistant majors may work in small business and be responsible for all aspects of bookkeeping or work in a larger firm under the supervision of an accountant and specialize in a certain area.

Admissions Requirements

To review admissions program requirements and application processing dates visit the programs website at: <http://madisoncollege.edu/program-info/accounting-assistant>.

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

		Hrs/week	
		Credits	Lec-Lab
First Semester			
10-101-111	Accounting 1-Principles	4	4-0
10-102-134	Business Organization, Management, and Ethics ...	3	3-0
10-101-139	QuickBooks-Beginning	1	0.5-1
10-103-133	Excel-Beginning	1	0.25-1.5
10-801-195	Written Communication	3	3-0
10-804-144	Math of Finance	3	3-0
Semester Total		15	
Second Semester			
10-101-113	Accounting 2-Principles	4	4-0
10-101-123	Tax 1	4	4-0
10-101-141	QuickBooks Intermediate	1	0.5-1
10-103-139	Excel-Intermediate OR	1	0.25-1.5
10-106-109	Business Spreadsheet Applications.....(3).....	3	1-4
10-106-190	Professional Development.....	1	1-0
10-801-196	Oral/Interpersonal Communication OR	3	3-0
20-810-205	Small Group & Interpersonal Communication.....(3).....	3	3-0
Semester Total		14	

Note: Students are placed in English or mathematics courses based on their scores on the COMPASS or ASSET test or on completion of the appropriate prerequisite.

Graduation Requirement:

Please note: A minimum grade of C is required for all occupational specific courses in



Madison Area Technical College
Accounting Assistant
Program Courses

Program Number: 31-101-1

10-101-111 Accounting 1–Principles 4 credits

Introduction to the field of accounting. The accounting cycle of journalizing transactions, posting, adjusting and closing entries, as well as the preparation of accounting statements is emphasized for service industries and merchandising concerns. Details of accounting for cash and receivables are studied. An introduction to a computerized accounting system is also included. Prerequisites: strongly recommended completion of or concurrent enrollment in Math of Finance, 10-804-144; otherwise, completion of Elementary Algebra, 10-834-110 or Basic Algebra, 74-854-793 or Math Concepts, 74-854-747 (or sufficient score on the COMPASS test).

10-101-113 Accounting 2–Principles 4 credits

Procedures of accounting for partnerships and corporations. Additional topics include fixed assets, current liabilities and payroll, long-term liabilities, investments, statement of cash flows, analysis of financial statements, and an introduction to cost accounting. Prerequisite: grade of C or better in 10-101-111 and prerequisite or co-requisite: 10-804-144.

10-101-123 Tax 1 4 credits

Introduction to federal and state income tax laws with an emphasis on personal taxes. These areas are included: income, deductions, credits, depreciation, gains and losses, and sole proprietorship taxation. The course requires the preparation of a series of individual income tax returns.

10-101-139 QuickBooks-Beginning 1 credit

Introduction to QuickBooks-Beginning small business accounting software. Students become familiar with QuickBooks features and learn to use the software to set up a new company, manage business revenue and expenses, process payroll, reconcile bank accounts, track inventory and create useful reports. A tutorial approach will be followed using a textbook and practice problem templates. Prerequisites: (1) Course work or experience in Microsoft Windows and using email is required. (2) Accounting program students should take this course the second half of the semester they take 10-101-111 Accounting 1-Principles (or they may take it in a semester after they have completed Accounting-Principles). (Non-program students working in the accounting field or with small business management experience should obtain permission from the instructor to register, and take the course in a section during the first half of a semester.

10-101-141 QuickBooks-Intermediate 1 credit

QuickBooks-Intermediate is the next course offering after QuickBooks-Beginning which provides student users with in-depth material on advanced topics. Topics will include inventory; Sales Tax; Time Tracking; Payroll Setup and Processing; Estimates and Sales Orders; Budgeting, Forecasting & Business Planning; and Adjustments and Year-End Procedures. A tutorial approach will be followed using a textbook and practice problem company files. Prerequisite: 10-101-111 Accounting 1-Principles

10-102-134 Business Organization, Management, and Ethics 3 credits

This foundation course covers core concepts related to business strategy, marketing, operations and finance, as well as their interrelationships within an organization. Case studies and a computer business simulation are used to deepen student understanding. Corporate culture and the International dimension of business are also covered. An Ethics framework, which will be further explored in upper-level Program classes is introduced, along with a focus on the means businesses use to promote and enforce ethical behavior.

10-106-109 Business Spreadsheet Applications 3 credits

Create professional data-driven spreadsheets utilizing Excel spreadsheet software and information from a variety of data sources. Create charts and complex formulas; utilize advanced functions and apply conditional formatting; develop an Excel application with data validation, sheet protection, and macros. Work with financial tools and functions; perform what-if analysis with Scenario Manager, Data Tables, Goal Seek and Solver. Recommended prerequisite: Windows competency, including solid file management skills.

10-103-133 Excel–Beginning 1 credit

Introduction to Excel spreadsheet software. Create, edit, save, format, print, perform calculations, copy/move text and formulas, and create charts. Working knowledge of Windows presumed.

10-103-139 Excel–Intermediate 1 credit

Create complex formulas, expand use of functions, manage and link workbooks, create and use macros, use and analyze list data, enhance charts and workbooks. Working competency in Windows and Beginning Excel presumed.

10-106-190 Professional Development 1 credit

Research the job market, develop a job search/career portfolio, and prepare for the job interview. The portfolio will include: a cover letter, resume, reference sheet, job application form, thank you letter and work samples. It is recommended that this course be taken during the third and fourth semester of the program. Prerequisite: 10-801-195 or 20-801-201.

10-801-196 Oral/Interpersonal Communication 3 credits

Focuses upon developing speaking, verbal, and nonverbal communication and listening skills through individual presentations, group activities, and other projects. Prerequisite: Written Comm, 10-801-195, English 1, 20-801-201 or Comm Skills 1, 10-801-151

10-804-144 Math of Finance 3 credits

This course takes an algebraic approach to solving financial problems. Topics include personal finance, mathematics of retailing, mathematics of banking, and statistical applications. Major emphasis is placed on solving problems involving the time value of money by using a financial calculator. The material in this course develops a sound base for subsequent courses by using an analytical approach to problem solving. Prerequisite: appropriate score on COMPASS test or Elementary Algebra with Applications, 10-804-110.

20-810-205 Small Group & Interpersonal Communication 3 credits

This course explores verbal and nonverbal concepts, theories, and practical skills necessary to become competent in interpersonal and small group settings. Students explore dependent, independent and interdependent relationships with others in personal and work-related settings.

Career Potential:

- Accounts Payable / Receivable Clerk
- Billing Clerk
- Bookkeeper/ Payroll Clerk
- Inventory Control Clerk
- Office Assistant

With additional education and/or work experience, graduates may find employment as:

- Accountant
- Bookkeeping Supervisor
- Office Manager

More detailed and updated information on this program may be available at: madisoncollege.edu. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

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Rev. 03/15

Administrative Professional

Program Number: 10-106-6

Associate in Applied Science Degree

Business Technology Program Cluster

School of Business and Applied Arts

Program offered at Madison, Fort Atkinson, and Watertown campuses; and completely online

For information call: (608) 246-6003 or
(800) 322-6282 Ext. 6003

About the Program

The Administrative Professional Program prepares individuals in software/hardware, administrative, and interpersonal skills needed to perform the duties of administrative support personnel. With additional education and/or work experience, there is opportunity for advancement into supervisory or managerial positions. To graduate from the program, a student must receive a grade of C or higher in all program courses.

Graduates of this program typically earn \$32,500 per year.

Admission Requirements

To review program admission requirements and application processing dates, visit the program's website at: <http://madisoncollege.edu/program-info/administrative-professional>.

Note: all Microsoft Office software courses use the 2013 version.

Preparation for MOS Certification

Microsoft Office Specialist (MOS) certification is an internationally recognized program that verifies knowledge, skills, and abilities needed to effectively use Microsoft Office products. Completing the Administrative Professional program at Madison College prepares you to become MOS certified. For more information, including where to take the certification exams, visit <http://certipoint.com/mos>.

Earn your Administrative Professional degree completely online!

The benefits of completing a degree online include courses available 24 hours a day, seven days a week; an opportunity to choose your own study time within course guidelines; an ability to join in online global discussions with professionals and stay current with new business technology and trends. For more information about the online Administrative Professional degree program, contact the School of Online and Accelerated Learning at (800) 322-6282 ext. 5850 or (608) 245-5850.

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

First Semester		Credits	Hrs/week Lec-Lab
10-106-102	Professional Profile.....	1	0.25-1.5
10-106-107	Business Document Applications*.....	3	1-4
10-106-139	Keyboard Skillbuilding	1	0.25-1.5
10-106-108	Proofreading and Editing.....	3	2-1
10-106-182	Information Technology Concepts.....	3	2-2
10-106-231	Business Presentations and Publications*.....	3	1-4
10-801-195	Written Communication.....	3	3-0
Semester Total		17	

Second Semester		Credits	Hrs/week Lec-Lab
10-101-106	Accounting Fundamentals.....	3	3-0
10-106-109	Business Spreadsheet Applications*.....	3	1-4
10-106-133	Word Processing Applications.....	2	1-2
10-106-164	Customer Contact Skills	1	0.25-1.5
10-106-172	Administrative Office Management.....	2	1-2
10-801-196	Oral/Interpersonal Communication.....	3	3-0
10-804-123	Math with Business Applications.....	3	3-0
Semester Total		17	

Third Semester		Credits	Hrs/week Lec-Lab
10-103-165	Outlook	1	0.25-1.5
10-103-168	Dreamweaver	1	0.25-1.5
10-106-106	Business Writing and Research	2	0.25-1.5
10-106-190	Professional Development.....	1	0.25-1.5
10-106-240	Business Information Management*	3	1-4
10-801-198	Speech.....	3	3-0
10-809-197	Contemporary American Society.....	3	3-0
10-809-199	Psychology of Human Relations.....	3	3-0
Semester Total		17	

Fourth Semester		Credits	Hrs/week Lec-Lab
10-106-134	Software Simulation.....	2	0.5-3
10-106-186	Introduction to Project Management	2	0.5-3
10-106-187	Exploring Business Technologies.....	2	0.5-3
10-106-194	Career Management	1	0.25-1.5
10-106-195	Internship	1	0-4
10-809-172	Introduction to Diversity Studies.....	3	3-0
	Elective	3	E
Semester Total		14	

Recommended Electives

10-101-139	Quickbooks Pro	1 credit
10-102-160	Business Law	3 credit
10-103-125	Access-Intermediate	1 credit
10-103-141	Adobe Acrobat Professional	1 credit
10-103-163	Adobe Photoshop-Beginning	1 credit
10-103-186	MS Project	2 credits
10-104-114	Social Media Principles	3 credits
10-109-102	Fundamentals of Meeting Management	3 credits

*Due to changing technology, all technology courses must be completed within five (5) years of program admission in order to satisfy graduation requirements.



Program Courses

10-106-102 Professional Profile 1 credit

Concentrates on the knowledge, attitudes, and skills necessary to succeed in the Administrative Professional program and to grow personally and professionally. Topics include mentoring, career success, campus resources, skills portfolio, core abilities, internship requirements, professional organizations, personality traits, values and work environment preferences, and self-assessment of present career skills.

10-106-106 Business Writing and Research 2 credits

Apply the basics of effective writing and research skills needed for success in the business world. Students will also review grammar and punctuation rules. Emphasis will be placed on simulating business writing and research situations through letters, memos, electronic messages, and reports. Prerequisites: 10-106-108, 10-106-133, and 10-801-195.

10-106-107 Business Document Applications 3 credits

Emphasis is placed on learning to use word processing software to efficiently and effectively produce business documents. Students will apply skills to solve practical problems in a project-based format. Explore fundamentals and best practices in document creation, editing, formatting, collaboration, tables, mail merge, desktop publishing, themes, templates, forms, and macros. Prerequisite: sufficient scores on the COMPASS test to allow enrollment in 10-801-195; recommended: Windows competency.

10-106-108 Proofreading and Editing 3 credits

Develop proofreading skills: punctuation, grammar, spelling and usage errors. Edit documents: appropriate content, conciseness, clarity, and point of view. Prerequisite: sufficient scores on the COMPASS test to allow enrollment in 10-801-195; recommended: Windows competency.

10-106-109 Business Spreadsheet Applications 3 credits

Create professional data-driven spreadsheets utilizing Excel spreadsheet software and information from a variety of data sources. Create charts and complex formulas; utilize advanced functions and apply conditional formatting; develop an Excel application with data validation, sheet protection, and macros. Work with financial tools and functions; perform what-if analysis with Scenario Manager, Data Tables, Goal Seek and Solver. Prerequisite: sufficient scores on the COMPASS test to allow enrollment in 10-801-195; recommended: Windows competency

10-106-133 Word Processing Applications 2 credits

Utilize word processing skills to format letters, memos, tables and reports. Develop workplace skills: proofreading and decision-making. Prerequisites: 10-106-101 (or 10-106-139) and 10-106-107

10-106-134 Software Simulation 2 credits

This course uses a simulation that integrates multiple software applications and features of Windows, Word, Excel, Access, and PowerPoint programs. Students manage information, apply critical-thinking skills to solve problems, research topics, and compose documents. Prerequisites: 10-106-106 or 10-106-165, 10-106-107, 10-106-109, 10-106-240, 10-106-231, 10-106-240, and 10-106-133 OR 10-106-166.

10-106-139 Keyboard Skillbuilding 1 credit

Refine keyboarding technique, increase speed, and improve accuracy through individualized practice. The student must be able to touch type, which is defined as using the correct key reaches and not looking at the keys while typing, at a minimum rate of 25 words per minute. Equipment requirement: Access to a PC Windows platform computer. Coursework cannot be completed using a Macintosh computer. (Note: may receive *Advanced Standing* by taking a [challenge exam](#) and typing at a minimum of 50 wpm.)

10-106-164 Customer Contact Skills 1 credit

Identify internal/external customers, develop verbal, nonverbal, and listening communication skills, develop problem-solving techniques, and ways of adding value to a customer interaction. Examine how technology impacts customer service, examine the impact on service breakdowns, and examine campaigns for customer loyalty.

10-106-172 Administrative Office Management 2 credits

Emphasizes the skills necessary to succeed in a global business office in the 21st century. Topics include: teamwork and interpersonal skills, travel arrangements, meetings and minute taking, parliamentary procedure, management and leadership skills, cultural diversity, time, stress and anger management, and virtual assistance. Prerequisites: 10-106-102 and 10-106-107; Co-requisite: 10-106-231.

10-106-182 Information Technology Concepts 3 credits

Introduces students to computer terminology, basic functions of the computer processor, various types of computer memory, computer input/output devices, application software, system software, electronic communication devices, internet searches, various communication methods including smart phones and social media, computer security concerns, and computer ethics.

10-106-186 Introduction to Project Management 2 credits

Plan and coordinate projects, develop timelines, determine priorities, increase individual and team productivity, control the workday and allocate resources using graphic tools such as MS Project or MS Excel software. Project management and coordination techniques and concepts are learned by participating in team project and completing a personal project plan. Students should be in last semester of their program OR enrolled in the Project Management Certificate.

10-106-187 Exploring Business Technologies 2 credits

Research current and emerging technologies such as smart phones, digital cameras, scanners, fax technology, tablet computers, social networking tools, video conferencing, wireless and Bluetooth technology, Web 2.0 tools, and biometric security. Create an electronic portfolio. Student must be in final semester of program or obtain consent of instructor. Co-requisite: 10-106-190.

10-106-190 Professional Development 1 credit

Using the internet and traditional methods, research the job market, develop a job search/career portfolio, and explore networking. Create a professional image for job search. The portfolio includes a resume, cover letter, thank-you letter, reference sheet, work samples and other job search materials. Prerequisite: 10-801-195 (or 20-801-201) and being in the last year of program.

10-106-194 Career Management 1 credit

Identification of factors associated with job success: conflict resolution, proper etiquette, harassment, and performance appraisal, employee benefits and adopting change. Prerequisite: student should be in last semester of the program.

10-106-195 Internship 1 credit

Students complete a 72-hour internship in an office setting supervised by a cooperating employer. The office setting is a business, medical, or legal office depending on the student's program. Must be in one of the last 2 semesters before graduation. Prerequisites: 10-106-102, 10-106-108, 10-106-109, 10-106-133, 10-106-164, 10-106-172, and 10-106-240.

10-106-231 Business Presentations and Publications 3 credits

Create professional business presentations using PowerPoint and other presentation software. Explore best practices for designing and presenting. Work with graphics, slide master, sound, video, charts and tables. Add transitions, narration and animation to enhance your presentations. Explore desktop publishing using Publisher and other desktop publishing software. Apply basic design principles while creating flyers, newsletters, and brochures. Prerequisite: sufficient scores on the COMPASS test to allow enrollment in 10-801-195; recommended: Windows competency.

10-106-240 Business Information Management 3 credits

Concentrates on the fundamentals of managing the record life cycle; supplies and equipment; charge-out procedures; retention schedules; transfer methods; control measurements; imaging systems and information security. Incorporates database skills including how to plan, create, and manage data; modify a database structure; relate tables; find, filter, query and sort data; and create forms and reports. Prerequisite: sufficient scores on the COMPASS test to allow enrollment in 10-801-195; recommended: Windows competency.

Career Potential:

- Administrative Assistant
- Administrative Professional
- Administrative Support
- Desktop Publisher Specialist
- Information Coordinator
- Information Processing Specialist
- Office Assistant
- Office Support
- Program Assistant
- Project Coordinator
- Receptionist
- Secretary
- Transcriptionist
- Word Processor

With additional educational and/or work experience, graduates may find employment as:

- Administrative Coordinator
- Executive Assistant
- Executive Secretary
- Executive Staff Assistant
- Office Manager
- Instructor/Trainer

More detailed and updated information on this program may be available at: madisoncollege.edu. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

Madison Area Technical College provides equal opportunity in education and employment.

Rev. 04/15

Emergency Medical Technician

EMT Advanced EMT

Program Numbers: 30-531-3 / 30-531-6

Less-Than-One-Year Diploma

Emergency Medical Services Program Cluster

School of Human and Protective Services

Program offered at Truax Campus

For information call: (608) 246-5250 or
(800) 322-6282 Ext. 5250

Admission Requirements

To review program admission program requirements and application processing dates, visit the program's website at: <http://madisoncollege.edu/program-info/emergency-medical-technician>.

Emergency Medical Technician (EMT) Less-Than-One-Year Diploma

This is an entry-level course and meets requirements for licensure in Wisconsin and certification with the National Registry of Emergency Medical Technicians. This course is offered throughout the district. Prerequisite: CPR certification at a professional level and a COMPASS Reading score of 80 or higher or proof of a grade of C or better in a college level English. Students must be at least 18 years old. For additional EMT course information and application/registration materials, go to: <http://madisoncollege.edu/program-info/emergency-medical-technician-basic> and click on the Admissions tab.

Program Courses

10-531-102 Emergency Medical Technician 1 2 credits

Based upon the State of Wisconsin/U.S. Department of Transportation/National Highway Transportation Safety Administration curriculum, this approximately 54 hour course covers modules 1-3 and includes classroom instruction, lectures, discussion, demonstrations, skill practice on the roles and responsibilities of being an Emergency Medical Services Provider, as well as basic communication and documentation skills, anatomy and physiology, performing a patient assessment, critical thinking, and basic airway management. This course is a co-requisite of the EMT 2 course.

10-531-103 Emergency Medical Technician 2 3 credits

This course is a co-requisite of the EMT 1 course and continues the State of Wisconsin/U.S. Department of Transportation/National Highway Transportation Safety Administration curriculum. This approximately 130 hour course covers modules 4-8 and includes classroom instruction, lectures, discussion, demonstrations, online assignments, and skill practice on emergent medical and traumatic encounters, dealing with special populations, and EMS Operations. Ten real-life or high-fidelity patient care experiences are required. Successful completion of EMT 1 and EMT 2 prepares students to obtain licensure as an EMT Basic in the State of Wisconsin. This course is a co-requisite of the EMT 1 course.

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

Note: Copies of the essential functions necessary to successfully complete these programs of study are available upon request from the division office.

Course	Hrs/week	
	Credits	Lec-Lab-Clinic
Emergency Medical Technician (EMT)		
10-531-102 Emergency Medical Technician 1.....	2	7-4-0
10-531-103 Emergency Medical Technician 2.....	3	7-4-0
Advanced EMT (AEMT)		
30-531-360 Advanced EMT	4	4-2-3



Agricultural Equipment Technology

Program Number: 10-070-1

Associate in Applied Science Degree

Transportation Program Cluster

School of Applied Science, Engineering, and Technology

Program offered at Madison Campuses

For information call: (608) 246-6800 or
(800) 322-6282 Ext. 6800

About the Program

The Agricultural Equipment Technology Program is designed to develop competent and professional agricultural equipment service technicians for entry-level employment in agricultural equipment dealerships.

This course of study will specialize in agricultural tractors, combines and implements. Students will gain technical expertise in hydraulics, power trains, electronics, fuel systems, heating, air conditioning and engine service. They will round out their professional skills with training in management, salesmanship, mathematics and people skills. In addition to classroom and laboratory instruction at Madison College, students will be expected to obtain and maintain a sponsoring dealer that will provide related work experience during the scheduled internships. This program leads to an associate degree in applied science. Graduates of the program will be qualified for a rewarding career as an agricultural equipment technician.

In conjunction with the program, Madison College has entered into an agreement with the John Deere Company to provide a section of the Agricultural Equipment Technology Program specifically for the company and its dealers. This partnership will be known as John Deere TECH Program. The classroom and laboratory situations, dealer sponsorship, and equipment studied will be John Deere. John Deere TECH students will be required to obtain and maintain a John Deere dealer sponsor while completing the program.

This program also will provide the opportunity to receive the required John Deere core certifications in Electrical, Hydraulics & Service Advisor (Computer Diagnostic System).

Admissions Requirements

To review admissions program requirements and application processing dates visit the programs website at: <http://madisoncollege.edu/program-info/agricultural-equipment-technology>.

Requirements for Graduation

Students must meet two 2.0 GPA requirements to graduate: 1) GPA for entire program must be 2.0 or above; 2) GPA of combined occupational courses (070) must be 2.0 or above.

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

		Credits	Hrs/week Lec-Lab
First Semester			
10-070-176	Electrical Systems.....	5	4-4
10-070-181	Implements 1	4	1-3
10-442-126	Metal Repair Techniques.....	2	2-2
10-801-195	Written Communication	3	3-0
10-804-107	College Mathematics	3	3-0
Semester Total		17	
Second Semester			
10-070-178	Implements 2*	3	2-8
10-070-183	Hydraulics 1*	4	5-5
10-070-187	Occupational Experience 1*	2	0-48
10-070-193	Air Conditioning*	2	2-4
10-104-104	Selling Principles*	3	3-0
Semester Total		14	
Third/Summer Session			
10-070-175	Power Transmissions	4	2-4
10-806-139	Survey of Physics	3	2-1
Semester Total		7	
Fourth Semester			
10-070-177	Fuel Systems*	3	4-4
10-070-182	Accessories and Electronics*	3	4-5
10-070-184	Hydraulics 2*	3	2-8
10-070-188	Occupational Experience 2*	2	0-48
10-801-197	Technical Reporting*	3	3-0
Semester Total		14	
Fifth Semester			
10-070-150	Precision Farming (AMS).....	1	0.5-1
10-070-191	Engine Repair Theory.....	3	1-4
10-070-195	Engine Repair*	3	1-4
10-809-195	Economics	3	3-0
10-809-197	Contemporary American Society.....	3	3-0
10-809-199	Psychology of Human Relations.....	3	3-0
Semester Total		16	
Sixth/Summer Session			
10-070-189	Occupational Experience 3.....	2	0-48

*Meets for 9 weeks.

Note:

Proficiency in working with Windows-based computer programs and basic word processing required prior to admission or coursework must be completed by the student by the end of the first year.

Note: Students are placed in English or mathematics courses based on their scores on the COMPASS or ASSET test or on completion of the appropriate prerequisite/s.



Program Courses

10-070-175 Power Transmission 4 credits

The course covers the operation, power flow, diagnosis and servicing of collar shift, synchronized, power shift and IVT transmissions. The class also discusses the operation and service of wet and dry clutches differentials, planetary drive axles, P.T.O. drives and mechanical front wheel drives.

10-070-150 Precision Farming (AMS) 1 credit

This course will introduce students to GPS and how it works with agricultural machinery functionality. Basic GPS equipment guidance systems set-up, operation and diagnostics will be utilized. Types of GPS signals and their applications currently used on John Deere agricultural equipment will be covered.

10-070-176 Electrical Systems 1 5 credits

This class begins with a discussion of the laws of electricity as they relate to the operation of the charging, starting, accessory and lighting systems. Diagnostic testing with use of a digital multimeter and current clamp. Troubleshooting will be demonstrated on alternators, starters, accessory and lighting systems. The student will be introduced to wiring schematics from technical publications. Methods of repair will be demonstrated with methods that are currently used at John Deere dealerships.

10-070-177 Fuel Systems 3 credits

This course covers the theory of operation, construction and service of diesel engine fuel systems. Also reviewed is diesel engine compression, ignition, theory combustion, chamber design and procedures for installing, timing of fuel quantity for proper combustion. Electronic fuel delivery and exhaust aftertreatment systems will be discussed as it relates to engine operation. Prerequisite: 10-070-176.

10-070-178 Implements 2 3 credits

This course provides instruction in the theory of operation and service of the grain combine. Students will learn how the combine processes grain, the basic components, the means of service and repair of the machine. Lab work is designed to provide students with hands-on experience on combines, grain platforms and corn heads. Service and adjustment activities include the cylinder, gear boxes and power transmission components. Prerequisite: 10-070-181.

10-070-181 Implements 1 4 credits

This course provides instruction in the theory of operation, adjustment and service of planting equipment. Students will learn the operation and service of corn planters and grain drills. Emphasis is given to how the corn planter seed meters work and how the attachments operate. In addition, the course also provides information on the theory, operation, adjustment and service of forage harvesting machines. Machines covered include mower conditioners, square balers, round balers and forage harvesters. Bearings, clutches, U-joints and other power transmission components also are covered.

10-070-182 Accessories and Electronics 3 credits

This course will introduce the student to the type and operation of temperature, pressure, position and speed sensors. Students will be introduced to CCD and CAN Bus on-board communication systems used on today's equipment. Students will be shown the procedure for recalling codes, transmission calibration procedures and on-board diagnostic procedures. This course will provide the electrical certification for John Deere Technicians. Prerequisite: 10-070-176.

10-070-183 Hydraulics 1 4 credits

This course introduces the student to the hydraulic systems found on 30 through 60 series John Deere Tractors. The component configuration and operational characteristics of these tractors will be introduced. Students will service, test and rebuild a radial piston pump, S.C.V. and other components of the hydraulic system. Students will follow the technical manuals diagnostic procedures to troubleshoot hydraulic system problems found on these tractors.

10-070-184 Hydraulics 2 3 credits

This course provides instruction on the 6, 7 and 8000 series John Deere tractors. The component configuration and operational characteristics of these tractors will be introduced. Students will service, test and rebuild the axial piston pump, SCV's and other components of the hydraulic system. Students will follow the technical manual diagnostic procedures to check out and troubleshoot the hydraulic system. This course will provide the hydraulics certification for John Deere technicians. Prerequisite: 10-070-183.

10-070-187 Occupational Experience 1 (Spring Session) 2 credits

Students receive on-the-job experience in the areas of implement repair and service. Areas covered include, but are not limited to, tillage, planting and hay harvesting machines. Students also will be exposed to the operation and function of the dealership service department.

10-070-188 Occupational Experience 2 (Fall Session) 2 credits

Students receive on-the-job experience in the areas of combines, corn heads and grain platforms. Other areas covered include set-up, tillage and planting equipment. Prerequisite: 10-070-187.

10-070-189 Occupational Experience 3 (Summer Session) 2 credits

Students receive on-the-job experience in tractor engine repair, air conditioning, electrical and hydraulic system troubleshooting. Other areas covered include service department operation, warranty work and customer contacts. Prerequisite: 10-070-188.

10-070-191 Engine Repair Theory 3 credits

Study in this course will allow the student to develop a basic knowledge of combustion engine design and operation with the major emphasis on diesel engines. Experience in the course will provide the student with the skills and knowledge needed to diagnose, overhaul, maintain, adjust and repair engines found in agricultural machines and equipment.

10-070-195 Engine Repair 3 credits

Study in this course will allow the student to develop a basic knowledge of combustion engine design and operation with the major emphasis on diesel engines. Experience in the course will provide the student with the skills and knowledge needed to diagnose, overhaul, maintain, adjust and repair engines found in agricultural machines and equipment.

10-070-193 Air Conditioning 2 credits

This course covers the theory of operation, service and testing of HVAC (Heating Ventilation and Air Conditioning) units used to cool and heat the operator's station. Lab work consists of leak detecting, evacuation, recycling, charging, retrofit procedures, and component installation. Electrical circuits and troubleshooting of systems will also be covered. Air conditioning certification tests are also given to students enrolled in this course.

10-442-126 Metal Repair Techniques 2 credits

This course covers safety, layout and measurement, grinding, drill press and lathe operation, filing, threading, properties of metals, oxy-acetylene welding, brazing and cutting, and SMAW, GMAW, GTAW and FCAW.

Career Potential:

- Service Technician
- Field Service Technician
- Lead Technician
- Shop Foreman
- Service Writer
- Coordinator
- Customer Support Representative
- Ag Equipment Salesperson
- Consumer Products Salesperson
- Service Manager
- Parts Manager
- Parts Counterperson

With additional education and/or work experience, graduates may find employment as:

- Ag Company
- Service Representative
- Ag Company Sales Representative
- Dealer Sales Manager
- Dealership Manager
- Dealership Owner/Operator

More detailed and updated information on this program may be available at: madisoncollege.edu. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

Madison Area Technical College provides equal opportunity in education and employment.

Animation – Concept Development

Program Number: 10-207-1

Associate in Applied Arts Degree

Applied Arts Program Cluster

School of Business and Applied Arts

Program offered at Downtown Education Center

For information call:

(608) 246-6003 or (800) 322-6282 Ext. 6003

About the Program

The Associate of Arts Degree in Animation & Concept Development offers courses in traditional and digital skills related to professional 3D animation and concept planning and development. The program assists students in developing a broad foundation of skills addressing such topics as concept drawing and layout; figure drawing for concept work; concept presentation; digital modeling, texturing, rigging, and animation; level design and construction; asset creation and management; digital lighting and cinematography. Graduating students have the opportunity to apply for professional internships and mentorships, and are required to develop a professional portfolio and demo-reel.

Admissions Requirements

To review admissions program requirements and application processing dates visit the programs website at: <http://madisoncollege.edu/program-info/animation>.

Program Courses

10-207-101 Animation Industry Overview 1 credit
A survey course for those considering a career in digital 3D for cinema, game development, and other industries. Topics include professional standards and expectations, best practices, and an introduction to technical and artistic principles typical of studios served by the Animation & Concept Development Program. Successful completion of 10-207-101 is required for students scheduled to enter the Animation—Concept Development Program.

10-207-103 Basic Drawing for Concepting 3 credits
An introductory drawing course emphasizing visualization and rendering skills necessary for concept development in animation and digital 3D. Students will learn the fundamentals of perspective, proportion, linear rendering, basic value structure, and digital approaches currently practiced in related industries. Lecture/demonstration and guided practice leads students toward the creation of concept drawings intended for modeling in 3D, including the development of variations, digital techniques to enhance productivity, and discussion of the strengths and limitations of 3D final execution. Prerequisite: 10-207-101; Co-requisites: 10-207-110, 10-207-111, and 10-207-139.

10-207-110 Animation 1 2 credits
General overview of professional animation, including current industry standards and practices. Students begin a basic study of motion dynamics based largely on the industry's "Fundamental Principles of Animation," presented through a combination of lecture and demonstration and continual analysis of existing professional animation. Contemporary standards, definitions, workflows, etc., are discussed as well as job organization and job-tracking skills, and translation of basic motion principles into digital 3D space. Prerequisite: 10-207-101; Co-requisites: 10-207-103, 10-207-111, and 10-207-112.

10-207-111 Introduction to Digital 3D 3 credits
A foundation introduction to digital 3D. Students learn to organize electronic files and projects into a professional workflow, and to electronically navigate Cartesian space. Class activities include the basics of digital modeling and surfacing, and the translation of 2D prep-work into 3D prototypes. Prerequisite: 10-207-101; Co-requisites: 10-207-103, 10-207-110 and 10-207-112.

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

Prior to Start of Program (required)		Credits	Hrs/week Lec-Lab
10-207-101	Animation Industry Overview.....	1	1-1
Semester Total		1	

FIRST YEAR		Credits	Hrs/week Lec-Lab
First Semester			
10-207-103	Basic Drawing for Concepting.....	2	3-3
10-207-110	Animation 1.....	2	2-2
10-207-111	Intro to Digital 3D.....	2	3-3
10-207-112	Photoshop for 3D and Concepting.....	2	0-2
10-207-114	Modeling 1.....	2	0-2
10-207-139	Design and Color for Concepting.....	2	2-2
10-801-195	Written Communication.....	3	3-0
10-809-199	Psychology Human Relations.....	3	3-0
Semester Total		18	

Second Semester			
10-207-117	Figure Drawing for Concepting.....	3	3-3
10-207-120	Animation 2.....	2	3-3
10-207-122	Advanced Digital 3D.....	2	3-3
10-207-150	Animation Concepts 1.....	3	3-3
10-207-224	Modeling 2.....	2	0-2
10-801-196	Oral/Interpersonal Communication.....	3	3-0
10-804-107	College Mathematics.....	3	3-0
Semester Total		18	

SECOND YEAR		Credits	Hrs/week Lec-Lab
First Semester			
10-207-130	Digital Set Design 1.....	2	2-2
10-207-131	Animation 3.....	2	2-2
10-207-134	Modeling 3.....	2	2-2
10-207-140	Advanced Animation Studio 1.....	2	2-2
10-207-151	Animation Concepts 2.....	2	2-2
10-801-198	Speech.....	3	3-0
	<u>Elective</u>	<u>3</u>	<u>E</u>
Semester Total		16	

Second Semester			
10-207-133	Digital Set Design 2.....	1	0-2
10-207-141	Animation 4.....	3	3-3
10-207-142	Animation Internship.....	2	0-4
10-207-143	Animation Portfolio.....	2	2-2
10-207-144	Advanced Animation Studio 2.....	3	3-3
20-809-276	Business Ethics* OR.....	3	3-0
10-809-166	Intro to Ethics: Theory and Application.....	(3)	3-0
10-809-197	Contemporary American Society.....	3	3-0
Semester Total		17	

Note: Students are placed in English or mathematics courses based on their scores on the COMPASS or ASSET test or on completion of the appropriate prerequisite/s.

*Other course options are available. See program advisor for information.



Program Courses (continued)

10-207-112 Photoshop for 3D & Concepting 2 credits

An introduction to Photoshop as used in professional 3D asset creation and concept development. File organization, efficiency, capture, and best practices are discussed, as well as basic texture creation, tiling, and interaction with 3D software. Co-requisites: 10-207-110 and 10-207-111.

10-207-114 Modeling 1 2 credits

This course is an introduction to the fundamental techniques, theories, workflows and software as it relates to 3D modeling for real-time and pre-rendered production. Students will create digital models with an emphasis on topographical density, texture mapping, multi-step processes and asset design. Lectures and projects consist of the various production techniques that explore polygonal modeling and how to prepare constructed models for texturing.

10-207-117 Figure Drawing for Concepting 3 credits

An introduction to drawing the human figure for the purpose of creating concept art for 3D industries. Course syllabus includes approaches to gestural sketching, proportional and anatomical construction, complete figure studies, and digital techniques for making corrections, variations, and enhancing productivity based on current 3D industry practices. Prerequisites: 10-207-103 and 10-207-112.

10-207-120 Animation 2 3 credits

Continuation of the study of motion with emphasis on character movement and animation. A combination of lectures and class demonstration introduces students to forward- and inverse-kinematics, and gradually more complex character rigging. The continued study of body mechanics and dynamics by analyzing classic and contemporary professional animation will assist students in translating their own ideas into credible motion in digital form. Prerequisites: 10-207-103, 10-207-110, and 10-207-111.

10-207-122 Advanced Digital 3D 3 credits

A continuation of Introduction to Digital 3D, this course moves students into more complex modeling and surfacing challenges. Specialized techniques such as patch- and advanced spline-modeling are explored as well as specialized shaders, normal maps, and other advanced surfacing options. Students complete the semester with the design and creation of a complex, multi-part object correctly constructed, linked and boned for advanced animation techniques. Prerequisites: 10-207-103, 10-207-110, 10-207-111 and 10-207-112.

10-207-130 Digital Set Design 1 2 credits

Students concentrate on the planning and construction of architectural and environmental spaces in game-engine software. Basic architectural principles as they relate to animation and appropriate effects for specific themes are explored as well as environmental factors relating to the creation of credible worlds. Class activities include the exploration of specialized perspective problems, world-specific texture-sets, lighting and composition. Prerequisites: 10-207-103, 10-207-120, 10-207-139, and 10-207-122.

10-207-131 Animation 3 2 credits

By exploring various off-computer techniques for analyzing character motion, students practice translating their observations into digital form and applying them to their own creations. Extensive study of actual footage and professional work helps students make the conceptual transition from real-world to believable virtual motion. Prerequisites: 10-207-120 and 10-207-122; Co-requisite: 10-207-151.

10-207-133 Digital Set Design 2 1 credit

Students build upon skills learned in Digital Set Design 1 and work toward the completion of a functional digital environment. In-engine animation and playback is discussed along with further studies in architectural principles, interior and exterior lighting, textures, and fine-tuning the final appearance of each student's own creation. Prerequisites: 10-207-130, 10-207-131, and 10-207-140.

10-207-134 Modeling 3 2 credits

A continuation of modeling skills developed in first two semesters with concentration in creating character and creature models correctly structured for rigging and animation. Realistic and stylized designs are explored as well as advanced UV and basepage techniques. Prerequisites: 10-207-117, 10-207-120, and 10-207-122.

10-207-139 Design & Color for Concepting 2 credits

An introduction to the fundamental principles of design and how they relate to both 2D and 3D environments. The course examines differences in interpretation when design principles are applied to a variety of 2D and 3D scenarios. The second half of the semester introduces primary, secondary and tertiary colors leading to an in-depth exploration of color theory and how these concepts relate to 3D media. Prerequisite: 10-207-101; Co-requisites: 10-207-103, 10-207-110, and 10-207-111.

10-207-140 Advanced Animation Studio 1 2 credits

This is the first class in a two-part comprehensive animation studio series. It is a project-based course in which students develop their own projects in consultation with instructors. Extensive studio time provides advanced students with large blocks of instructor and equipment access and allows an in-depth study of particular aspects of digital 3D targeting the completion of a professional quality demo-reel. Group study and interaction is encouraged and detail job tracking is required. Prerequisites: 10-207-120, 10-207-122, and 10-207-150.

10-207-141 Animation 4 3 credits

Animation 4 is an advanced course in multiple aspects of digital 3D motion. The focus of this course is to develop more intricate and complex character and mechanical animation. Prerequisites: 10-207-122, 10-207-131 and 10-207-151.

10-207-142 Animation Internship 2 credits

Students work on-site in a professional setting or work on a specific task in consultation with a professional mentor. Regular reviews with a professional are scheduled to assess the student's progress and work quality. Details of internship arrangements can be developed between the student and the participating company as long as specific minimum course requirements are fulfilled. Co-requisite: 10-207-143.

10-207-143 Animation Portfolio 2 credits

Each student finalizes a series of animations and other artwork to be posted online highlighting his/her capabilities. The collection is targeted to potential employers and/or to four-year animation degree programs for further education. In addition, each student prepares a professional-level 2D portfolio and a personal ID package (stationary, business cards, etc.) and is required to participate in the year-end portfolio show in conjunction with other art degree programs. Prerequisites: 10-207-130, 10-207-131, 10-207-140, and 10-207-151; Co-requisite: 10-207-142.

10-207-144 Advanced Animation Studio 2 3 credits

This is the second class in a 2-part comprehensive studio series. It is a project-based course in which students develop their own projects in consultation with Instructors and industry professionals. Extensive studio time provides advanced students with large blocks of Instructor and equipment access, and allows an in-depth study of particular aspects of digital 3D targeting the student's particular interests. Group study and interaction is encouraged and detailed job-tracking is required. Prerequisites: 10-207-131 and 10-207-140.

10-207-150 Animation Concepts 1 3 credits

Intensive study of the process of developing visual concepts for 3D execution. Course Traditional and digital drawing techniques cover the design of architectural, mechanical, vehicle, and other assets related to the creation of credible and functional 3D environments. Prerequisites: 10-207-103, 10-207-111, 10-207-112, and 10-207-139.

10-207-151 Animation Concepts 2 2 credits

Intensive study of the process of developing visual concepts for 3D execution, with concentration on the development of character and creature ideas for 3D execution. Traditional and digital drawing techniques cover the design of functional body-mechanics, personality traits and other aspects related to creating the illusion of life. Prerequisites: 10-207-117 and 10-207-150; Co-requisite: 10-207-131.

10-207-224 Modeling 2 2 credits

This course is an advanced modeling class focusing on specific techniques for creating hard surface models. Hard surfaced models are defined in this course as man-made or machined objects, examples might include helmets, wind turbines, robots or furniture. Building on the concepts of Modeling 1, students will be required to design, research, model, texture and light various hard surface projects over the course of the semester. Prerequisite: 10-207-114.

Recommended Electives

10-207-152 Adv. Animation Workshop
10-201-117 Illustrative Figure Drawing

Career Potential:

- Character Animator
- Concept Artist/Designer
- Storyboard Artist
- Animator, Modeler, Lighter or Illustrator in the following industries:
 - Advertising
 - Broadcasting
 - Entertainment
 - Game Design
 - Instructional
 - Medical and Scientific
 - Multimedia Production
 - Printing/Publishing
 - Product Design Development
 - Web Design

Career opportunities in the animation field include: character animation, modeling, lighting, digital game production, illustration for print, architectural rendering, instructional animation, simulation animation for documentary and journalism.

More detailed and updated information on this program may be available at: madisoncollege.edu. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

Madison Area Technical College provides equal opportunity in education and employment.

Architectural Studies Transfer Program

Program Number: 10-614-1-TR

Associate in Applied Science Degree

Applied Engineer Technologies Cluster

School of Applied Science, Engineering, and Technology

Program offered at Madison Campus

For information call:

(608) 246-6800 or (800) 322-6282 Ext. 6800

About the Program

The architectural area is broad and challenging. It is the purpose of the architect and/or consulting engineer to supply owners with a set of plans and specifications of the structure desired. The architectural technician assists the architect or engineer in the development of plans and specifications, and while in the field, checks on building compliance with the contract documents.

In addition to the two year associates degree, a program-to-program articulation agreement has been developed for potential transfer into the Bachelor of Science in Architectural Studies (BSAS) at UW-Milwaukee. Completion of our program may make a student eligible to transfer with Junior status into the BSAS program. This is not a guaranteed transfer process and students must qualify for the BSAS program. Pre-registration advising is strongly recommended for proper placement by contacting an academic advisor at the Student Development Center (608/246-6076) or faculty advisor at 608/246-6746.

Admission Requirements

To review program admission requirements and application processing dates visit the programs website at:

<http://madisoncollege.edu/program-info/architectural-technology>.

For the transfer version of the Architectural Technology program, see the information at:

<http://madisoncollege.edu/interested-in-architectural-technology-bachelors-degree> and follow the directions for a [plan change](#) into this program.

Unique Requirements for Completion

69 credits and a GPA of 2.5 (BC) or above. Average of 2.5 (BC) or above for occupational specific courses.

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

FIRST YEAR		Credits	Hrs/week Lec-Lab
First Semester			
10-614-111	Architectural Graphics 1	3	1-4
10-614-113	Intro to CAD-Architectural.....	3	1-3
10-614-121	Construction Materials.....	3	3-0
10-614-135	Building Codes.....	2	2-0
20-801-201	English 1	3	3-0
20-804-212	College Algebra	3	3-0
Semester Total		17	
Second Semester			
10-614-112	Architectural Graphics 2	3	1-4
10-614-115	Intro to Revit	3	1-3
10-614-118	Design Communications.....	2	1-2
10-614-122	Revit MEP.....	2	1-2
20-801-202	English 2	3	3-0
20-804-213	Trigonometry.....	3	3-0
20-806-220	Physics for Everyday Life OR.....	3	3-0
10-806-154	General Physics OR.....	(4)	3-2
20-806-221	General College Physics 1	(5)	3-2
Semester Total		19	
SECOND YEAR			
First Semester			
10-614-101	Architectural Theory 1	3	3-0
10-614-123	Electrical and Mechanical Systems.....	4	4-0
10-614-155	Advanced Revit.....	2	2-1
10-614-154	Site Design	3	1-4
10-614-178	Mechanics/Strengths of Materials	4	4-0
10-614-193*	Job Orientation	(1)	1-0
Semester Total		16	
Second Semester			
10-614-100	Introduction to Architecture	3	1-4
10-614-114	Advanced CAD	2	1-2
10-614-132*	Building Estimating	(2)	2-0
10-614-142	Architectural Detailing.....	2	1-2
10-614-145	Architectural Design Studio	4	2-4
10-614-194	Portfolio Preparation.....	1	1-0
10-809-166	Intro to Ethics.....	3	3-0
20-809-231	Introduction to Psychology	3	3-0
Semester Total		18	
Total Credits		70	

*NOTE: Students should consider taking 10-614-132 and 10-614-193 in case they change their mind and wish to complete the regular Architectural Technology program.

Note: Students are assessed for correct placement in English or mathematics courses based on their scores on the COMPASS test or on completion of the appropriate prerequisite/s. In addition, there may be courses in other subject areas that may use COMPASS scores as prerequisites when reading, writing, math, or critical thinking competencies are required.



MATC AAS Degree Courses	MATC Courses taken in lieu of AAS Courses for UW-M Transfer Program	Required UW Milwaukee Courses substituted by MATC Transfer Courses
801-195 (Written Communication)	801-201 (English 1)	General Studies
801-197 (Technical Reporting)	801-202 (English 2)	English 102
809-166 (Intro to Ethics)	809-166 (Intro to Ethics) or 809-262 (Contemporary Moral Issues)	Philosophy Elective
809-195 (Economics)	809-211 (Macroeconomics)	Economics 104 (Social Science)
809-197 (Contemporary American Society)	809-203 (Intro to Sociology)	Sociology 101 (Social Science)
809-199 (Psychology of Human Relations)	809-231 (Intro to Psychology)	Psychology 202 (Social Science)
806-153 (Technical Physics)	806-221 (General College Physics 1)	Physics 120 (Physics 107/105)
804-151 (Technical Math 1)	804-212 (College Algebra)	Mathematics 116
804-152 (Technical Math 2)	804-213 (Trigonometry)	Mathematics 117

Cultural Diversity Options: If you wish to satisfy UW-Milwaukee's Cultural Diversity requirement, MATC offers 5 courses as options.

MATC Transfer

809-172 Race, Ethnic & Diversity
809-217 Race, Class, Gender
809-241 Race and Ethnic Relations
809-284 Anthro of Race & Ethnicity

UW-Milwaukee

American Minority Groups SOCIOL 224
General Elective GEN EL
American Minority Groups (D) SOCIOL 224
Anthropology Elective ANTHRO EL

NOTES:

- Safety procedures required in all labs
- Prerequisites can be waived with divisional approval
- Advanced standing may be gained through division deans

The Architectural Technician program participates in MAAP (Mandatory Assessment, Advising and Placement). This requires new incoming students to complete the COMPASS test. Advisement and course placement in English and math is done based on tests results. Testing will be required prior to admission.

Program Courses

10-614-100 Introduction to Architecture 3 credits

This college parallel course examines the way one perceives the man-made environment, how to better understand it and related disciplines. An overview of architecture and its elements including design, history, terminology, sustainable design, urban design and landscape architecture will be presented.

10-614-101 Architectural Theory 1 3 credits

A survey and examination of key underlying architectural design tenets; theory; philosophies; and social, cultural and behavioral factors in applied environmental settings. Theoretical design principles are introduced in lecture and readings that incorporate seminal works of architecture. Students combine the creation of collage diagram analysis with intensive writing experiences as a model for learning theoretical design principles. Prerequisites: 10-614-111 and 20-801-201, or consent of instructor.

10-614-111 Architectural Graphics 1 3 credits

Emphasizes architectural drafting and the theory of drafting. Proper architectural lettering, line work and use of drafting tools are discussed. Orthographic projection, isometric, axonometric and perspective drawings, contours, shade and shadow are covered in the first semester. Massing studies using the software "Sketch up" is also incorporated.

10-614-112 Architectural Graphics 2 3 credits

Using the latest release of AutoCAD, students develop a preliminary set of Construction Document drawings for a residential project. Emphasis is placed on CAD standards, drawing set organization, building element coordination and plotting. Drawing types range in scale from site plans to wall sections. Relevant zoning and building code requirements are reviewed. Prerequisites: 10-614-111 and 10-614-113.

10-614-113 Introduction to CAD-Architectural 3 credits

Major emphasis is placed on learning the basic commands necessary to complete 2-dimensional construction drawings for the architectural community. Approximately 50 percent of the course is spent on lecture/demonstrations concerning software commands and procedures, while 50 percent of the course is spent in on developing operating skills. A basic understanding of Windows and file management is necessary for success within the course. The current version of AutoCAD is used as the teaching tool.

10-614-114 Advanced CAD 2 credits

Students use the latest release of AutoCAD to develop CAD Manager skills by using the program efficiently and consistently. Topics include trouble shooting, file management, CAD standards, template creation, plotting styles, keyboard commands, dynamic block creation, macros and custom toolbars. Working in project teams, students will produce a preliminary set of coordinated AutoCAD drawings for an offsite owner. Prerequisite: 10-614-113.

Program Courses (continued)

10-614-115 Introduction to Revit 3 credits

Students gain an understanding of the concepts of the industry's leading 3D architectural modeling software. Building Information Modeling (BIM) concepts and advantages will be discussed throughout the course. Students learn command concepts for creating 3D BIM models and how this model is used for automatic creation of floor plans, elevations, sections, and many other tedious drafting tasks. The course text takes you through a tutorial approach to create a model and learn the input commands of the software, yet allows the student to explore the software more fully. Instructor input is given throughout the course in order to incorporate various additional topical areas not covered within the text. At the end of the course, students will have developed a set of typical construction drawings based on their BIM mode. Prerequisites: 10-614-113 and 10-614-111.

10-614-118 Design Communications 2 credits

Studio course in techniques and conventions of graphic communication as an aid in the design process. Covers graphic principles, media, sketching and perspective drawing techniques. Emphasis is on developing drawing and rendering skills using pencil, color marker, and pastels. Students will generate sketches, presentation plans, one- and two-point perspective drawings and will use these drawings to generate a variety of architectural presentations. Prerequisite: 10-614-111.

10-614-121 Construction Materials 3 credits

Emphasizes materials used in building construction and their manufacture and application in various construction systems from wood frame to masonry, steel and precast concrete. Basic properties of materials are discussed as well as how, when, and where to use them.

10-614-122 Revit MEP 2 credits

Using the industry's leading 3D architectural modeling software, students will incorporate mechanical, electrical, and piping systems into an architectural BIM model. Building Information Modeling (BIM) concepts and advantages will be discussed throughout the course. Coursework will run in conjunction with skills developed in Intro to Revit. Students will be developing vignettes for each building system type using Revit. Co-requisite: 10-614-115

10-614-123 Electrical and Mechanical 4 credits

Covers the basic principles of plumbing, electrical, lighting, daylighting, HVAC, fire safety, sprinklers, energy efficient design, vertical transportation and acoustics found in buildings today. Particular attention will be paid to the International Code and its impact on these systems. Guest speakers and a small student designed project will augment the course. Prerequisites: 10-614-122 AND co-requisites of 10-614-178 and 10-614-154.

10-614-132 Building Estimating 2 credits

Studies problems and responsibilities of the estimator, including plans, specifications and published construction cost data. Emphasis is on understanding estimating techniques and methods of preparing estimates and take-offs. Co-requisites: 10-614-142 and 10-614-145.

10-614-135 Building Codes 2 credits

Emphasis will be placed on the study of the International Code. The student will become familiar with using the code and will acquire a general knowledge of codes, standards and federal regulations. Prerequisites: 10-614-111 and 10-614-121.

10-614-142 Architectural Detailing 2 credits

This course provides an in-depth study of materials and building assemblies as it pertains to accepted practices in architectural detailing and design. Emphasis will be placed on detailing techniques commonly found in commercial construction. Topics included are masonry, steel, and concrete construction. Field trips and guest lecturers from the architectural, engineering and construction industry will supplement the course. Co-requisites: 10-614-132 and 10-614-45.

10-614-145 Architectural Design Studio 4 credits

Covers the basic skills used in the building design process. Introduces the student to building siting and massing, program analysis, building circulation, space flow diagrams, adjacency studies and building context. The design process continues with the integration of the structural steel framing. The student will design the framing plans as well as complete the calculations for the sizing of the individual steel members. Prerequisites: 10-614-112 and 20-804-212 AND co-requisites of 10-614-142 and 10-614-132

10-614-154 Site Design 3 credits

Introduces the student to the basic design issues of the urban environment. Explore building massing and site analysis as they relate to the urban context. Learn about vehicular and pedestrian circulation, zoning analysis, contour manipulation, and basic plant material selections. Course places a strong emphasis on in-class presentations utilizing the use of multimedia digital technology. Prerequisite: 20-804-212 AND co-requisites of 10-614-123 and 10-614-178.

10-614-155 Advanced Revit 2 credits

Students develop proficiency in skills introduced in Intro to Revit, including modeling, family creation, design options, importing, rendering, and exporting with the current version of Revit Architecture. Particular emphasis will be placed on advanced modeling and family creation. This class also introduces new concepts related to creating and managing 3D BIM models including defining site topography and site-related features, massing, phasing, file linking, and worksharing. Competence will be demonstrated through performance on the CAD station, through saved projects, and through submitted printouts that will include both construction documents and rendered images. For one project, students will be working within a group and submitting a joint project, during which students will develop the essential worksharing skills required to complete large-scale building projects that require multiple drafters. Prerequisites: 10-614-111, 10-614-113, 10-614-115.

10-614-178 Mechanics/Strength of Materials 4 credits

Study of forces that act on a structural member. These forces affect all types of structures including parts of machines. This course will emphasize the use of statics as it applies to building structures. We will look at types of force systems, vectors, resultant forces, moments, truss analysis, and reactions. Strength of Materials provides the various analytical tools necessary for the sizing of specific structural members based on the loading conditions and strength of the material. The student will gain the knowledge necessary to calculate the sizes of members made of specific materials including wood, steel and masonry. Prerequisites: 20-804-212 AND co-requisites of 10-614-123 and 10-614-154.

10-614-193 Job Orientation 1 credit

Occupational information prepares students to seek employment. Includes resume preparation, job interviews, portfolio design, and letters of introduction and recommendation. Former graduates are invited to discuss needs of students before employment. Representatives of labor, management, business and the professions are invited to discuss points of interest toward becoming an employee. Prerequisite: third-semester standing.

10-614-194 Portfolio Preparation 1 credit

Techniques and conventions of developing an architectural portfolio will be addressed as students generate personal portfolios for use in seeking employment. Emphasis is on developing professional documentation of work accomplished in school and related activities, both in hard copy and electronic format. Former graduates are invited to discuss current trends in hiring and what makes a portfolio stand out. Each student will display their portfolio in the annual Architectural Technology Portfolio Show to take place each Spring. Prerequisite: fourth-semester standing.

More detailed and updated information on this program may be available at: [.madisoncollege.edu](http://madisoncollege.edu). The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

Madison Area Technical College provides equal opportunity in education and employment.

Rev. 04/15

Architectural Technology

Program Number: 10-614-1

Associate in Applied Science Degree

Applied Engineering Technologies Program Cluster

School of Applied Science, Engineering, and Technology

Program offered at Madison Campuses

For information call: (608) 246-6800 or
(800) 322-6282 Ext. 6800

About the Program

The architectural area is broad and challenging. It is the purpose of the architect and/or consulting engineer to supply owners with a set of plans and specifications of the structure desired. The architectural technician assists the architect or engineer in the development of plans and specifications, and while in the field, checks on building compliance with the contract documents.

Note:

In addition to the two-year Associate Degree, a program-to-program articulation agreement has been developed for a potential transfer into the Bachelor of Science in Architectural Studies (BSAS) at UW-Milwaukee. Successful completion of this program could make a student eligible to transfer with junior status into the BSAS program. Students are required to meet with the program director for advising and course scheduling plans. To see the [transfer version](#) of the program (program number 10-614-1-TR), see the [Interested in a Bachelor's Degree](#) information page.

Admission Requirements

To review program admission requirements and application processing dates visit the programs website at: <http://madisoncollege.edu/program-info/architectural-technology>.

Requirements for Graduation

Graduation requirements: 69 credits and a GPA of 2.0 (C) or above; average of 2.0 (C) or above required to occupational specific courses.

Program Courses

10-614-111 Architectural Graphics 1 **3 credits**
Emphasizes architectural drafting and the theory of drafting. Proper architectural lettering, line work and use of drafting tools are discussed. Orthographic projection isometric, axonometric and perspective drawings, contours, shade and shadow are covered in the first semester. Massing studies using the software "Sketch up" is also incorporated.

10-614-112 Architectural Graphics 2 **3 credits**
Using the latest release of AutoCAD, students develop a preliminary set of Construction Document drawings for a residential project. Emphasis is placed on CAD standards, drawing set organization, building element coordination and plotting. Drawing types range in scale from site plans to wall sections. Relevant zoning and building code requirements are reviewed. Prerequisites: 10-614-111 and 10-614-113.

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

FIRST YEAR

First Semester	Credits	Hrs/week	
		Lec	Lab
10-614-111 Architectural Graphics 1.....	3		1-4
10-614-113 Intro to CAD-Architectural.....	3		1-4
10-614-121 Construction Materials.....	3		3-0
10-614-135 Building Codes.....	2		2-0
10-801-195 Written Communication.....	3		3-0
10-804-114 College Technical Math 1B.....	2		2-0
Semester Total	16		

Second Semester

10-614-112 Architectural Graphics 2.....	3		1-4
10-614-115 Intro to Revit.....	3		2-2
10-614-118 Design Communications.....	2		1-2
10-614-122 Revit MEP.....	2		1-2
10-804-116 College Technical Math 2.....	4		4-0
10-806-154 General Physics 1.....	4		3-2
Semester Total	18		

SECOND YEAR

First Semester

10-614-123 Electrical and Mechanical Systems.....	4		4-0
10-614-152 Intro to Sustainable Design and LEED.....	2		2-0
10-614-154 Site Design.....	3		2-2
10-614-155 Advanced Revit.....	2		1-2
10-614-178 Mechanics/Strengths of Materials.....	4		4-0
10-614-193 Job Orientation.....	1		1-0
10-809-199 Psychology of Human Relations.....	3		3-0
Semester Total	19		

Second Semester

10-614-114 Advanced CAD.....	2		1-2
10-614-132 Building Estimating.....	2		2-0
10-614-142 Architectural Detailing.....	2		1-2
10-614-145 Architectural Design Studio.....	4		2-4
10-614-194 Portfolio Preparation for Architectural.....	1		1-0
10-801-197 Technical Reporting.....	3		3-0
10-809-166 Intro to Ethics: Theory & Application.....	3		3-0
Semester Total	17		

Note: Students are assessed for correct placement in English or mathematics courses based on their scores on the COMPASS test or on completion of the appropriate prerequisite/s. Additionally, there may be courses in other subject areas that may use COMPASS scores as prerequisites when reading, writing, math, or critical thinking competencies are required.

10-614-113 Intro to CAD-Architectural **3 credits**
Major emphasis is placed on learning the basic commands necessary to complete 2-dimensional construction drawings for the architectural community. Approximately 50 percent of the course is spent on lecture/demonstrations concerning software commands and procedures, while 50 percent of the course is spent in on developing operating skills. A basic understanding of Windows and file management is necessary for success within the course. The current version of AutoCAD is used as the teaching tool. Co-requisite: 10-614-111, or instructor consent.



Program Courses (Continued)

10-614-114 Advanced CAD 2 credits

Students use the latest release of AutoCAD to develop CAD Manager skills by using the program efficiently and consistently. Topics include trouble shooting, file management, CAD standards, template creation, plotting styles, keyboard commands, dynamic block creation, macros and custom toolbars. Working in project teams, students will produce a preliminary set of coordinated AutoCAD drawings for an offsite owner. Prerequisite: 10-614-113.

10-614-115 Intro to Revit 3 credits

Students gain an understanding of the concepts of the industry's leading 3D architectural modeling software. Building Information Modeling (BIM) concepts and advantages will be discussed throughout the course. Students learn command concepts for creating 3D BIM models and how this model is used for automatic creation of floor plans, elevations, sections, and many other tedious drafting tasks. The course text takes you through a tutorial approach to create a model and learn the input commands of the software, yet allows the student to explore the software more fully. Instructor input is given throughout the course in order to incorporate various additional topical areas not covered within the text. At the end of the course, students will have developed a set of typical construction drawings based on their BIM mode. Prerequisites: 10-614-113 and 10-614-111.

10-614-118 Design Communications 2 credits

Studio course in techniques and conventions of graphic communication as an aid in the design process. It covers graphic principles, media, sketching and perspective drawing techniques. Emphasis is on developing drawing and rendering skills using pencil, color marker and pastels. Students generate plans and one- and two-point perspective drawings and use these drawings to generate a variety of architectural presentations. Prerequisite: 10-614-111.

10-614-121 Construction Materials 3 credits

This course emphasizes materials used in building construction and their manufacture and application in various construction systems from wood frame to masonry, steel and precast concrete. Basic properties of materials are discussed as well as how, when and where to use them.

10-614-122 Revit MEP 2 credits

Using the industry's leading 3D architectural modeling software, students will incorporate mechanical, electrical, and piping systems into an architectural BIM model. Building Information Modeling (BIM) concepts and advantages will be discussed throughout the course. Coursework will run in conjunction with skills developed in Intro to Revit. Students will be developing vignettes for each building system type using Revit. Co-requisite: 10-614-115.

10-614-123 Electrical and Mechanical Systems 4 credits

This course covers the basic principles of plumbing, electrical, lighting, daylighting, HVAC, fire safety, sprinklers, energy efficient design, vertical transportation and acoustics found in buildings today. Particular attention will be paid to the International Building Code and its impact on these systems. Guest speakers and a small student designed project will augment the course. Prerequisites: 10-614-112 and 10-804-116.

10-614-132 Building Estimating 2 credits

Studies problems and responsibilities of the estimator, including plans, specifications and published construction cost data. Emphasis on estimating techniques and methods of preparing estimates and take-offs. Prerequisites: 10-614-115 and 10-804-116.

10-614-135 Building Codes 2 credits

Emphasis is placed on the study of the Wisconsin Enrolled Commercial Building Code. The student will become familiar with using the code and will acquire a general knowledge of codes, standards and federal regulations. Co-requisites: 10-614-111 and 10-614-121.

10-614-142 Architectural Detailing 2 credits

This course provides an in-depth study of materials and building assemblies as it pertains to accepted practices in architectural detailing and design. Emphasis will be placed on detailing techniques commonly found in commercial construction. Topics included are masonry, steel, and concrete construction. Field trips and guest lecturers from the architectural, engineering and construction industry will supplement the course. Prerequisites: 2nd year standing, 10-614-178; Co-requisite: 10-614-145.

10-614-145 Architectural Design Studio 4 credits

Covers the basic skills used in the building design process. Introduces the student to building siting and massing, program analysis, building circulation, space flow diagrams, adjacency studies, and building context. The design process continues with the integration of the structural steel framing. The student will design the framing plans as well as complete the calculations for the sizing of the individual steel members. Prerequisites: 10-614-112 and 10-804-116.

10-614-152 Intro Sustainable Design/LEED® 3 credits

The course provides the learner with an overview of sustainable design relevant to the design and construction industry, while concentrating on accreditation within the US Green Building Council LEED® (Leadership in Energy and Environmental Design) v.3 sustainable design program. Concepts discussed: the need for sustainable design, architects as stewards of the environment, construction activities, site selection, stormwater management, landscaping choices, building energy and atmosphere, indoor environmental quality, materials and resources and the Green Associate LEED® exam. Guest speakers and field trips provide additional support.

10-614-154 Site Design 3 credits

Introduces the basic design issues of the urban environment. Explore building massing and site analysis as they relate to the urban context. Learn about vehicular and pedestrian circulation, zoning analysis, contour manipulation and basic plant material selections. Course places a strong emphasis on in-class presentations utilizing the use of multimedia digital technology. Prerequisites: 10-804-114 and 10-614-112.

10-614-155 Advanced Revit 2 credits

Students develop proficiency in skills introduced in Intro to Revit, including modeling, family creation, design options, importing, rendering, and exporting with the current version of Revit Architecture. Particular emphasis is placed on advanced modeling and family creation. This class also introduces new concepts related to creating and managing 3D BIM models including defining site topography and site-related features, massing, phasing, file linking, and worksharing. Competence will be demonstrated through performance on the CAD station, through saved projects, and through submitted printouts that will include both construction documents and rendered images. For one project, students will be working within a group and submitting a joint project, during which students will develop the essential worksharing skills required to complete large-scale building projects that require multiple drafters. Prerequisites: 10-614-111, 10-614-113 and 10-614-115.

10-614-178 Mechanics/Strength of Materials 4 credits

Study of forces that act on a structural member. These forces affect all types of structures including parts of machines. This course will emphasize the use of statics as it applies to building structures. Students will look at types of force systems, vectors, resultant forces, moments, truss analysis and reactions. Strength of Materials provides the various analytical tools necessary for the sizing of specific structural members based on the loading conditions and strength of the material. The student will gain the knowledge necessary to calculate the sizes of members made of specific materials including wood, steel and masonry. Prerequisite: 10-804-116 and completion of or concurrent enrollment in 10-806-154.

10-614-193 Job Orientation 1 credit

Occupational information prepares students to seek employment. Includes resume preparation, job interviews, portfolio design, and letters of introduction and recommendation. Former graduates are invited to discuss needs of students before employment. Representatives of labor, management, business and the professions are invited to discuss points of interest toward becoming an employee. Prerequisite: third-semester standing.

10-614-194 Portfolio Preparation for Arch 1 credit

Techniques and conventions of developing an architectural portfolio will be addressed as students generate personal portfolios for use in seeking employment. Emphasis is on developing professional documentation of work accomplished in school and related activities, both in hard copy and electronic format. Former graduates are invited to discuss current trends in hiring and what makes a portfolio stand out. Each student will display their portfolio in the annual Architectural Technology Portfolio Show to take place each Spring. Must be taken in final semester of program.

Career Potential:

- Architectural Technician
- Building Sales Person
- Building Mechanical Technician
- CAD Manager
- Shop Drawing Draftsperson
- Structural Draftsperson

With additional education and/or work experience, graduates may find employment as:

- Architect
- Building Inspector
- Chief Draftsperson
- Commercial or Industrial Estimator
- Construction Engineer
- Structural Engineer

Additional Related Courses

- 10-614-100 Introduction to Architecture
- 10-614-101 Architectural Theory 1
- 10-614-10 Architectural History
- 10-614-150 Construction Document & Services

More detailed and updated information on this program may be available at: madisoncollege.edu. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

Madison Area Technical College provides equal opportunity in education and employment.

Associate Degree Nursing

Program Number: 10-543-1

Associate in Applied Science Degree

Nursing Program Cluster

School of Health Education

Program offered at Madison and Reedsburg Campuses;
 Watertown Campus (first year of program);
 Fort Atkinson Campus (second year of program)

For information call:
(608) 246-6065 or (800) 322-6282 Ext. 6065

About the Program

Accredited by the Accreditation Commission for Education in Nursing <http://acenursing.org>, 3343 Peachtree Road NE Suite 850, Atlanta GA 30326, (404) 975-5000, and approved by the Wisconsin Department of Safety and Professional Services (dps.wi.gov), and licensed by the Board of Nursing, this program prepares practitioners to function with judgment and technical competence while providing nursing care to patients of all ages. Upon completion, students are eligible to write the national exam for licensure as a registered nurse. Emphasis is on critical thinking, self-direction and independence. Helpful aptitudes and interests include respect for uniqueness of individuals; a willingness to follow procedures carefully, understanding that errors may have serious consequences; and an ability to work and communicate with others, to be precise and exact work under pressure, and react quickly in an emergency.

Admission Requirements

To review program admission program requirements and application processing dates visit the programs website at: <http://madisoncollege.edu/program-info/associate-degree-nursing-mn>.

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

Pre-Nursing Courses:		Credits	Hrs/week Lec-Lab
30-543-300	Nursing Assistant*	3	2-1
10-801-195	Written Communication* OR	3	3-0
20-801-201	English 1*	(3)	(3-0)
10-801-198	Speech* OR	3	3-0
10-801-196	Oral/Interpersonal Communications* OR	(3)	(3-0)
20-810-201	Fundamentals of Speech* OR	(3)	(3-0)
20-810-205	Small Group & Interpersonal Communication*	(3)	(3-0)
(Note: Speech only, English 2 will no longer suffice.)			
20-806-207	Anatomy and Physiology 1*	4	3-2
20-806-208	Anatomy and Physiology 2*	4	3-2
20-806-273	Microbiology* OR	5	3-4
20-806-274	General Microbiology*	(5)	(3-4)
(check with your next school about transfer requirements)			
20-809-203	Intro to Sociology* OR	3	3-0
10-809-197	Contemporary American Society*	(3)	(3-0)
20-809-231	Intro to Psychology*	3	3-0
20-809-233	Developmental Psychology*	3	3-0
	<u>Elective***</u>	<u>5</u>	
	Total	35	

First Semester		Credits	Hours/week Lec-Lab
10-543-101	Nursing Fundamentals	2	2-0
10-543-102	Nursing Skills	3	0-6
10-543-103	Nursing Pharmacology	2	2-0
10-543-104	<u>Nursing: Intro to Clinical Practice</u>	<u>2</u>	<u>0-6</u>
	Semester Total	9	

Second Semester		Credits	Hours/week Lec-Lab
10-543-105	Nursing Health Alterations	3	3-0
10-543-106	Nursing Health Promotion	3	3-0
10-543-107	Nursing Clinical Care Across the Lifespan	2	0-6
10-543-108	<u>Nursing: Intro to Clinical Management</u>	<u>2</u>	<u>0-6</u>
	Semester Total	10	

Third Semester		Credits	Hours/week Lec-Lab
10-543-109	Nursing Complex Health Alterations 1	3	3-0
10-543-110	Nursing Mental Health Community Concepts	2	2-0
10-543-111	Nursing Intermediate Clinical Practice	3	0-9
10-543-112	<u>Nursing Advanced Skills</u>	<u>1</u>	<u>0-2</u>
	Semester Total	9	

Fourth Semester		Credits	Hours/week Lec-Lab
10-543-113	Nursing Complex Health Alterations 2	3	3-0
10-543-114	Nursing Management Concepts	2	2-0
10-543-115	Nursing Advanced Clinical Practice	3	0-9
10-543-116	<u>Nursing Clinical Transition</u>	<u>2</u>	<u>0-6</u>
	Semester Total	10	

*Students are required to complete all the listed general education requirements or in progress with the last class(es) prior to petitioning for entry into core Nursing courses. Priority for admission to the core nursing classes will be given to those candidates who have all pre nursing courses completed at the time of petitioning. TEAS testing and possible remediation are also required (more information regarding petitioning and TEAS testing can be found on the web site). Electives may be either 100 or 200 level courses. Students are encouraged to take college transfer courses (200-level courses) for educational advancement.

**Upon successful completion of first year courses, students are eligible to take LPN licensure exam.

*** One credit of electives may be satisfied with 1 credit from a 5-credit microbiology course.

Note: A copy of the Functional Abilities necessary to successfully complete the program of study is available on the web site.



Program Requirements

1) Physical health exam within three months prior to beginning the first nursing course, current TB skin test and completion of all CHASE (School of Health Education) required immunizations; 2) Physical and mental abilities essential to successfully complete the program are referred to as Functional Abilities. A copy of these functions are available on the web site; 3) Caregiver Background Checks (CBC). See the MATC Website for Health, Human and Protective Services Policy; and 4) Current "Health Care Professional" CPR certification.

Online Courses

All nursing theory courses are available online. Students who are enrolled in program courses may register for online courses. All program policies apply to online and face-to-face courses. Due to graduation verification and licensing paperwork, all fourth semester classes MUST be taken at Madison College. If for any reason Madison College does not offer a course online the AD nursing students who wishes to enroll in a non-district online course, must receive permission from the Madison College Associate Dean of Nursing to enroll in a non-district online courses offered outside the district.

Program Courses

10-543-101 Nursing Fundamentals 2 credits

This course focuses on basic nursing concepts that the beginning nurse will need to provide care to diverse patient populations. Current and historical issues impacting nursing will be explored within the scope of nursing practice. The nursing process will be introduced as a framework for organizing the care of patients with alterations in cognition, elimination, comfort, grief/loss, mobility, integument, and fluid/electrolyte balance.

10-543-102 Nursing Skills 3 credits

This course focuses on development of clinical skills and physical assessment across the lifespan. Content includes mathematic calculations and conversions related to clinical skills, blood pressure assessment, aseptic technique, wound care, oxygen administration, tracheostomy care, suctioning, management of enteral tubes, basic medication administration, glucose testing, enemas, ostomy care and catheterization. In addition the course includes techniques related to obtaining a health history and basic physical assessment skills using a body systems approach.

10-543-103 Nursing Pharmacology 2 credits

This course introduces the principles of pharmacology, including drug classifications and their effects on the body. Emphasis is on the use of the components of the nursing process when administering medications.

10-543-104 Nursing: Introduction to Clinical Practice 2 credits

This introductory clinical course emphasizes basic nursing skills and application of the nursing process in meeting the needs of diverse clients. Emphasis is placed on performing basic nursing skills, the formation of nurse-client relationships, communication, data collection, documentation and medication administration.

10-543-105 Nursing Health Alterations 3 credits

This course elaborates upon the basic concepts of health and illness as presented in Nursing Fundamentals. It applies theories of nursing in the care of clients through the lifespan, utilizing problem solving and critical thinking. This course will provide an opportunity to study conditions affecting different body systems and apply therapeutic nursing interventions. It will also introduce concepts of leadership, team building, and scope of practice.

10-543-106 Nursing Health Promotion 3 credits

This course will cover topics related to health promotion in the context of the family. We will cover nursing care of the developing family, which includes reproductive issues, pregnancy, labor and delivery, post-partum, the newborn and the child. Recognizing the spectrum of healthy families we will discern patterns associated with adaptive and maladaptive behaviors applying mental health principles. An emphasis is placed on teaching and supporting healthy lifestyles choices. Nutrition, exercise/stress management, empowerment and risk reduction practices are highlighted. Study of the family will cover dynamics, functions, discipline styles and stages of development.

10-543-107 Nursing Clinical Care Across the Lifespan 2 credits

This clinical experience applies nursing concepts and therapeutic interventions to clients across the lifespan. It also provides an introduction to concepts of teaching and learning. Extending care to include the family is emphasized.

10-543-108 Nursing: Introduction to Clinical Management 2 credits

This clinical experience applies nursing concepts and therapeutic nursing interventions to groups of clients. It also provides an introduction to leadership, management and team building.

10-543-109 Nursing Complex Health Alterations 1 3 credits

Complex Health Alterations 1 prepares the learner to expand knowledge from previous courses in caring for clients with alterations in musculoskeletal, cardiovascular, respiratory, endocrine and hematologic systems as well as clients with fluid/ electrolyte and acid-base imbalance, and alterations in comfort.

10-543-110 Nursing Mental Health Community Concepts 2 credits

This course will cover topics related to the delivery of community and mental health care. Specific health needs of individuals, families, and groups will be addressed. Attention will be given to diverse and at-risk populations. Mental health concepts will concentrate on adaptive/maladaptive behaviors and specific mental health disorders. Community resources will be examined in relation to specific types of support offered to racial, ethnic, economically diverse individuals and groups.

10-543-111 Nursing Intermediate Clinical Practice 3 credits

This intermediate level clinical course develops the RN role when working with clients with complex health care needs. A focus of the course is developing skills needed for managing multiple clients and priorities. Using the nursing process, students will gain experience in adapting nursing practice to meet the needs of clients with diverse needs and backgrounds.

10-543-112 Nursing Advanced Skills 1 credit

This course focuses on the development of advanced clinical skills. Content includes advanced IV skills, blood product administration, chest tube systems, basic EKG interpretation and nasogastric/feeding tube insertion.

10-543-113 Nursing Complex Health Alterations 2 3 credits

This course prepares the learner to expand knowledge and skills from previous courses in caring for clients with alterations in the immune, neuro-sensory, musculoskeletal, gastrointestinal, hepatobiliary, renal/urinary and the reproductive systems. The learner will also focus on management of care for clients with high risk perinatal conditions, high risk newborns and the ill child. Synthesis and application of previously learned concepts will be evident in the management of clients with critical/life threatening situations.

10-543-114 Nursing Management Concepts 2 credits

This advanced clinical course covers nursing management and professional issues related to the role of the RN emphasis is placed on preparing for the RN practice.

10-543-115 Nursing Advanced Clinical Practice 3 credits

This advanced clinical course requires the student to integrate concepts from all previous courses in the management of groups of clients facing complex health alterations. Students will have the opportunity to further develop critical thinking skills using the nursing process in making clinical decisions. Continuity of care through interdisciplinary collaboration is emphasized.

10-543-116 Nursing Clinical Transition 2 credits

This clinical experience integrates all knowledge learned in the previous course in transitioning to the role of the graduate nurse. The course promotes relatively independent clinical decisions, delegations, and works collaboratively with others to achieve client and organizational outcomes.

Career Potential:

- Registered Nurse (RN) Board Exam (NCLEX), graduates may work as registered nurses in a variety of healthcare settings including clinics, hospitals, extended-care facilities, doctor's offices, home health agencies and selected industrial and business settings.

With additional education graduates may:

- Attain a Bachelors of Science in Nursing Degree
- Attain a Master of Science in Nursing Degree

More detailed and updated information on this program may be available at: madisoncollege.edu. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

Madison Area Technical College provides equal opportunity in education and employment.

Rev: 02/15

Auto Collision Repair and Refinish Technician

Program Number: 31-405-1

One-Year Technical Diploma

Transportation Program Cluster

School of Applied Science, Engineering, and Technology

Program offered at Madison Campuses

For information call:
(608) 246-6800 or (800) 322-6282 Ext. 6800

About the Program

This one-year program provides students with the necessary skills for job entry into the metal finishing and painting areas of the auto body and light truck trade. Courses cover welding, panel replacement, metal forming, sheet metal alignment and finishing.

Admissions Requirements

To review admissions program requirements and application processing dates visit the programs website at: <http://madisoncollege.edu/program-info/auto-collision-repair-and-refinish-technician>.

Requirements for Graduation

Students must meet two 2.0 GPA requirements to graduate:
 (1) GPA for entire program must be 2.0 or above;
 (2) GPA of combined occupational courses (405) must be 2.0 or above.

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

FIRST YEAR		Hrs/week	
First Semester		Credits	Lec-Lab
32-405-301	Basic Sheet Metal Repair & Welding Fund.....	5.....	0-10
32-405-302	Refinishing 1.....	5.....	0-10
32-405-341	Collision Mechanical Systems.....	2.....	2-2
32-405-361	Collision Repair/Refinishing Theory 1.....	3.....	5-0
10-104-189	Customer Relations.....	2.....	2-0
Semester Total		17	
Second Semester			
32-405-303	Non-Structural Panel Repair & Glass Servicing.....	5.....	0-10
32-405-304	Refinishing 2/Trim & Hardware.....	5.....	0-10
32-405-340	Collision Electrical Fundamentals.....	2.....	2-2
32-405-363	Collision Repair/Refinishing Theory 2.....	3.....	5-0
31-804-379	Vocational Mathematics 1.....	1.....	2-0

Note: Students are placed in English or mathematics courses based on their scores on the COMPASS or ASSET test or on completion of the appropriate prerequisite/s.



Program Courses

32-405-301 Basic Sheet Metal Repair & Welding Fundamentals 5 credits

Course material covers the introduction in the use of an oxyacetylene welding/cutting outfit as related to collision repairs. A heavy emphasis is placed on the mig welding process, types of welds and techniques use of hammer and dolly, pry tools, stud guns, air and electrical tools, hydraulic-porto-power jacks and other straightening tools, used in the processes of metal finishing and plastic filling. Co-requisites: first semester core courses must be taken together (32-405-301, 32-405-302; 32-405-361).

32-405-302 Refinishing 1 5 credits

The refinishing phase includes instruction in the proper use and maintenance of the spray gun, refinishing panels and fenders, spot repairing of panels and fenders, and mixing of paint formulas. Application of primers, sealers, single stage, and base coat/clear coat are covered. Instruction in shop, tool and paint safety, and state and federal environmental concerns are presented. Co-requisites: first semester core courses must be taken together (32-405-301, 32-405-302; 32-405-361).

32-405-303 Non-Structural Panel Repair & Glass Servicing 5 credits

Further development of straightening skills and sheet metal alignment is achieved by performing these activities on automobiles. Such operations as straightening damages sheet metal on fixed parts and removable panels are performed. Instruction on the replacement of fixed glass such as windshields, rear window, and side glass is covered using industry standards. Further instruction includes the components and procedures involved in the removal and installation of movable glass. Students must be admitted to Auto Collision program. Pre-requisites: First semester core courses. Co-requisites: second semester core courses must be taken together (32-405-303; 32-405-304; 32-405-340; 32-405-341; and 32-405-363).

32-405-304 Refinishing 2/Trim & Hardware 5 credits

The refinishing phase includes further instruction in the proper use of the spray gun, performing partial and complete refinishing repairs on vehicles. Procedures for blending and tinting of the paint to achieve an acceptable color match are practices. Shop and paint safety practices are emphasized. Instruction on the safe removal and installation of trim and hardware is covered along with specialty tools necessary to perform operations using industry accepted procedures. Prerequisites: first semester core courses; Co-requisites: second semester core courses must be taken together (32-405-303; 32-405-304; 32-405-340; 32-405-341; and 32-405-363).

32-405-340 Electrical Fundamentals for Automotive Collision Repair 2 credits

This course is an introduction to automotive electrical systems, including basic electricity, trouble shooting and repair of common electrical circuits, wiring diagrams, soldering, power accessories and restraint systems. Standards for safety when working with electrical systems are emphasized. Pre-requisites: First semester core courses. Co-requisites: second semester core courses must be taken together (32-405-303; 32-405-304; 32-405-340; 32-405-341; and 32-405-363).

32-405-341 Collision Mechanical Systems 2 credits

This course covers basic operations and servicing principles of brake systems, fuel and exhaust systems, heating and cooling systems, suspension and steering systems and automotive air conditioning principles including components that make up an A/C system. Regulations regarding discharging/recharging and troubleshooting as related to collision repair are also included. Safety practices regarding mechanical systems are covered. Pre-requisites: First semester core courses. Co-requisites: second semester core courses must be taken together (32-405-303; 32-405-304; 32-405-340; 32-405-341; and 32-405-363).

32-405-361 Collision Repair/Refinishing Theory 1 3 credits

Covers related information on all phases of auto body welding and metal straightening with hand tools. Collision damage analysis of sheet metal and unibodies is studied. Different types of sheet metal, such as HSS and HSLA, as well as the properties of sheet metal are discussed. Where and how to use plastic filler is presented. Paint equipment such as the operation and maintenance of the spray gun is studied. Extensive discussion takes place on refinish products, surface preparation, sanding and polishing, thinners and reducers and top coat application. Instruction in shop, tool, paint safety, and state and federal environmental concerns and regulations are presented. Co-requisites: first semester core courses must be taken together (32-405-301, 32-405-302, 32-405-361).

32-405-363 Collision Repair/Refinishing Theory 2 2 credits

To further promote knowledge of repair skills related to auto collision repair and refinishing, the following discussion areas are included: the evaluation of automobile bodies and damage repair techniques, unibody construction and repair techniques, vehicle preparation, metal correction and parts replacement. Additional instruction includes glass installation, electrical accessories, door and window servicing and trim replacement. Pre-requisites: First semester core courses. Co-requisites: second semester core courses must be taken together (32-405-303; 32-405-304; 32-405-340; 32-405-341; and 32-405-363).

Career Potential:

- Auto Body Technician
- Painting Technician
- Frame and Alignment Technician
- Trim and Glass Installer

With additional education and/or work experience, graduates may find employment as:

- Unibody Repair Specialist
- Manager/Shop Owner
- Insurance Adjuster and Appraiser
- Equipment and Supplies Specialist
- Frame and Alignment Specialist

More detailed and updated information on this program may be available at: madisoncollege.edu. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

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Rev. 04/15

Auto Collision Repair and Refinishing Technician

Program Number: 32-405-1

Two-Year Technical Diploma

Transportation Program Cluster

School of Applied Science, Engineering, and Technology

Program offered at Madison Campuses

For information call:

(608) 246-6800 or (800) 322-6282 Ext. 6800

About the Program

The two-year Auto Collision Repair and Refinishing Technology Program is designed to provide students with skills necessary to enter or advance in the collision-repair industry. Training includes structural damage alignment, repairing and replacing sheet metal panels, welding, plastic repair and refinishing vehicles to original color match with emphasis on paint mixing, tinting and blending. Considerable time is spent developing hands-on skills that are used on the job. Skills learned in this program are also valuable to individuals choosing to enter professions other than auto collision repair and refinishing.

Admissions Requirements

To review admissions program requirements and application processing dates visit the programs website at: <http://madisoncollege.edu/program-info/auto-collision-repair-refinishing-technician>.

Requirements for Graduation

Students must meet two 2.0 GPA requirements to graduate: 1) GPA for entire program must be 2.0 or above; 2) GPA of combined occupational courses (405) must be 2.0 or above.

Program Courses

32-405-301 Basic Sheet Metal Repair & Welding Fundamentals 5 credits

Course material covers the introduction in the use of an oxyacetylene welding/cutting outfit as related to collision repairs. A heavy emphasis is placed on the MIG welding process, types of welds and techniques use of hammer and dolly, pry tools, stud guns, air and electrical tools, hydraulic-porto-power jacks and other straightening tools, used in the processes of metal finishing and plastic filling. Co-requisites: First semester core courses must be taken together: 32-405-301, 32-405-302, and 32-405-361.

32-405-302 Refinishing 1 5 credits

The refinishing phase includes instruction in the proper use and maintenance of the spray gun, refinishing panels and fenders, spot repairing of panels and fenders, and mixing of paint formulas. Application of primers, sealers, single stage, and coat/clear coat are covered. Instruction in shop, tool and paint safety, and state and federal environmental concerns are presented. Co-requisites: First semester core courses must be taken together: 32-405-301, 32-405-302, and 32-405-361.

32-405-303 Non-Structural Panel Repair & Glass Servicing 5 credits

Further development of straightening skills and sheet metal alignment is achieved by performing these activities on automobiles. Such operations as straightening damages sheet metal on fixed parts and removable panels are performed. Instruction on the replacement of fixed glass such as windshields, rear window, and side glass is covered using industry standards. Further instruction includes the components and procedures involved in the removal and installation of movable glass. Pre-requisites: 1st semester core courses. Co-requisites: 2nd semester core courses must be taken together (32-405-303, 32-405-304, 32-405-340, 32-405-341, and 32-405-363).

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

FIRST YEAR

First Semester		Credits	Hrs/week Lec-Lab
32-405-301	Basic Sheet Metal Repair & Welding Fund	5	0-10
32-405-302	Refinishing 1	5	0-10
32-405-361	Collision Repair/Refinishing Theory 1	3	5-0
32-405-341	Collision Mechanical Systems.....	2	2-2
10-104-189	Customer Relations	2	2-0
Semester Total		17	

Second Semester

32-405-303	Non-Structural Panel Repair & Glass Servicing.....	5	0-10
32-405-304	Refinishing 2/Trim & Hardware	5	0-10
32-405-340	Collision Electrical Fundamentals	2	2-2
31-804-379	Vocational Mathematics 1	1	2-0
32-405-363	Collision Repair/Refinishing Theory 2	3	5-0
Semester Total		16	

SECOND YEAR

First Semester

32-405-305	Auto Refinishing/Color Adjustment.....	5	0-10
32-405-306	Collision Structural Welding & Panel Replacement ..	5	0-10
32-405-311	Intro to Airbrushing and Custom Painting	2	1-3
32-405-365	Collision Repair and Refinishing Theory 3	3	5-0
31-806-363	Science 1	2	2-2
Semester Total		17	

Second Semester

32-405-307	Advanced Collision Structural Repair.....	5	0-10
32-405-308	Collision Plastics/Composites & Adv Refinish Apps .	5	0-10
32-405-321	Advanced Airbrushing and Custom Painting.....	2	1-3
32-405-334	Collision Damage Analysis and Report Writing.....	3	5-0
31-405-374	Collision Repair Occupational Orientation	2	4-0
Semester Total		17	

Notes:

- Requirements for second-year students: the following courses must be completed prior to entering the second year of the program: 32-405-301, 32-405-302, 32-405-303, 32-405-304, 32-405-340, 32-405-341, 32-405-361 and 32-405-363.
- Third semester students must purchase an approved auto body tool set before third-semester classes begin.

Note: Students are placed in English or mathematics courses based on their scores on the COMPASS or ASSET test or on completion of the appropriate prerequisite/s.



Program courses (continued)

32-405-304 Refinishing 2/Trim & Hardware 5 credits

The refinishing phase includes further instruction in the proper use of the spray gun, performing partial and complete refinishing repairs on vehicles. Procedures for blending and tinting of the paint to achieve an acceptable color match are practices. Shop and paint safety practices are emphasized. Instruction on the safe removal and installation of trim and hardware is covered along with specialty tools necessary to perform operations using industry accepted procedures. Prerequisites: First semester core courses. Co-requisites: Second semester core courses must be taken together (32-405-303; 32-405-304, 32-405-340, 32-405-341, and 32-405-363).

32-405-305 Auto Refinishing/Color Adjustment 5 credits

Vehicle refinishing techniques including preparing adjacent panels for blending, basecoat and clear coat blending, color adjustment and testing color match. Complete refinishing and panel blending is performed on repaired vehicles. Prerequisites: All first year courses. Co-requisites: Third semester core must be taken together (32-405-305, 32-405-306, and 32-405-365).

32-405-306 Collision Structural Welding & Panel Replacement 5 credits

Structural damage analysis, measuring vehicle dimensions, pulling and straightening vehicle structures. Replacement and alignment of non-structural panels will be performed on vehicles. Collision structural section joints will be constructed and welded (GMAW). Prerequisites: All first year courses. Co-requisites: Third semester core must be taken together (32-405-305, 32-405-306, and 32-405-365).

32-405-307 Advanced Collision Structural Repair 5 credits

Application of replacement procedures for structural panels such as front and rear rails, rocker panels, A- pillars, B-pillars, and floor pans. Servicing and removal of drive train, suspension steering and other related components utilizing industry accepted procedures. Understanding suspension and wheel alignment angles and diagnostic procedures. Prerequisites: 1st-3rd semester core courses. Co-requisites: Fourth semester core must be taken together (32-405-307, 32-405-308, 32-405-334, and 32-405-374).

32-405-308 Collision Plastics/Composites & Adv Refinishing Applications 5 credits

Identification of automotive plastics, repair decisions, using adhesives and welding to repair plastics. Refinishing techniques include refinishing plastic, multi-stage finishing, and advances blending techniques and custom painting options. Prerequisites: 1st-3rd semester core courses. Co-requisites: Fourth semester core must be taken together (32-405-307, 32-405-308, 32-405-334, 32-405-374).

32-405-311 Intro to Airbrushing and Custom Painting 2 credits

This course is for the student who has little or no airbrush experience and to teach the student to disassemble, clean and set-up his or her own airbrush. Provides instruction in paint mixture and how different reducers affect the end result (cleanliness, etc.) This course also demonstrates practice drills and proper techniques for brush strokes towards building control and skill.

32-405-321 Advanced Airbrushing and Custom Painting 2 credits

Go in-depth in paint mixture, practice drills and proper techniques for airbrush strokes towards building control and skill. Includes types and methods of stencil use, from hand taping to computer cut materials, as well as overviews of commonly found "hand held" barriers and masks that provide some simple background and fill techniques. We cover "stacking" or use of multiple piece stencils to create popular graphics. Techniques in aging or patina with airbrush. Explore color variation using known theory and methods to build eye pleasing color schemes. Hand Stripping: learn the proper set-up for paint mixture and brush shaping which is vital to the art of fine lining, outlining graphics or lettering. An overview of "gold leafing" and other special effects are presented. Prerequisite: 32-405-311.

32-405-334 Collision Damage Analysis and Report Writing 3 credits

This course includes damage analysis, vehicle identification, estimate writing sequence, use of estimation guide for parts and labor costs, and writing damage reports manually and with a computer. Each student has the opportunity to estimate damaged vehicles. Prerequisites: 1st-3rd semester core courses. Co-requisites: Fourth semester core must be taken together (32-405-307, 32-405-308, 32-405-334, and 32-405-374).

32-405-340 Collision Electrical Fundamentals 2 credits

This course is an introduction to automotive electrical systems, including basic electricity, trouble shooting and repair of common electrical circuits, wiring diagrams, soldering, power accessories and restraint systems. Standards for safety when working with electrical systems is emphasized. Prerequisites: First semester core courses. Co-requisites: Second semester core courses must be taken together (32-405-303, 32-405-304, 32-405-340, 32-405-341, and 32-405-363).

32-405-341 Collision Mechanical Systems 2 credits

This course covers basic operations and servicing principles of brake systems, fuel and exhaust systems, heating and cooling systems, suspension and steering systems and automotive air conditioning principles including components that make up an A/C system. Regulations regarding discharging/recharging and trouble shooting as related to collision repair is also included. Safety practices regarding mechanical systems are covered. Prerequisites: First semester core courses. Co-requisites: Second semester core courses must be taken together (32-405-303, 32-405-304, 32-405-340, 32-405-341, and 32-405-363).

32-405-361 Collision Repair/Refinishing Theory 1 3 credits

Covers related information on all phases of auto body welding and metal straightening with hand tools and hydraulic equipment. Collision damage analysis of sheet metal and unibodies is studied. Different types of sheet metal, such as HSS and HSLA, as well as the properties of sheet metal are discussed. Where and how to use plastic filler is presented. Paint equipment such as the operation and maintenance of the spray gun is studied. Extensive discussion takes place on refinish products, surface preparation, sanding and polishing, thinners and reducers and top coat application. Instruction in shop, tool, paint safety, and state and federal environmental concerns and regulations are presented. Co-requisites: First semester core courses must be taken together: 32-405-301, 32-405-302, and 32-405-361.

32-405-363 Collision Repair/Refinishing Theory 2 3 credits

To further promote knowledge of repair skills related to auto collision repair and refinishing, the following discussion areas are included: the evaluation of automobile bodies and damage repair techniques, unibody construction and repair techniques, vehicle preparation, metal correction and parts replacement. Additional instruction includes glass installation, electrical accessories, door and window servicing and trim replacement. Prerequisites: First semester core courses. Co-requisites: Second semester core courses must be taken together (32-405-303, 32-405-304, 32-405-340, 32-405-341, and 32-405-363).

32-405-365 Collision Repair/Refinishing Theory 3 3 credits

Introduces the computer electronic system for repair of unibody vehicles, and proper anchoring and pulling procedures. Instruction on removing and replacing drive train components is included. The proper care and protection of on-board computers in autos is stressed. Sheet metal alignment, and frame and unibody straightening, along with procedures for restoring severely damaged vehicles are studied. Prerequisites: All first year courses. Co-requisites: Third semester core must be taken together (32-405-305, 32-405-306, 32-405-365).

31-405-374 Collision Repair Occupational Orientation 2 credits

A study of the operation of all departments of a collision repair center. Special attention is given to the business operations of paper flow, job costing, budget preparation, insurance and AG 132 law. The students receive specific occupational information which enables them to effectively seek employment in the collision repair industry. Personal data sheet, job interviewing techniques, letters of application, seeking references and writing resumes are covered. In addition, personal concerns such as finances, time management, first impressions and evaluating strengths and weaknesses are discussed. Prerequisites: 1st-3rd semester core courses. Co-requisites: Fourth semester core must be taken together (32-405-307, 32-405-308, 32-405-334, and 32-405-374).

Career Potential:

- Auto Body Technician
- Frame and Alignment Specialist
- Unibody Repair Specialist
- Painting Technician

With additional education and/or work experience, graduates may find employment as:

- Insurance Adjuster and Appraiser
- Equipment and Supplies Specialist
- Foreman/Manager/Shop Owner

More detailed and updated information on this program may be available at: madisoncollege.edu. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

Madison Area Technical College provides equal opportunity in education and employment.

Automated Manufacturing Systems Technology

Program Number: 10-628-3

Associate in Applied Science Degree

Manufacturing Program Cluster

School of Applied Science, Engineering, and Technology

Program offered at Madison Campuses

For information call:

(608) 246-6800 or (800) 322-6282 Ext. 6800

About the Program

The two-year Associate Degree Automated Manufacturing Systems Technology Program provides students with the knowledge and skills to use computer-driven control systems and mechanisms. This program emphasizes programming, design, updating, servicing, and operation of automated equipment and robotics systems. The specialist is involved with many stages and aspects of an automation system.

Admissions Requirements

To review admissions program requirements and application processing dates visit the programs website at: <http://madisoncollege.edu/program-info/automated-manufacturing-systems-technology>.

Unique Requirements for Graduation

Please note: A minimum grade of C is required for all technical studies courses in order to graduate.

Program Courses

10-103-186 MS Project 2 credits
Use project management software to plan a project, create a project schedule, complete. Working competency in Windows presumed.

10-414-100 DC/AC Circuits for Industry 3 credits
Study of practical DC concepts with and introduction to AC concepts. Course topics include electrical quantities and components and measurement instruments with an emphasis on DC circuits. Students analyze and construct circuits and measure voltage, current, resistance and power for both AC and DC sources. Studies principles of electricity AC components and circuits. Coverage includes combination circuits that contain Resistive Inductive and/or Capacitive properties. Emphasis on circuit troubleshooting and efficiencies. Course introduces theory and application of three-phase circuits, single phase, transformers, generators, and motors. Covers fundamentals of NEC wiring, soldering and relay ladder logic.

10-414-201 Electricity & Controls for Industry 4 credits
Studies basic principles of physics specific to electro-mechanical systems. Studies motors, transformers and various electro-mechanical devices to enhance AC power distribution and control topics. Introduces programmable logic controllers in the on/off mode. Studies basic principles related to electro-mechanical systems as well as motors, transformers, frequency drives and various electro-mechanical devices to enhance AC power distribution and control systems. Introduces programmable logic controllers in the on/off mode.



Curriculum

The courses listed below outline the requirements for graduation for students entering this program in the 2015-2016 academic year. Requirements for graduation may vary depending on the semester in which a student is admitted to their program. Current/continuing students should consult their Academic Requirements report available through student center account for specific graduation requirements. Program requirements are subject to change.

FIRST YEAR		Credits	Hrs/week
First Semester			Lec-Lab
10-414-100	DC/AC Circuits for Industry	3	0.5-5
10-414-201	Electricity & Controls for Industry	4	0.5-7
10-623-300	Fluid Power 1 for Industry	1	0-2
10-623-301	Fluid Power 2 for Industry	2	0-4
10-623-310	Mechanisms for Industry	1	0-2
10-628-420	Introduction to Logic & Circuits	1	0-2
10-801-195	Written Communication	3	3-0
10-804-107	College Math.....	3	3-0
Semester Total		18	

Second Semester		Credits	Hrs/week
10-103-186	MS Project	2	0.5-3
10-420-126	Manufacturing Materials	2	1-2
10-623-100	Safety for Industry.....	1	0-2
10-628-170	Robotics for Industrial Automation 1	1	0-1
10-623-200	Interpreting Engineering Drawings	2	0-4
10-628-302	Fluid Power 3 for Industry	2	0-4
10-628-401	PLCs for Industrial Automation 1	1	0.5-1
10-628-402	PLCs for Industrial Automation 2	1	0.5-1
10-628-408	Computer-Assisted Design-2D.....	2	0.5-1.5
10-809-195	Economics.....	3	3-0
Semester Total		17	

SECOND YEAR		Credits	Hrs/week
First Semester			
10-628-168	Robotics for Industrial Automation 2	2	0.5-1.5
10-628-403	Programmable Automation Controller 1.....	2	1-2
10-628-409	Computer-Assisted Design-3D.....	2	0.5-1.5
10-628-450	Integration of Mechanisms and Controls 1	4	0-8
10-801-197	Technical Reporting.....	3	3-0
10-809-199	Psychology of Human Relations	3	3-0
Semester Total		16	

Second Semester		Credits	Hrs/week
10-628-172	Vision for Robotics in Industrial Automation	2	0-2
10-628-404	Programmable Automation Controller 2.....	2	1-2
10-628-451	Integration of Mechanisms and Controls 2	4	0.5-7
10-628-500	Introduction to HMI and SCADA Development.....	2	0-4
10-809-166	Intro to Ethics: Theory and Applications	3	3-0
10-809-197	Contemporary American Society	3	3-0
Semester Total		16	

Note: Students are placed in English or mathematics courses based on their scores on the COMPASS or ASSET test or on completion of the appropriate prerequisite/s.

Career Potential:

- Automation Technician
- Robotics Technician
- Robotic Programmer
- Electro-Mechanical Tech
- Field Service Technician
- Automated Manufacturing Systems Analyst
- Computer Integrated Manufacturing Technician

Real world smart

Program Courses, continued

10-420-126 Manufacturing Materials 2 credits

Instructional units include safety, oxy-acetylene welding, brazing and cutting, shielded metal arc welding, gas metal arc welding, gas tungsten arc welding, flux cored arc welding, plasma arc cutting and conventional machining.

10-623-100 Safety for Industry 1 credit

Comprehensive safety program designed for anyone involved in general industry. Specifically devised for safety directors, foremen, and field supervisors; the program provides complete information on OSHA compliance issues.

10-623-200 Interpreting Engineering Drawings 2 credits

Basic principles of engineering drawings and manufacturing procedures. Through interpretation and sketching, students learn to visualize the part, section or assembly. Uses drawings pertinent to the trades with examples in Welding, Facilities, Piping and Instrumentation (P & ID's), Sheet Metal, Equipment Manuals (technical documents, installation/repair manuals), Electrical Symbols, and Fluid Power Symbols.

10-623-300 Fluid Power 1 for Industry 1 credit

Fundamentals of fluid power (hydraulic and pneumatic) and is intended to gain an understanding of components and terminology as well as principles and functions. This course has a heavy emphasis on recognizing hydraulic and pneumatic symbols and circuits.

10-623-301 Fluid Power 2 for Industry 2 credits

Intended to develop an understanding of basic Fluid Power Circuits. Covers the application of basic fluid power systems to various machines along with maintenance and troubleshooting. The maintaining and design considerations of both hydraulic and pneumatic systems will be explored in this course with an emphasis on component selection and circuit efficiencies.

10-623-310 Mechanisms for Industry 1 credit

Emphasizes measurement, lubrication, energy, power, machines and fluid and chemical properties, as well as installation, timing and synchronization of machine drive components. Includes hands-on disassembly and assembly of industrial components.

10-628-168 Robotics for Industrial Automation 2 2 credits

FANUC Robotics based advanced study of applications, operation, programming and troubleshooting of Industrial Robots. Prepares the learner to establish and modify robot axis soft limits; navigate the teach pendant to set up the robot for automatic operation; define the Frames of reference used by the coordinate system; create multiple Tool Frames; create a program file; write a functional motion instruction; edit, copy and delete an existing program; demonstrate the use of a wait statement; demonstrate the use of a Call statement; demonstrate the use of an Output statement; and upload and download program memory files. Backup and restore the Controller image. Prerequisite: 10628170.

10-628-170 Robotics for Industrial Automation 1 1 credit

FANUC Robotics based introductory study of applications, operation, programming and troubleshooting of Industrial Robots. Prepares the learner to identify the component parts of a robot; describe teach pendant and robot functions; power up the robot control in proper sequence; jog in Joint and Cartesian movement; identify axis movements; navigate the teach pendant to set up the robot for desired movement; demonstrate working knowledge of arm speed and inching control; select the Frames of reference used by the coordinate system; edit an existing program.

10-628-172 Vision for Robotics in Industrial Automation 2 credits

This course prepares the learner to program a vision system as a stand-alone solution and integrate into robotic systems. The student will receive instruction on general vision concepts, including camera setup, lighting, lensing, 2D Single & 2D Multiple View Process and perform hands-on programming with industrial vision systems.

10-628-302 Fluid Power 3 for Industry 2 credits

The use of electro-pneumatic components recognizing and drawing electro-pneumatic symbols and representation of motion sequences and operating status drawing of pneumatic and electrical circuit diagrams. Logical AND/OR function of switch-on signals time-dependent controls with the time delay relay troubleshooting in simple electro-pneumatic controls. Prerequisite: 10-623-301.

10-628-401 PLCs for Industrial Automation 1 1 credit

Introductory study of PLC Programming overview (parts, principles of operation, size and applications), PLC components (I/O modules, specifications, CPU, memory, programming options), Number systems and codes (binary, decimal, hexadecimal, BCD, ASCII, binary arithmetic), Fundamentals of Logic (binary concept, AND, OR, NOT functions, Boolean algebra, logic gates, word level instructions), Basics of programming in RSLogix500 (memory organization, program scan, programming languages, instruction addressing, XIC, XIO, OTE instructions, creating ladder logic), PLC installation practices, editing, and troubleshooting (enclosures, electrical noise, grounding, voltages, program editing, program monitoring, preventive maintenance, troubleshooting, connecting to your PLC to your PC).

10-628-402 PLCs for Industrial Automation 2 1 credit

Intermediate knowledge of programmable logic controller (PLC) installation, interfacing, operation, and programming in RSLogix500. Timer instructions (ON-delay, OFF-delay, RTO, cascading timers), Counter instructions (Counter-up, Counter-down, cascading counters, combining counter and timer functions), Data manipulation (Math instructions), Program control instructions (MCR, jump, subroutines, forcing, safety circuit, temporary end, fault routine), computer controlled machines and processes (communication fundamentals) RSLinx communications, Introduction to RSLogix5000 and ControlLogix programming). Prerequisite: 10-628-401.

10-628-403 Programmable Automation Controller 1 2 credits

Advanced programmable logic controller (PLC) installation, interfacing, operation, and programming (RSLogix5000). Students learn how to connect advanced PLCs in a typical industrial PLC network utilizing Ethernet, ControlNet, DeviceNet, RS232 and RIO communication paths. Data sharing and distributed PLC programming techniques along with fundamentals of touch panel programming, VFD integration and operation are studied. Prerequisite: 10-628-402.

10-628-404 Programmable Automation Controller 2 2 credits

Advanced programmable logic controller (PLC) programming (RSLogix5000). Students learn how to connect advanced PLCs in a typical industrial network, integrating touch panel programming, VFD and Servo motion control. Programming PLCs utilizing Function Block Diagram are studied. Students gain an understanding of SCADA and MES system and P&ID loops. Prerequisite: 10-628-403

10-628-408 Computer-Assisted Design-2D 2 credits

Learn to visualize, sketch and create 2D drawings in a wide variety of disciplines using AutoCad. The course will introduce the creation and revision drawings pertinent to the trades with examples in Welding, Facilities, Piping and Instrumentation (P & ID's), Sheet Metal, Equipment Manuals (technical documents, installation/repair manuals), Electrical, and Fluid Power Facilities and Mechanical Drawings. Prerequisite: 10-623-200.

10-628-409 Computer-Assisted Design-3D 2 credits

Introductory study of working with simple 3D sketches and partly, creation. Strong emphasis on working with existing assemblies, and understanding component relationships. Students will work with OEM component 3D models and manipulating them into assemblies. Students will gain an understanding of drawing sets, and bill of materials.

10-628-420 Introduction to Logic & Circuits 1 credit

The learner is introduced to basic troubleshooting tools, tips and techniques and will be interpreting electrical schematics, Boolean logic, truth tables, and number systems. The course uses software simulations and labs to introduce relays and relay ladder logic, and students apply common troubleshooting techniques for technicians.

10-628-450 Integration of Mechanisms And Controls 1 4 credits

The student will apply the concepts of robots and automation by building a small automation system. This automation cell will be accomplished within the framework of an assigned team of students. Student will apply learned concepts studied in previous classes. These concepts will assist in building, testing, and running their automated work cell. Student will develop, and apply project planning, time management and cooperative methods with their team members to build their work cell. Student will learn how to design and make parts for this project. Student also will specify and purchase parts as well as, analyze system malfunctions, which may occur to the modular level. Student will practice the skills needed to interface and make repairs. Prerequisites: 10-414-201, 10-420-126, 10-628-170, 10-628-402, 10-628-420. Co-requisites: 10-628-172, 10-623-400, 10-628-302, and 10-628-403.

10-628-451 Integration of Mechanisms And Controls 2 4 credits

Focuses on integration of a complete manufacturing cell. Typical components include programmable controllers, robot, sensors, drives, conveyors, pneumatics, hard automation, control wiring and vision. Students plan, wire, program, troubleshoot and develop documentation for the whole system. Prerequisites: 10-623-401, 10-628-500, 10-620-172, and 10-628-404.

10-628-500 Introduction to HMI and SCADA Development 2 credits

This class is designed to give students the knowledge necessary to troubleshoot and maintain a SCADA (supervisory control and data acquisition) system. This includes control strategies, controllers and IO, as well as system software database connections and HMIs. Prerequisite: 10-628-403.

More detailed and updated information on this program may be available at: madisoncollege.edu. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

Madison Area Technical College provides equal opportunity in education and employment.

Rev. 07/15

Automotive Technician

Program Number: 32-404-2

Two-Year Technical Diploma

Transportation Program Cluster

School of Applied Science, Engineering, and Technology

Program offered at Madison Campuses

For information call:

(608) 246-6800 or (800) 322-6282 Ext. 6800

About the Program

Employment opportunities for qualified trained technicians continue to increase. This program is designed to provide students with skills necessary to enter or advance in many automotive industry positions. The technology, diagnosis and repair of automotive and light truck electrical, mechanical and hydraulic systems are studied. Considerable time is spent developing hands-on skills that are used on the job. Skills learned in the program are valuable to individuals choosing to enter professions other than automotive technician.

Admissions Requirements

To review admissions program requirements and application processing dates, visit the program's website at: <http://madisoncollege.edu/program-info/automotive-technician>.

Note: Mandatory attendance for the automotive orientation is required prior to starting the program.

Requirements for Graduation

Students must meet two 2.0 GPA requirements to graduate. (1) GPA for entire program must be 2.0 or above; (2) GPA of combined occupational courses (404) must be 2.0 or above.

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

		Credits	Hrs/week Lec-Lab
First Semester			
10-602-125	Electrical and Electronics Systems 1*	2	2-0
10-602-127	Electrical and Electronics Systems 2**	2	1-2
32-404-335	Powertrain Management Systems**	5	7-11
32-404-340	Service Repair Procedures**	5	6-12
10-442-126	Metal Repair Techniques	2	2-2
10-890-101	College Success Study Skills 1**	1	1-0
Semester Total		17	
Second Semester			
32-404-318	Heating and Air Conditioning**	2	1-2
32-404-339	Braking Systems**	5	5-13
32-404-341	Suspension and Steering Systems**	5	5-13
31-804-379	Vocational Mathematics 1	1	2-0
Semester Total		13	
Third Semester			
32-404-355	Automatic Transmissions**	5	5-13
32-404-356	Manual Drivetrain and Axles**	5	5-13
10-602-115	Intro to Electric and Hybrid Electric Vehicles**	2	1-2
10-104-189	Customer Relations	2	2-0
31-806-363	Science 1	2	2-2
Semester Total		16	
Fourth Semester			
32-404-316	Accessories**	2	1-3
32-404-336	Engine Rebuilding**	5	5-13
32-404-357	Drivability Diagnosis**	5	6-12
Semester Total		12	
Total credits		58	

*Meets for 6 weeks.

**Meets for 8 weeks.

Notes:

- Safety procedures are required in all labs.
- Prerequisites can be waived with Program Director approval.
- Consult with the Program Director regarding advanced standing.
- Certain associate degree or higher post secondary courses specific to the curriculum may substitute for courses upon approval of center deans.
- An end of program assessment is required. The cost of the assessment is part of program fees.
- Successful completion of safety training is required before working in any Automotive Technology lab (shop).
- Automotive students must abide by the Automotive Student Policy.

Note: Students are placed in English or mathematics courses based on their scores on the COMPASS or ASSET test or on completion of the appropriate prerequisite/s.



Program Courses

10-442-126 Metal Repair Techniques 2 credits
This course covers safety, layout and measurement, grinding, drill press the lathe operation, filing, threading, properties of metals, oxy-acetylene welding, brazing and cutting, and SMAW, GMAW, GTAW and FCAW.

10-602-115 Intro to Electric and Hybrid Electric Vehicles 2 credits
This course provides: a brief history of electric and hybrid electric vehicles, electric/hybrid electric vehicle safety procedures and equipment; electric vehicle components and current vehicle overview; hybrid electric vehicle components; current design configurations, current and near future vehicles; an introduction to electric/hybrid electric vehicle test equipment and procedures; and an introduction to electric/hybrid electric vehicle maintenance and trouble shooting. Prerequisites: 10-602-119 and 10-602-166 or 32-404-335; or instructor consent.

10-602-125 Electrical and Electronics Systems 1 2 credits
The automotive repair industry demands that technicians have a proficient understanding of the electrical systems which are at the heart of today's vehicles. Students are introduced to basic electricity fundamentals in accordance with industry standards and then apply the concepts to vehicle circuits and components. Co-requisite: 10-602-127

10-602-127 Electrical and Electronics Systems 2 2 credits
This automotive course focuses on developing the skills needed to diagnose, service, and repair electrical and electronic systems, including batteries, starting and charging systems, lighting systems, horn and wiper systems and introduction to computer control systems. Co-requisite: 10-602-125.

32-404-316 Accessories 2 credits
Students study equipment supplied by both the major manufacturers of automobiles and after-market suppliers. Classroom and lab activities help students understand basic electricity, electric circuits and use of test equipment to troubleshoot problems in circuits such as lighting, windshield wipers, power windows, instruments and sound systems. Pre- or Co- requisite: 32-404-340.

32-404-318 Heating and Air Conditioning 2 credits
Covers the basic principles of heating and air conditioning. Detailed studies of heating systems, air conditioning systems, including vacuum and electrical controls, and automatic temperature control systems are carried out in the classroom and the lab. Diagnosis and typical service jobs are done in the lab using up-to-date tools and diagnostic equipment. Students will receive State of Wisconsin AG 136.09 certification upon completion of this course.

32-404-335 Powertrain Management Systems 5 credits
All engine operating systems are studied: engine breathing, ignition systems, computer control and sensors, fuel and air management and emission systems. Students learn how these systems operate, how to test for proper operation of systems and components, and how to use test equipment. Pre- or Co-requisite: 10-602-125 and 32-404-340.

32-404-336 Engine Rebuilding 5 credits
Students become familiar with the tools, machines and equipment used to repair automotive engines. Emphasis is placed upon the development of diagnostic ability and work skills. Prerequisites: 32-404-340; 32-404-335.

32-404-339 Braking Systems 5 credits
This course covers fundamentals of automotive brake systems including drum brakes, disc brakes, hydraulic systems, power brakes and anti-skid systems. Covers wheel and tire diagnosis and repair. Steering and suspension safety inspection is covered. Laboratory work stresses brake overhaul and component reconditioning and troubleshooting of brakes. Pre- or Co- requisite: 10-602-125

32-404-340 Service Repair Procedures 5 credits
The theory, design and operation of the automobile engine, along with maintenance, light-duty repair and safety inspection are studied. Engine lubricating, cooling, exhaust systems and headlight aiming are studied and serviced. Theory and proper use of hand tools, test equipment, sealants, and fasteners are emphasized. Pre- or Co- requisite: 10-602-125

32-404-341 Suspension and Steering Systems 5 credits
Covers basic principles of passenger car construction, suspension, and wheel alignment angles. Laboratory work stresses inspection, correction or replacement of all suspension parts and the role they play in proper vehicle handling and operation. Alignment procedures and the use of modern wheel alignment machines and troubleshooting are stressed. Pre- or Co- requisite: 10-602-125

32-404-355 Automatic Transmissions 5 credits
Students study the electrical, mechanical and hydraulic systems of the modern automatic transmission and transaxle. Demonstrations and practice provide the opportunity to become proficient in diagnosis, service and complete rebuilding of these systems. Prerequisites: 32-404-340.

32-404-356 Manual Drivetrain and Axles 5 credits
Clutches, standard transmissions, manual transaxles, drivelines and differentials are studied. Demonstrations and practice provide the opportunity to become proficient in diagnosis, service and complete rebuilding of these systems. Prerequisites: 32-404-340.

32-404-357 Drivability Diagnosis 5 credits
Practical application of principles, concepts and diagnostic abilities covered in the three-prerequisite course. Advanced electrical/electronic diagnostic applications will reinforce prior competency development. Prerequisites: 32-404-340; and 32-404-335.

AG 136/EPA Certification

For more information on this four-hour course, call (608) 246-6831 or 243-4169.

Career Potential:

- Automotive Service Technician
- Auto Electronics Specialist
- Transmission and Drive Train Specialist
- Alignment Specialist
- Automotive Machine Specialist
- Service Manager or Assistant Service Manager
- Service Writer

With additional education and/or work experience, graduates may find employment as:

- Shop Foreman
- Specialty Technician
- Fleet Dispatcher
- Specialty/Repair Shop Owner

More detailed and updated information on this program may be available at: madisoncollege.org. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

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Rev. 09/15

Automotive Technology- Comprehensive

Program Number: 10-602-6

Associate in Applied Science Degree

Transportation Program Cluster

School of Applied Science, Engineering, and Technology

Program offered at Madison Campuses

For information call: (608) 246-800 or
(800) 322-6282 Ext. 6800

About the Program

Employment opportunities for automotive technicians include all aspects of automotive sales and service businesses. In the automotive service business, technicians and service writers are needed. With proper background and experience, advancement to shop foreman, service manager and other highly responsible positions is possible. Other employment opportunities include working in manufacturing as an engineering aid or as a sales representative for manufacturers of automotive tools and equipment or operating your own auto repair business.

Admissions Requirements

To review admissions program requirements and application processing dates, visit the program's website at: <http://madisoncollege.edu/program-info/automotive-technology>.

Note: Mandatory attendance for the automotive orientation is required prior to starting the program.

Requirements for Graduation

Students must meet two 2.0 GPA requirements to graduate. (1) GPA for entire program must be 2.0 or above; (2) GPA of combined occupational courses (602) must be 2.0 or above.

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

		Credits	Hrs/week Lec-Lab
First Semester			
10-602-102	Service Repair Procedures**	4	2-12
10-602-125	Electrical and Electronics Systems 1*	2	2-0
10-602-127	Electrical and Electronics Systems 2**	2	1-2
10-602-156	Comfort Control Systems**	2	1-2
10-602-166	Powertrain Management Technology**	5	4-14
10-804-134	Mathematical Reasoning	3	3-0
Semester Total		18	
Second Semester			
10-442-126	Metal Repair Techniques	2	2-2
10-602-157	Technical Braking Systems**	4	2-12
10-602-158	Service Management**	2	1-2
10-602-163	Technical Suspension and Steering**	4	2-12
10-801-195	Written Communication	3	3-0
10-809-199	Psychology of Human Relations	3	3-0
Semester Total		18	
Third Semester			
10-602-153	Manual Drive Train and Axles**	4	2-13
10-602-154	Fluid Power Transmission**	5	2-13
10-602-162	Automobile Accessories**	2	1-3
10-806-139	Survey of Physics	3	2-2
10-809-195	Economics	3	3-0
Semester Total		17	
Fourth Semester			
10-602-115	Intro to Electric and Electric Hybrid Vehicles**	2	1-2
10-602-150	Internal Combustion Engines**	4	4-11
10-602-152	Drivability Analysis**	4	4-11
10-801-197	Technical Reporting	3	3-0
10-806-134	General Chemistry	4	3-9
Semester Total		17	

*Meets for 6 weeks.

**Meets for 8 weeks.

Notes:

- COMPASS test required upon program acceptance.
- **Students are placed in English or mathematics courses based on their scores on the COMPASS or ASSET test or on completion of the appropriate prerequisite/s.**
- College transfer courses are available in lieu of general education courses (200 series) for individuals who may be interested in further continuing their education. Always check receiving institution prior to enrollment for transferability of any course work.
- Safety procedures required in all labs.
- Prerequisites can be waived with Program Director approval.
- Consult with the Program Director regarding advanced standing.
- Certain associate degree or higher post-secondary courses specific to the curriculum may substitute for courses upon approval of center dean.
- An end of program assessment is required. The cost of the assessment is part of program fees.
- Successful completion of safety training is required before working in any Automotive Technology lab (shop).
- Automotive students must abide by the Automotive Student Policy.



Program Courses

10-442-126 Metal Repair Techniques 2 credits
This course covers safety, layout and measurement, grinding, drill press, the lathe operation, filing, threading, properties of metals, oxy-acetylene welding, brazing and cutting, and SMAW, GMAW, GTAW and FCAW.

10-602-102 Service Repair Procedures 4 credits
Automobile engine theory, design and operation are studied. Other studies included are the diagnosis and repair procedures of the engine cooling, lubricating and exhaust systems. Batteries, starting and charging systems are covered in detail along with the proper use of meters and the latest test equipment. Shop safety and proper use of hand tools is emphasized. Pre- or Co-requisite: 10-602-125.

10-602-115 Intro to Electric and Hybrid Electric Vehicles 2 credits
This course provides: a brief history of electric and hybrid electric vehicles, electric/hybrid electric vehicle safety procedures and equipment; electric vehicle components and current vehicle overview; hybrid electric vehicle components; current design configurations, current and near future vehicles; an introduction to electric/hybrid electric vehicle test equipment and procedures; and an introduction to electric/hybrid electric vehicle maintenance and trouble shooting. Prerequisites: 32-404-319, and 10-602-166 or 32-404-335; or instructor consent.

10-602-125 Electrical and Electronics Systems 1 2 credits
The automotive repair industry demands that technicians have a proficient understanding of the electrical systems which are at the heart of today's vehicles. Students are introduced to basic electricity fundamentals in accordance with industry standards and then apply the concepts to vehicle circuits and components. Co-requisite: 10-602-127.

10-602-127 Electrical and Electronics Systems 2 2 credits
This automotive course focuses on developing the skills needed to diagnose, service, and repair electrical and electronic systems, including batteries, starting and charging systems, lighting systems, horn and wiper systems and introduction to computer control systems. Co-requisite: 10-602-125.

10-602-150 Internal Combustion Engines 4 credits
The internal combustion automotive engine is studied in detail by discussion, demonstration and laboratory experiments. The latest machining equipment is used to accurately diagnose, disassemble, repair, and reassemble an automobile engine. Diagnosis of engine related mechanical problems is covered. Prerequisites: 10-602-102 and 10-602-166.

10-602-152 Drivability Analysis 4 credits
Practical application of principles, concepts and diagnostic abilities covered in the 2 prerequisite courses. Advanced electrical/electronic diagnostic applications will reinforce prior competency development. Prerequisites: 10-602-102 and 10-602-166.

10-602-153 Manual Drive Train and Axles 4 credits
This automotive course focuses on developing the skills needed to diagnose, service and repair clutches, manual transmissions/transaxle, differentials, four wheel drive/all wheel drive, and drive axles. Pre- or Co-requisites: 10-602-102.

10-602-154 Fluid Power Transmission 4 credits
This automotive course focuses on developing the skills needed to diagnose, service, and repair automatic transmission/transaxles including overhaul procedures. Pre- or Co-requisites: 10-602-102.

10-602-156 Comfort Control Systems 2 credits
Study includes basic principles of refrigeration and air conditioning including the component parts that make up the A/C units on passenger cars and light trucks. Heating and automatic temperature control are also studied. Students will receive State of Wisconsin AG 136.09 certification upon completion of this course.

10-602-157 Technical Braking Systems 4 credits
Topics include principles of drum and disc brake designs, inspection and diagnosis. Covers wheel and tire diagnosis and repair. Steering and suspension safety inspection is covered. Lab experiences including inspecting, troubleshooting and the repair and replacement of defective or worn parts of the complete brake system. The use of correct procedure and tools is stressed. Pre- or Co-requisite: 10-602-125.

10-602-158 Service Management 2 credits
The principles of various types of business organizations are examined and applied to automotive wholesale and retail businesses, ultimately focusing on the automobile as part of the service department. Service department operation is covered in detail and depth from large organizations to small organizations. The conventional line method of management is stressed. Employment possibilities and job interviewing techniques are discussed. Prerequisites: 10-602-102 and 10-602-157.

10-602-162 Accessories 2 credits
Examines equipment supplied by both major manufacturers of automobiles and after-market suppliers. Classroom and lab activities help students to understand basic electricity, electric circuits and use of test equipment to troubleshoot problems in circuits such as lighting, windshield wipers, power windows, instruments and cruise control. Pre- or Co-requisites: 10-602-102.

10-602-163 Technical Suspension & Steering 4 credits
Principles of suspension designs, wheel alignment angles, inspection procedures, parts replacement, steering systems, shock absorbers/struts, sway bars and frame design. On-the-job experiences include inspecting and correcting suspension angles, parts replacement, adjusting steering gears. Covers four-wheel alignment. Pre- or Co-requisite: 10-602-125.

10-602-166 Powertrain Management Technology 5 credits
All engine operating systems are studied: engine breathing, ignition systems, computer control and sensors, fuel and air management and emission systems. Students learn how these systems operate, how to test for proper operation of systems and components, and how to use test equipment. Pre- or Co-requisites: 10-602-102 and 10-602-125.

AG 136/EPA Certification

For more information on this four-hour course, call (608) 246-6831 or 243-4169.

Career Potential:

- Service Writer
- Diagnostic Specialist
- Service Manager
- Specialized Technician
- Equipment Sales
- Equipment Service and Training Technician
- Service Director
- Lab Technician
- Shop Owner
- Fleet Manager

More detailed and updated information on this program may be available at: madisoncollege.edu. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

Madison Area Technical College provides equal opportunity in education and employment.

Rev. 09/15

Baking & Decorative Arts

Program Number: 31-314-1

One-Year Technical Diploma

Hospitality Program Cluster

School of Business and Applied Arts

Program offered at Madison Campuses

For information call:

(608) 246-6007 or (800) 322-6282 Ext. 6007
 OR
 (608) 246-6044 or (800) 322-6282 Ext. 6044

About the Program

The Baking/Pastry Arts Program provides students with a comprehensive hands-on experience in baking and decorative arts. Students will obtain the practical and theoretical training necessary to produce quality bakery products from scratch, such as pastries, tortes and hearth breads. An emphasis is placed on decorative work including cake decorating, sugar and chocolate art. Through their experiences in the bakery store, students learn effective merchandising and sales training techniques.

This program is designed to be completed in an accelerated 20-week semester with a summer session. Due to the limited availability of the courses and the small size of the program, students may not attend on a part-time basis.

The program is approved by RBA, the Retail Bakers of America and the ACR, American Culinary Federation. After completion of the B/PA program and with 1000 hours of work experience in the baking industry, students can take the Retail Bakers of America's Certified Journey Baker written exam. This is the beginning level of certification leading up to a Master Baker qualification. The purpose of RBA certification is to raise the professional standards and verify the work, skill and knowledge professional bakers bring to the marketplace and improve job opportunities and income for certified bakers and decorators.

Graduates of this program typically earn \$13 to \$15 per hour.

Admissions Requirements

To review admissions program requirements and application processing dates, visit the program's website at:

<http://madisoncollege.edu/program-info/baking-decorative-arts>.

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

		Credits	Hrs/week Lec-Lab
Semester prior to start of program			
31-314-300	Baking Boot Camp.....	1	1-1
First Semester			
31-314-305	Chocolate.....	2	0-4
31-314-306	Bakery Retail.....	1	0-2
31-314-309	Baking Principles.....	2	2-2
31-314-315	Baking Lab 1.....	3	0-6
31-314-325	Baking Lab 2.....	3	0-6
31-314-384	Cake Decorating.....	2	0-4
10-316-101	Principles of Sanitation.....	1	1-0
Second Semester			
31-314-335	Cakes.....	3	0-6
31-314-345	Artisan Breads.....	3	0-6
31-314-355	Bakery Production.....	3	0-6
31-314-375	Experimental Baking.....	1	0-2
31-314-388	Advanced Cake Decorating.....	2	0-4
31-314-389	Baking Seminar.....	1	0-2
Semester Total		13	
Program Total		27	



Program Courses

10-316-101 Principles of Sanitation 1 credit

Covers food service sanitation principles and the role of food service personnel in the prevention of contamination and food borne illness. Certification through the National Restaurant Association Educational Foundation is a requirement for completion and can be used to apply for state certification. Prerequisite: Appropriate Reading Placement test score or equivalent course.

31-314-300 Baking Boot Camp 1 credit

This course is required for all students accepted into the Baking/Pastry Arts program and is taken during the summer prior to their program enrollment. This short course offers the students an introduction to the requirements and demands of the program and to a career in the baking industry. Students spend time in the classroom as well as the baking lab.

31-314-305 Chocolate 2 credits

Students are introduced into the world of chocolate. The history and production of chocolate is discussed. Learners sample a wide variety of chocolates from different companies, as well as specific types of chocolate. Products are made using these different chocolates and then compared and evaluated. After learning to temper chocolate, both molded and hand dipped chocolates are produced. Prerequisites: 31-314-300 and concurrent enrollment in all Baking/Pastry Arts program classes

31-314-306 Bakery Retail 2 credits

The lab is used as a simulated bakery in this course with products being merchandised through the bakery store. Students are responsible for service case presentation as well as effective merchandising displays and customer service. Prerequisites: 31-314-300 and concurrent enrollment in all Baking/Pastry Arts program classes

31-314-309 Baking Principles 2 credits

This course provides an in depth understanding of basic baking principles and knowledge of the functions and appropriate usage of the major ingredients used in production baking. Different types of bakery products are classified according to their characteristics. The theoretical knowledge is enhanced through lab experiments.

31-314-315 Baking Lab 1 3 credits

Students develop a foundation of baking principles through hands-on application of production equipment in a state-of-the-art baking lab. Students will prepare a variety of standard bakery products to obtain knowledge of many baking processes. Safe use of bakery equipment and proper sanitation procedures are emphasized. Prerequisites (or concurrent enrollment): 10-316-101 and 31-314-310 and appropriate Math Placement test score or equivalent course

31-314-325 Baking Lab 2 3 credits

Students develop manual baking skills and a working knowledge of the production and finish of various straight yeast dough such as breads and rolls; sweet dough; pate choux, pastry cream, cheesecakes, and frozen desserts. Students learn both handcrafted and machine methods in the make-up of these products. Prerequisites (or concurrent enrollment): 10-316-101 and 31-314-310 and appropriate Math Placement test score or equivalent course

31-314-335 Cakes 3 credits

This course covers all aspects of specialty cake baking, constructing, and assembly. Products include various types of foam cakes, creamed cakes, icings and fillings, along with dessert sauces, and plating techniques. European classic recipes as well as current trends in cakes will be demonstrated with lab time for practice. An assortment of miniature bakery products will be produced. Prerequisite: 10-316-101 and 31-314-315

313-314-345 Artisan Breads 3 credits

This course provides students with a working knowledge of the production of pre-fermented yeast dough and sourdoughs. In addition, students produce Viennoiserie, both laminated such as croissant, Danish and Kringle, and non-laminated products as Brioche and Gibassier. Production methods and speed are emphasized. Cooked custards and crepes are also introduced. Prerequisite: 31-314-325

31-314-355 Bakery Production 3 credits

The lab is used as a simulated bakery in this course with products being merchandised through the bakery store. Students make items with an emphasis on production speed to help understand the flow of a real bakery. Students are responsible for service case presentation as well as effective merchandising displays and customer service. Prerequisite: 10-316-101, and concurrent enrollment in all second semester Baking/Pastry Arts courses

31-314-375 Experimental Baking 1 credit

Provides the opportunity to discover functions of ingredients through lab experiments. Ingredient amounts and procedures are varied in specific formulas and results are observed to determine optimum formulation. Prerequisites: 31-314-310, 10-316-101, and appropriate Math Placement test scores or equivalent course

31-314-384 Cake Decorating 2 credits

Provides students with hands-on practice in the basics of production cake decorating and decorative bakery work, with attention given to the techniques of icing cakes. Cake decorating areas include script, borders, drop and nail flowers, as well as the use of edible images. Students practice icing cakes and decorating them in a timely manner. Emphasis is placed on accuracy and speed of decorating to simulate industry conditions. Prerequisites: 31-314-310 and 10-316-101

31-314-388 Advanced Cake Decorating 2 credits

Hands-on practice with advanced cake decorating techniques is provided. Rolled fondant, modeling with gum paste and marzipan, advanced air brushing and tiered cake assembly are covered. Prerequisite: 31-314-384, or instructor consent

31-314-389 Baking Seminar 1 credit

Covers current and relevant issues related to baking and pastry arts. Guest professionals provide expertise and knowledge about specific areas in the baking industry. In-depth research is conducted on selected topics. A research paper is required. Must be taken in final semester of Baking/Pastry Arts program

Career Potential:

- **Bakery Worker**
May work in a variety of commercial food service establishments such as retail bakeries, supermarket bakeries, restaurants or hotels, hospitals or nursing homes, catering operations and specialty shops.

With additional education and/or work experience, graduates may find employment as:

- **Baker**
- **Bakery Manager**
- **Commercial Cake Decorator**
- **Bakery Owner**

More detailed and updated information on this program may be available at: madisoncollege.edu. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

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Rev. 04/15

Certificate

Applied Engineering Program Cluster
 School of Applied Science, Engineering, & Technology
 Program offered at Madison Campuses

For information call: (608) 246-6800
 or (800) 322-6282 Ext. 6800 or (608) 246-6521

About the Certificate

The Madison College Bioenergy Energy Certificate is designed to provide students with the theoretical knowledge necessary for a career in bioenergy technology. The flexible certificate format allows students to blend online, face-to-face, and hands-on coursework, to earn an academic credential in bioenergy. The certificate requires a minimum of 15 credits of coursework.

Certificate credits may be combined with additional coursework to enhance traditional diploma, degree, transfer and associate programs at Madison College. The credits also may be combined with additional training, job experience and/or professional examinations to qualify for certification by national renewable energy institutions.

Incumbent trade workers and technical professionals are also encouraged to investigate how a Bioenergy Certificate may relate to their current work or business practices. Online, weekend, and summer class schedules accommodate high school and post-secondary educators in the science and technical education fields.

Certificate Application Process

To review program admission requirements and application processing dates visit the programs website at: <http://madisoncollege.edu/program-info/bioenergy>.

Unique Requirements for Completion

The certificate will be awarded upon completion of the requirements with a minimum of a 2.0 grade average and no course grade lower than a C. The certificate will be awarded when completion of all requirements is verified after the semester the last course has been completed.

Program Courses

10-140-112 Renewable Energy for the Developing World 3 credits
 Students participate in a 10 day in-country service learning project in a developing world country, continuing with eight weeks of online coursework to extend their knowledge of energy production and use in the developing world.

10-414-100 DC/AC Circuits for Industry 3 credits
 Study of practical DC concepts with and introduction to AC concepts. Course topics include electrical quantities and components and measurement instruments with an emphasis on DC circuits. Students analyze and construct circuits and measure voltage, current, resistance and power for both AC and DC sources. Studies principles of electricity AC components and circuits. Coverage includes combination circuits that contain Resistive Inductive and/or Capacitive properties. Emphasis on circuit troubleshooting and efficiencies. Course introduces theory and application of three-phase circuits, single phase, transformers, generators, and motors. Covers fundamentals of NEC wiring, soldering and relay ladder logic.

10-481-110 Energy Management 3 credits
 The student will perform critical examination of energy consuming facilities both domestic and commercial for the purpose of identifying energy conservation opportunities. In addition the student will identify various energy conservation techniques as well as equipment which can be installed to further conserve energy.

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

	Credits	Hrs/week Lec-Lab
Core Course List		
<i>A minimum of 6 credits from these core courses:</i>		
10-481-110 Energy Management.....	3.....	3-0
10-484-160 Introduction to Biomass Energy	3.....	3-0
20-806-291 Introduction to Renewable Energy*	3.....	3-0
Additional Course List		
<i>Plus additional credits from these courses to reach a total of 15 credits:</i>		
32-414-316 DC/AC Circuits OR	3.....	4-2
10-414-100 DC/AC Circuits for Industry OR	(3).....	0.5-5
10-484-120 Introduction to Biofuels	2.....	2-0
10-484-121 Introduction to Ethanol Fuel.....	1.....	1-0
10-484-130 Introduction to Biodiesel Fuel.....	1.....	1-0
10-484-161 Anaerobic Digestion and Biogas Technology	1.....	1-0
10-484-164 Biomass Systems, Nutrient Management,.....		
20-806-290 Renewable Energy for International Development**	3.....	3-0
Sub-total		6-9
Total	15 credits	

Notes:
 *course is available online
 **8 weeks online and 2 weeks study abroad

- 10-484-120 Introduction to Biofuels 1 credit**
 An introduction to solid, liquid and gaseous fuels derived from all sources. This course will cover the history of fuel use, placing petroleum into its proper context of being just one of the many alternatives being exploited by humans to fulfill current demands. Topics include the history of fuel and petroleum, peak oil, economics of petroleum and biofuels, engine design and fuel requirements, agriculture and fuels, wastes, conventional ethanol production, cellulosic ethanol, algae, other alcohols (biobutanol, etc.), biodiesel, biogas (anaerobic digestion), gasification, pyrolysis, fuel quality, environmental impacts, energy independence and national security.
- 10-484-121 Introduction to Ethanol Fuel 1 credit**
 This course will provide the student with a general overview of ethanol fuel. Topics covered will include fermentation and distillation chemistry, ASTM fuel testing, engine performance, and exhaust emissions. An introduction to E85 fuel systems will also be included.
- 10-484-130 Introduction to Biodiesel Fuel 1 credit**
 This course will provide a general overview of biodiesel fuel. Production and quality control of biodiesel fuel will be explored, and students will have the opportunity to synthesize a small scale batch of biodiesel. Topics covered will include transesterification chemistry, separation techniques, ASTM fuel testing, engine performance, and exhaust emissions.
- 10-484-160 Introduction to Biomass Energy 3 credits**
 This course provides an overview of energy production from biomass resources. The course explores the fundamentals of plant growth, energy yield, economics, production, and processing methods for both herbaceous and woody crops. Technologies covered include combustion, gasification, pyrolysis, fermentation, transesterification, and anaerobic digestion. Value-added bio-refining products are also examined, along with the environmental impacts of biomass energy.
- 10-484-161 Anaerobic Digestion and Biogas Technology 1 credit**
 Provides participants with an understanding of basic heat transfer properties as well as the biological and chemical reactions that take place in anaerobic digestion systems. Participants will also develop an in-depth knowledge of the design of anaerobic digestion systems, troubleshooting and repair methods, and workplace safety.



Program Courses (continued)

Program Number: 90-480-3

10-484-164 Biomass Systems, Nutrient Management, and Recycling 1 credit

Excess nutrients, particularly nitrogen (N) and phosphorus (P), are the major pollutants in lakes and estuaries and the second leading source of pollution in rivers according to the U.S. EPA, yet all living flora and fauna need nutrients to grow and thrive. This course will discuss how to balance the inputs and outputs within a healthy ecosystem. In this weekend short-course, we will explore conventional practices, next-generation solutions, and practical ways to recycle these major agricultural inputs. Our focus will be mostly 'on-farm' with field trips as well as guest speakers from academia, agriculture, public and private sectors. This course is relevant for everyone who has a stake in the U.S. food-chain.

20-806-290 Renewable Energy for International Development 3 credits

This course provides an examination of energy and economics in developing countries with special consideration given to renewable energy sources. The course will combine 10 days of travel and study abroad in a developing country along with 8 weeks of online instruction. Students will learn to specify, design, and install renewable energy systems for deployment in developing countries. Field work will include design and construction/installation of one or more residential scale renewable energy systems (e.g., solar electric systems, solar hot water systems, solar ovens, micro-hydropower, small scale wind generators, and household methane biodigesters).

20-806-291 Introduction to Renewable Energy 3 credits

This course provides an introduction to renewable energy technology. The course is grounded in the fundamentals of energy, power, and the first and second laws of thermodynamics. A scientific approach is used to examine various energy sources, including fossil fuels, nuclear, biomass, biofuels, solar, hydro, wind, geothermal, and ocean/tidal power. Various types of energy storage technology are also examined. Science and engineering challenges are examined for each energy technology, along with economic and environmental impacts. This course is suitable for any student with an interest in renewable energy, particularly those pursuing studies in scientific, technical, and engineering fields.

32-414-316 DC/AC Circuits 3 credits

Introduces the practical DC/AC concepts including electrical quantities and components and measurement instruments for AC and DC circuits used in commercial, industrial, and sustainable energy fields. Students analyze and construct circuits and measure voltage, current, resistance and power for both AC and DC sources. Covers the fundamentals of NEC wiring, soldering, and relay ladder logic.

Career Potential:

- Electrician
- Bio, mechanical and process technician
- Byproduct manufacturer
- System designer
- Facilities manager
- Agribusiness manager

Complimentary Programs:

- Industrial Maintenance
- Automotive, Diesel, and Heavy Equipment
- Biotechnology
- Engineering Transfer Program
- Liberal Arts Transfer Program

More detailed and updated information on this program may be available at: madisoncollege.edu. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

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Bioinformatics Certificate

Certificate

Biotechnology and Electron Microscopy Program Cluster

and Information Technology Program Cluster

School of Business and Applied Arts

Courses offered at Madison Campuses

For information call:

(608) 246-6003 or (800) 322-6282 Ext. 6003 OR

(608) 246-6800 or (800) 322-6282 Ext. 6800

About the Certificate

Bioinformatics is the application of information technology to the management and analysis of biological data. This certificate is designed for individuals with a college background in the life sciences in order to prepare them to effectively use the tools and methods of bioinformatics to enhance their work. The certificate curriculum was created in consultation with local industry professionals to provide scientists and technicians with the ability to analyze and interpret the increasing deluge of biological data generated through the use of new technologies.

Admission Requirements

To review program admission requirements and application processing dates, visit the program's website at: <http://madisoncollege.edu/program-info/bioinformatics-certificate>.

Requirements for Completion

The certificate will be awarded upon completion of the requirements with a minimum of a 2.0 grade average and no course grade lower than a C. The certificate will be awarded when completion of all requirements is verified after the semester the last course has been completed.

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

		Hrs/week	
		Credits	Lec-Lab
First Semester			
10-007-180	Introduction to Bioinformatics	3	2-2
10-152-109	Python Programming*	3	2-2
Second Semester			
10-007-182	Bioinformatics Algorithms and Techniques	3	2-2
Third Semester			
10-007-181	Advanced Bioinformatics	3	2-2

Note: All Information Technology courses require a grade of C or better in order to receive the certificate.

*Other programming languages may be substituted for Python Programming with consent of program director.



Courses

10-007-180 Introduction to Bioinformatics 3 credits

This survey course is an introduction to the concepts and tools used in bioinformatics. The fundamentals of sequence alignment, data mining and microarray data analysis will be discussed. This course will also provide the student with an overview of the computing tools used for bioinformatics, such as Unix, Perl, and file structure and management. Mastery of these tools is not expected in this course; rather, the student is given a practical introduction to the Perl Programming language in the Unix operating system environment.
Prerequisite: Acceptance into certificate program.

10-152-109 Python Programming 3 credits

This is an introductory scripting course in the Python programming language. Topics include: basic programming techniques, I/O, data processing, file manipulation, program control logic, functions, modules, and exception handling.

10-007-182 Bioinformatics Algorithms and Techniques 3 credits

This course provides an introduction to the major algorithms of sequence analysis, structure prediction, and pattern recognition. These techniques are utilized in array data processing, NextGen sequencing, target discovery, and assay development. This includes dynamic programming, hidden markov models, graph algorithms, and clustering algorithms.
Prerequisite: grade of C or better in 10-007-180 and 10-152-109 or equivalent programming language, or consent of instructor.

10-007-181 Advanced Bioinformatics 3 credits

This capstone course in Bioinformatics provides the student with experience in the design and implementation of basic programming concepts applied to bioinformatics problems. Using the skills gained in previous certificate courses, the student designs and completes an independent project.
Prerequisites: grade of C or better in 10-007-180, 10-152-109, and 10-007-182.

More detailed and updated information on this program may be available at: madisoncollege.edu. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

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Other Recommended Courses

Courses that may also be of interest to bioinformatics certificate students include the following:

10-152-120	Website Development-HTML5	3 credits
10-152-125	Relational Database Coding – Oracle/SQL	3 credits
20-804-240	Basic Statistics	4 credits
10-152-190	Linux Server	3 credits
10-07-124	Molecular Biology	3 credits
10-07-125	Research Methods Biotechnology	3 credits

Biotechnology Laboratory Technician

Program Number: 10-007-2

Associate in Applied Science Degree

Biotechnology and Electron Microscopy Program Cluster

School of Applied Science, Engineering, and Technology

Courses offered at Truax Campus

For information call:

(608) 246-6800 or (800) 322-6282 Ext. 6800

About the Program

The Biotechnology Laboratory Technician Program emphasizes skills necessary for entry-level employment in bioscience laboratories. The program focuses on techniques basic to the commercial development of products from biological systems. Students acquire proficiency in laboratory skills, effective communications and employment skills. Individuals who like the challenge of laboratory work are encouraged to apply.

Program graduates may seek entry-level employment in public or private laboratories for positions titled laboratory assistant, laboratory technician, laboratory tester or laboratory worker. These laboratories are found in universities, pharmaceutical companies, food processing industries, companies performing research and development, and companies involved in plant and animal breeding.

The following biotechnology certificates also available: Bioinformatics Certificate, Biotechnology "Traditional" Post-baccalaureate Certificate, Biotechnology Intensive Post-baccalaureate Certificate, and Stem Cell Technologies Certificate. Check on the website or call the above phone numbers for more information.

Admission Requirements

To review program admission requirements and application processing dates visit the programs website at:

<http://madisoncollege.edu/program-info/biotechnology-laboratory-technician>.

Note:

A [three-year plan](#) of this program can be found on the Additional Information tab or the right-hand menu on the [program web page](#).

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

		Credits	Hrs/week Lec-Lab
First Semester			
10-007-103	Biotechnology Laboratory Skills for a Regulated Workplace	3	1-6
10-007-108	Hazardous Materials (6 weeks)	1	2-2
10-007-111	Biotechnology Career Seminar	1	1-0
10-007-115	General Cell Biology	4	3-3
10-007-136	Laboratory Math for Biotechnology	1	0-2
10-801-195	Written Communication* OR	3	3-0
20-801-201	English 1*	(3)	(3-0)
10-806-127	Chemistry 1* OR	4	3-2
20-806-201	General, Organic, and Biological Chemistry*	(5)	(4-2)
	Semester Total	17	(18)
Second Semester			
10-007-104	Chromatography Techniques	3	1-6
10-007-105	Bioprocess Technology	3	1-6
10-007-110	Biotechnology Applications	1	1-0
10-007-174	Applied Microbiology	4	2-4
10-801-196	Oral/Interpersonal Communications* OR	3	3-0
20-801-202	English 2*	(3)	(3-0)
10-806-129	Chemistry 2* OR	4	3-2
20-806-216	Chemistry for Biotechnology*	(3)	(2-2)
	Semester Total	18	(17)
Third Semester			
10-007-122	Protein Bioseparation Methods	3	1-6
10-007-123	Cell Culturing	3	1-6
10-007-124	Molecular Biology 1	3	1-6
10-007-152	Making Biotechnology Products	2	0-4
10-809-197	Contemporary American Society* OR	3	3-0
20-809-203	Introduction to Sociology*	(3)	(3-0)
10-809-199	Psychology of Human Relations* OR	3	3-0
20-809-231	Introduction to Psychology*	(3)	(3-0)
	Semester Total	17	
Fourth Semester			
10-007-112	Biotechnology Employment Skills	1	1-0
10-007-121	Applied Biochemistry	3	2-3
10-007-125	Research Methods in Molecular Biology	3	1-6
10-007-126	Occupational Work Experience	3	0-12
10-809-195	Economics* OR	3	3-0
20-809-211	Macroeconomics	(3)	(3-0)
	Elective	3	(3-0)
	Semester Total	16	

*Students may meet some or all of the general studies requirements at Madison College or at another college prior to entering the Biotechnology Program. Students are encouraged to take college transfer courses for educational advancement

Students are assessed for correct placement in English or mathematics courses based on their scores on the COMPASS test or on completion of the appropriate prerequisite(s). Additionally, there may be courses in other subject areas that may use COMPASS scores as prerequisites when reading, writing, math, or critical thinking competencies are required.



Madison Area Technical College
Biotechnology Laboratory Technician
Program Courses

Program Number: 10-007-2

10-007-103 Biotechnology Laboratory Skills for a Regulated Workplace 3 credits

Covers basic concepts and techniques necessary to work effectively in a biotechnology lab. The importance of quality regulations and standards and the role of the technician in producing quality results are emphasized. Students learn basic techniques including: measuring, weighing, mixing solutions, following and writing procedures, keeping records, making observations, and using instrument manuals and catalogues. Principles of metrology (measurement) are introduced and students practice using, calibrating, and verifying the performance of instruments. Prerequisite: Reading score of 80+ or a C or better in College Reading. Co-requisites: 10-806-127 or 20-806-201, and 10-007-136, or consent of instructor.

10-07-104 Chromatography Techniques 3 credits

Introduces the basic concepts involved in separation of biomolecules. Students complete lab work using a variety of chromatographic methods including: paper, thin layer, gel permeation, gas and high performance liquid chromatography. Students also learn to interpret chromatographic results and practice documentation and reporting skills. Prerequisites: 10-007-103, 10-007-136 and 10-806-127 (or 20-806-201).

10-07-105 Bioprocess Technology 3 credits

Covers basic techniques of fermentation technology, including the principles of isolation, identification, improvement, preservation and growth of industrial microorganisms. Emphasizes the use of fermentation equipment to obtain products. Prerequisites: 10-007-103 and 10-806-127 (or 20-806-201). Pre- or Co-requisite: 10-007-174 or consent of instructor.

10-007-108 Hazardous Materials 1 credit

Surveys potential laboratory hazards and safety procedures. Covers regulation of chemicals: flammable, reactive, corrosive, and toxic substances. Prerequisite: Reading score of 80+ or a C or better in College Reading. Co-requisite: 10-806-127 (or 20-806-201).

10-07-110 Biotechnology Applications 1 credit

Provides a broad introduction to biotechnology including the scientific basis of the technologies and their historical development with an emphasis on current applications in the areas of agriculture, medicine, forensics and the environment. No lab. Prerequisite: Reading score of 80+ or a C or better in College Reading.

10-07-111 Biotechnology Career Seminar 1 credit

Includes a discussion of national, state and local biotechnology industries, career options, the ethical, legal and societal issues raised by the use of biotechnology and the regulatory agencies that oversee the industry. No lab. Prerequisite: Reading score of 80+ or a C or better in College Reading.

10-07-112 Biotechnology Employment Skills 1 credit

Discusses the specific skills needed for particular areas and careers, ethical issues and the business of biotechnology including the basics of intellectual property law. Each student gives a presentation on their occupational work experience. No lab. Co-requisite: 10-007-126.

10-007-115 General Cell Biology 4 credits

Introduction to cells, emphasizing their structure, diversity, chemistry and physiology. Processes of cellular respiration, photosynthesis and division are discussed. Describes genetic principles and molecular activities involved in DNA, RNA and protein synthesis. Prerequisite: Reading score of 80+ or a C or better in College Reading.

10-07-121 Applied Biochemistry 3 credits

Introduction to major chemical constituents of cells including proteins, carbohydrates, lipids and nucleic acids. The structure and kinetics of enzymes, reaction mechanisms, and metabolic pathways are also included. Prerequisites: 10-007-103, 10-007-115, and 10-806-129 (or 20-806-216).

10-07-122 Protein Bioseparations Methods 3 credits

Introduces the strategies to purify proteins as part of a biotechnology process. Methods include: specific activity assays for enzymes, extraction of proteins from bacterial cells, salting out, dialysis, ion exchange chromatography and polyacrylamide gel electrophoresis. Prerequisites: 10-007-103, 10-007-104, and 10-806-129 (or 20-806-216).

10-07-123 Cell Culturing 3 credits

Covers the basic techniques of plant and animal cell culture. Plant unit includes media preparation isolation of explants and establishment of callus from suspension cultures, growth factor bioassays, regeneration of whole plants from tissue and plant genetic engineering techniques. Mammalian cell unit includes media preparation, maintenance of cultured cells, transfection of cultured cells, cloning, monoclonal antibody production, and ELISA assays. Prerequisites: 10-007-103 and 10-007-115, or consent of instructor.

10-07-124 Molecular Biology 1 3 credits

Introduces modern molecular biology techniques including basic recombinant DNA techniques and nucleic acid analysis and purification. The polymerase chain reaction, DNA sequence analysis, and DNA fingerprinting are also covered. Prerequisite: 10-007-115.

10-07-125 Research Methods in Molecular Biology 3 credits

Surveys advanced techniques in molecular biology including Southern analysis, and RNA purification and analysis. The course blends discussion of concepts with practical laboratory experience. Prerequisite: 10-007-124.

10-07-126 Occupational Work Experience 3 credits

Students work in a biotechnology laboratory. Emphasizes the integration of academics and practical experiences. Prerequisites: Successful completion of all program courses in the first three semesters of the program, or consent of instructor and successful completion of a performance exam. Co-requisite: 10-007-112.

10-007-136 Lab Math for Biotechnology 1 credit

Introduces mathematical tools that are used in the biotechnology laboratory. Students apply mathematical concepts to solve problems such as: calculating amounts of chemicals required to make solutions, graphing and interpreting data, and calibrating instruments. Basic statistical concepts may also be introduced.

10-007-152 Making Biotech Products 2 credits

Proposed to review and further illustrate the importance of quality in a laboratory environment, with special emphasis on how a quality system directly impacts laboratory scientists. This laboratory-based course will revolve around the creation of a product to be used in other courses in the biotechnology curriculum. Students will create the product, as well as monitor the quality of the process. Time constraints would mean that not every aspect of a quality system could be modeled or discussed; however, even a single course in this area would be invaluable to our students for both review of concepts and employability. Prerequisite: 10-007-122.

10-007-174 Applied Microbiology 4 credits

Surveys the structure, function, ecology, nutrition, physiology, and genetics of microorganisms in industrial, agricultural, food and medical microbiology. Class also includes an introduction to standard techniques and procedures used in the microbiology laboratory. Prerequisite: 10-007-115.

Career Potential:

- **Biotechnology Research Technicians**
Complete scientific work in academic research laboratories, government research laboratories and biotechnology companies under direct supervision.
- **Biotechnology Production Technicians**
Produce useful products using biological systems including bacterial and yeast cells, plants and animals.
- **Laboratory Technicians**
Complete scientific work and conduct experiments in research and development or production laboratories in various biological and biochemical companies and private or public agencies.
- **Quality Control/Assurance Technicians**
Check product performance/ characteristics to ensure regulatory compliance and minimize liability using physical, chemical and biological test equipment and instrumentation to ensure that the product is within acceptable tolerance.

With additional education and/or work experience, graduates may find employment as:

- **Research Scientists**
- **Entry Level Scientists**
- **Associate Scientists**
- **Process Scientists**

More detailed and updated information on this program may be available at: madisoncollege.edu. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

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Note: Lab included unless otherwise indicated.

Biotechnology Laboratory Technician

Program Number: 10-007-2

THREE-YEAR COURSE OF STUDY

This plan of courses is provided for individuals who want to work part-time towards a Biotechnology Associate Degree

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2014-2015 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

FIRST YEAR Fall Semester	Credits
10-007-111 Biotech Career Seminar	1
10-007-115 General Cell Biology	4
<u>20-806-201 General, Organic and Biological Chemistry*</u>	<u>5</u>
Semester Total	10

*Students who have not taken high school chemistry or General Chemistry (10-806-134) at Madison College should take General Chemistry (10-806-134) and see a Biotechnology Program instructor for advising to create a personalized three-year plan

SECOND YEAR Fall Semester	Credits
10-007-108 Hazardous Materials	1
10-07-123 Cell Culturing	3
10-07-124 Molecular Biology I	3
10-801-195 Written Communication†	3
<u>10-809-199 Psychology of Human Relations†</u>	<u>3</u>
Semester Total	13

THIRD YEAR Fall Semester	Credits
10-007-122 Protein Bioseparations Methods	3
10-007-152 Making Biotechnology Products	2
10-801-196 Oral/Interpersonal Communication†	3
<u>10-809-197 Contemporary American Society†</u>	<u>3</u>
Semester Total	11

†Or college transfer alternative

Students may meet some or all of the general studies requirements at Madison College or another college prior to entering the Biotechnology program. Students are encouraged to take the college transfer alternative courses where indicated. (Check your Academic Requirements report in your student center for allowable in lieu of s.)

FIRST YEAR Spring Semester	Credits
10-007-110 Biotechnology Applications	1
10-007-136 Laboratory Math for Biotechnology	1
10-007-103 Biotech. Lab. Skills for a Regulated Workplace	3
10-806-105 Bioprocess Technology	3
20-806-216 Chemistry for Biotechnology	3
Semester Total	11

SECOND YEAR Spring Semester	Credits
10-007-104 Chromatography Techniques	3
10-007-125 Research Methods in Molecular Biology	3
10-007-174 Applied Microbiology	4
Semester Total	10

THIRD YEAR Spring Semester	Credits
10-007-112 Biotech. Employment Skills	1
10-007-121 Applied Biochemistry	3
10-007-126 Occupational Work Experience	3
<u>10-809-195 Economics†</u>	<u>3</u>
Semester Total	10

Note:

Completion of the program requires a 3-credit elective. This elective can be taken any semester or during the summer.



Biotechnology Post-baccalaureate “Traditional” Certificate

Certificate Number: 90-007-1

Certificate

Biotechnology and Electron Microscopy Program Cluster
 School of Applied Science, Engineering, and Technology
 Courses offered at Madison Campus

For information call:
(608) 246-6800 or (800) 322-6282 Ext. 6800

About the Certificate

The certificate curriculum includes courses from the Biotechnology Lab Technician program. The curriculum may be completed in two semesters or longer. Students completing this certificate will have the laboratory skills and knowledge needed for entry-level employment in biotechnology laboratories in both the public and private sector. Students are required to meet with the program director for advising and course scheduling plans. This certificate is perfect for individuals who have a theoretical bioscience background but need biotechnology laboratory skills in order to improve employment prospects.

Admission Requirements

To review program admission requirements and application processing dates visit the programs website at:
<http://madisoncollege.edu/program-info/biotech-post-baccalaureate-certificate>.

Requirements for Completion

The certificate will be awarded upon completion of the requirements with a minimum of a 2.0 grade average and no course grade lower than a C. The certificate will be awarded when completion of all requirements is verified after the semester the last course has been completed.

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

In their first semester, all traditional post-baccalaureate participants must take 10-007-103 Biotechnology Laboratory Skills for a Regulated Workplace (3 credits)

Courses	Hrs/week	
	Credits	Lec-Lab
10-007-103 Biotech Lab Skills for a Regulated Workplace	3	1-6

In addition, participants choose a minimum of 12 additional credits from the following list:

Courses	Hrs/week	
	Credits	Lec-Lab
10-007-105 Bioprocess Technology	3	1-6
10-007-104 Chromatography Techniques	3	1-6
10-007-124 Molecular Biology 1.....	3	1-6
10-007-122 Protein Bioseparation Methods	3	1-6
10-007-123 Cell Culturing	3	1-6
10-007-174 Applied Microbiology	4	2-4
10-007-180 Intro to Bioinformatics	3	2-2
10-007-155 Quality Regulations and Standards for Biotechnology...2.....	2	2-0
10-102-134 Business Organization and Management	2	2-0
10-007-125 Research Methods in Molecular Biology*.....	3	1-6
10-007-116 Introduction to Human Stem Cell Methods (Lecture).....	1	1-0
10-107-118 Introduction to Human Stem Cell Concepts (Lab).....	3	0-6
10-107-117 Advanced Human Stem Cell Methods (Lecture).....	1	1-0
10-107-119 Advanced Human Stem Cell Concepts (Lab).....	3	0-6
	12	
Certificate Total	15	



Certificate Courses

10-07-103 Biotechnology Laboratory Skills for a Regulated Workplace 3 credits

Covers basic concepts and techniques necessary to work effectively in a biotechnology lab. The importance of quality regulations and standards and the role of the technician in producing quality results are emphasized. Laboratory math is introduced and applied. Students learn basic techniques including: measuring, weighing, mixing solutions, following and writing procedures, keeping records, making observations, and using instrument manuals and catalogues. Principles of metrology (measurement) are introduced and students practice using, calibrating, and verifying the performance of instruments. Team-based projects simulate the application of these methods in a biotechnology research and development environment.

10-07-104 Chromatography Techniques 3 credits

Introduces the basic concepts involved in separation of biomolecules. Students complete lab work using a variety of chromatographic methods including: paper, thin layer, gel permeation, gas and high performance liquid chromatography. Students also learn to interpret chromatographic results and practice documentation and reporting skills.

10-07-105 Bioprocess Technology 3 credits

Covers basic techniques of fermentation technology, including the principles of isolation, identification, improvement, preservation and growth of industrial microorganisms. Emphasizes the use of fermentation equipment to obtain products.

10-07-116 Introduction to Human Stem Cell Methods 3 credits

Covers the basic methods of working with mammalian cell culture, to include aseptic techniques, media preparation, passaging and maintenance of cell lines. Students will work with hESC cultures to thaw, plate, feed, passage cells, and generate embryoid bodies. Molecular characterization includes chromosomal staining and immunodetection and imaging of cell pluripotency markers. Instruction will include imaging, including light, fluorescence, and photomicroscopy. Using cultured cells in a regulated environment will be introduced. Prerequisites: 10-007-115 and 10-007-123; Co-requisite: 10-007-118, or consent of instructor.

10-07-117 Advanced Human Stem Cell Methods 3 credits

Students will continue to maintain and characterize the hESC embryoid bodies generated in Course I. Observations and relevance for spontaneous hESC differentiation will be discussed in detail. Methods for directed differentiation of hESC, iPSC, and adult stem cells into neurons and cardiomyocytes will be introduced. An emphasis on photo-documentation and assembly of a portfolio of results and observations will be submitted for evaluation. Prerequisite: 10-007-116.

10-07-118 Introduction to Human Stem Cell Concepts 1 credit

Provides a historical perspective on the identification and use of stem cells, emphasizing practical applications towards regenerative biology in research and industry. Review and discuss scientific articles that establish the foundation for working with stem cells for regenerative medicine, applied and basic research. Prerequisite: 10-007-115, or consent of instructor.

10-07-119 Advanced Human Stem Cell Concepts 1 credit

Introduction of emerging methodologies in the stem cell field, to include adult stem cells, iPSC technologies, relevant cell signaling pathways, and cell differentiation. Current research and industry applications will be discussed. Survey the scientific and popular press to introduce emerging themes and applications in the field of stem cells. Prerequisites: 10-007-115 and 10-007-118, or consent of instructor.

10-07-122 Protein Bioseparations Methods 3 credits

Introduces the strategies to purify proteins as part of a biotechnology process. Methods include: specific activity assays for enzymes, extraction of proteins from bacterial cells, salting out, dialysis, ion exchange chromatography and polyacrylamide gel electrophoresis.

10-07-123 Cell Culturing 3 credits

Covers the basic techniques of plant and animal cell culture. Plant unit includes media preparation isolation of explants and establishment of callus from suspension cultures, growth factor bioassays, regeneration of whole plants from tissue and plant genetic engineering techniques. Mammalian cell unit includes media preparation, maintenance of cultured cells, transfection of cultured cells, cloning, monoclonal antibody production, and ELISA assays.

10-07-124 Molecular Biology 1 3 credits

Introduces modern molecular biology techniques including basic recombinant DNA techniques and nucleic acid analysis and purification. The polymerase chain reaction, DNA sequence analysis, and DNA fingerprinting are also covered.

10-07-125 Research Methods in Molecular Biology 3 credits

Surveys advanced techniques in molecular biology including Southern analysis, and RNA purification and analysis. The course blends discussion of concepts with practical laboratory experience.

10-007-155 Quality Regulations and Standards 2 credits

Introduction to federal and local regulations that control biotechnology, pharmaceutical, and medical device companies. Includes cGMP, GLP, GCP, ISO 9000, and QSR. No lab.

10-007-174 Applied Microbiology 4 credits

Surveys the structure, function, ecology, nutrition, physiology, and genetics of microorganisms in industrial, agricultural, food and medical microbiology. Class also includes an introduction to standard techniques and procedures used in the microbiology laboratory.

10-007-180 Introduction to Bioinformatics 3 credits

Overview of computer-based methods of analyzing genetic and biological information. Includes sequence comparisons, data mining, computing tools, and using Perl for biological applications.

10-102-134 Business Organization and Management 2 credits

This survey course imparts an understanding of the economic and legal environment in which businesses operate, as well as an understanding of the organization and management of business enterprises. An emphasis is placed on business terminology and concepts. No lab.

Career Potential:

- **Research Scientists**
- **Entry Level Scientists**
- **Associate Scientists**
- **Process Scientists**
- **Laboratory Manager**
- **Quality Assurance**
- **Laboratory Supervisor**
- **Team Leader**

More detailed and updated information on this program may be available at: madisoncollege.edu. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

Madison Area Technical College provides equal opportunity in education and employment.

Note: Lab included unless otherwise noted.

Biotechnology Intensive Post-baccalaureate Certificate

Program Number: 90-007-2

Certificate

Biotechnology and Electron Microscopy Program Cluster

School of Applied Science, Engineering, and Technology

Courses offered at Madison Campus

For information call:

(608) 246-6800 or (800) 322-6282 Ext. 6800

About the Certificate

This certificate program was designed in collaboration with industry partners for individuals who already have a Bachelor's Degree in a biological science and want to improve their employability in the biotechnology industry. ***The intensive program is offered full-time, 8:30 – 2:30 daily, in the spring semester. It provides practical, advanced laboratory skills and an introduction to the business of biotechnology.***

Admission is competitive and participants must agree to participate fully in all activities and field trips. The curriculum is project-based and team oriented to simulate a biotechnology company environment. Each student will also complete an independent project that is presented in a poster fair to colleagues and potential employers.

Participants will learn:

- Basic lab skills for a regulated workplace
- The requirements of a cGMP/cGLP environment
- Recombinant DNA methodologies
- Mammalian cell culture (possibly including human embryonic stem cell lines)
- Bioseparations
- Bioinformatics (survey)
- Microarrays (survey)



Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

Courses	Hrs/week	
	Credits	Lec-Lab
10-007-103 Biotechnology Laboratory Skills for a Regulated Workplace	3	1-6
10-007-122 Protein Bioseparation Methods.....	3	1-6
10-007-123 Cell Culturing.....	3	1-6
10-007-124 Molecular Biology 1.....	3	1-6
10-007-136 Laboratory Math for Biotechnology.....	1	0-2
10-102-134 Business Organization and Management.....	2	2-0

Note: the classes need to be taken concurrently.

Admission Requirements

To review program admission requirements and application processing dates visit the programs website at: <http://madisoncollege.edu/program-info/biotech-post-baccalaureate-intensive-certificate>

Requirements for Completion

The certificate will be awarded upon completion of the requirements with a minimum of a 2.0 grade average and no course grade lower than a C. The certificate will be awarded when completion of all requirements is verified after the semester the last course has been completed.

Certificate Courses

**10-007-103 Biotechnology Laboratory Skills
for a Regulated Workplace 3 credits**

Covers basic concepts and techniques necessary to work effectively in a biotechnology lab. The importance of quality regulations and standards and the role of the technician in producing quality results is emphasized. Students learn basic techniques including: measuring, weighing, mixing solutions, following and writing procedures, keeping records, making observations, and using instrument manuals and catalogues. Principles of metrology (measurement) are introduced and students practice using, calibrating, and verifying the performance of instruments.

10-07-122 Protein Bioseparations Methods 3 credits

Introduces the strategies to purify proteins as part of a biotechnology process. Methods include: specific activity assays for enzymes, extraction of proteins from bacterial cells, salting out, dialysis, ion exchange chromatography and polyacrylamide gel electrophoresis.

10-07-123 Cell Culturing 3 credits

Covers the basic techniques of plant and animal cell culture. Plant unit includes media preparation isolation of explants and establishment of callus from suspension cultures, growth factor bioassays, regeneration of whole plants from tissue and plant genetic engineering techniques. Mammalian cell unit includes media preparation, maintenance of cultured cells, transfection of cultured cells, cloning, monoclonal antibody production, and ELISA assays.

10-07-124 Molecular Biology 1 3 credits

Introduces modern molecular biology techniques including basic recombinant DNA techniques and nucleic acid analysis and purification. The polymerase chain reaction, DNA sequence analysis, and DNA fingerprinting are also covered.

10-007-124 Molecular Biology 1 3 credits

Introduces modern molecular biology techniques including basic recombinant DNA techniques and nucleic acid analysis and purification. The polymerase chain reaction, DNA sequence analysis, and DNA fingerprinting are also covered.

10-007-136 Lab Math for Biotechnology 1 credit

Introduces mathematical tools that are used in the biotechnology laboratory. Students apply mathematical concepts to solve problems such as: calculating amounts of chemicals required to make solutions, graphing and interpreting data, and calibrating instruments. Basic statistical concepts may also be introduced.

10-103-134 Business Organization and Management 2 credits

This survey course imparts an understanding of the economic and legal environment in which businesses operate, as well as an understanding of the organization and management of business enterprises. An emphasis is placed on business terminology and concepts. No lab.

Career Potential:

- Research Scientist
- Entry Level Scientist
- Associate Scientist
- Process Scientist
- Laboratory Manager
- Quality Assurance
- Laboratory Supervisor
- Team Leader

More detailed and updated information on this program may be available at: madisoncollege.edu. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

Madison Area Technical College provides equal opportunity in education and employment.

Rev. 04/15

Business Management

Program Number: 10-102-3

Associate in Applied Science Degree

Accounting and Finance Program Cluster

School of Business and Applied Arts

Program offered at Madison, Portage, Reedsburg and Watertown Campuses

Most courses offered at Fort Atkinson Campus

For information call:

(608) 246-6003 or (800) 322-6282 Ext. 6003

About the Program

The Business Management program provides learners with foundational skills needed to operate, manage, or supervise a business. Graduates prepare to successfully meet the challenges and opportunities encountered in today's dynamic business environment. Learners develop competence in the business functions of planning, organizing, directing, and controlling.

Admissions Requirements

To review admissions program requirements and application processing dates visit the programs website at: <http://madisoncollege.edu/program-info/business-management>.

Graduation Requirement

Please note: A minimum grade of C is required for all technical studies courses in order to graduate.

Methods of Delivery

Traditional Semester Classes-provides students with regular semester-long classes on campus. Classes meet one or two times a week, including on line, hybrid, and traditional delivery. (Program Number 10-102-3)

Accelerated Delivery-reduces in-class time commitment by 50%. Classes meet one night each week. Students should plan to spend 10 – 15 hours per week studying outside of class. Completion of all program courses can be completed in 24 to 36 months. The accelerated delivery is designed specifically for working adults with a minimum of 3-5 years employment experience. (Program Number 10-102-3-AC)

Information about a Double Major with the Human Resource Management Program

Students admitted to the Business Management program may be able to complete the Human Resource Management program with one additional semester of study. (Additional course work may be needed if admitted prior to 2011.) Follow your Academic Requirements (advising) report for your specific requirements to graduate in any program.

Information about Transfer Options to Four-Year Partners

Students considering continuing at a four-year institution can find information about transfer agreements on the college's webpage Transfer Out and clicking Transfer Opportunities: <http://madisoncollege.edu/transfer-opportunities>. Students considering transferring to four-year programs should take courses starting with 20 vs. 10.

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

First Semester		Credits	Hrs/week Lec-Lab
10-101-111	Accounting 1-Principles.....	4	4-0
10-102-134	Business Organization, Management, and Ethics.....	3	3-0
10-801-195	Written Communication OR	3	3-0
20-801-201	English 1.....	(3)	3-0
10-804-144	Math of Finance.....	3	3-0
20-810-205	Small Group & Interpersonal Communications*.....	3	3-0
Semester Total		16	

Second Semester		Credits	Hrs/week Lec-Lab
10-101-118	Management Accounting.....	4	4-0
10-102-135	Project Management Fundamentals.....	3	3-0
10-103-133	Excel-Beginning.....	1	0.25-1.5
10-103-139	Excel-Intermediate.....	1	0.25-1.5
10-116-145	Introduction to Human Resources.....	3	3-0
10-801-198	Speech.....	3	3-0
10-809-199	Psychology of Human Relations OR	3	3-0
20-809-231	Intro to Psychology.....	(3)	3-0
Semester Total		18	

Third Semester		Credits	Hrs/week Lec-Lab
10-102-114	Business Communication.....	3	3-0
10-102-143	Management Techniques.....	3	3-0
10-116-168	Employment Law OR	3	3-0
	Concentration Course 1 (see list).....	(3)	3-0
10-114-126	Corporate Finance.....	3	3-0
10-809-195	Economics OR	3	3-0
20-809-211	Macro Economics*.....	(3)	3-0
Semester Total		15	

Fourth Semester		Credits	Hrs/week Lec-Lab
10-102-104	Business Statistics.....	3	3-0
10-102-132	Strategic Leadership**.....	3	3-0
10-102-133	Topics in Tactical Management**.....	3	3-0
10-104-102	Marketing Principles.....	3	3-0
10-801-197	Technical Reporting OR	3	3-0
20-801-202	English 2.....	(3)	3-0
	Elective OR	3	E
	Concentration Course 2 (see list).....	(3)	3-0
Semester Total		18	

*Other course may be selected and can be found on the Business Management website or in a student's advising report.

**Pre-requisite program courses are required.

Note: Students are placed in English or mathematics courses based on their scores on the COMPASS or ASSET test or on completion of the appropriate prerequisite.

Students should consult their Academic Requirements (advising report) through their student center for any course options (in lieu of) for the program requirements.

Please review course descriptions for any pre-requisites that individual courses may have and plan accordingly for sequencing of such courses.

See next page for courses related to business that may be taken in addition to requirements for increased knowledge and marketability.



Program Courses

10-101-111 Accounting 1–Principles 4 credits
 Introduction to the field of accounting. The accounting cycle of journalizing transactions, posting, adjusting and closing entries, as well as the preparation of accounting statements is emphasized for service industries and merchandising concerns. Details of accounting for cash and receivables are studied. An introduction to a computerized accounting system is also included. Prerequisite: strongly recommended completion of or concurrent enrollment in 10-804-144; otherwise, completion of Elementary Algebra, 10-834-110 or Basic Algebra, 74-854-793 or Math Concepts, 74-854-747 (or sufficient score on the COMPASS test).

10-101-118 Management Accounting 4 credits
 Emphasizes the managerial use of accounting reports, the problem-solving functions of accounting in relation to current planning and control, performance evaluation, long-range planning, budgets and cost-volume-profit relationships. Prerequisite: 10-101-111.

10-102-104 Business Statistics 3 credits
 Introduces the theory of and application to basic statistical methods. Emphasizes solving practical business problems. Topics include basic measures, probability, sampling and time series analysis. Prerequisite: 10-103-133 and recommend completion (grade of C or better) 10-804-144.

10-102-114 Business Communication 3 credits
 Primary focus is on developing advanced interpersonal communication skills. Topics include: effective listening, conveying ideas concisely and persuasively, and adapting one's communication style to best connect with others. Managerial applications are emphasized; examples include: successfully managing difficult ("crucial") conversations while avoiding destructive conflict, customer-facing interactions (such as complaints), business networking, negotiation tactics, and key employee interactions: performance reviews, setting SMART Goals, and disciplinary conversations. The course requires extensive "field work" to apply the concepts learned in class to the real world.

10-114-126 Corporate Finance 3 credits
 This intermediate-level course views finance from the perspective of the financial manager. Topics include techniques of financial analysis, forecasting and budgeting, operating and financial leverage, working capital management, the time value of money, cost of capital, long-term debt and stock financing, dividends and retained earnings. Students are expected to apply both principles of accounting and finance. Prerequisites: grade of C or better in 10-101-111 and 10-804-144.

10-102-132 Strategic Leadership 3 credits
 The capstone course for the Business Management Program. It is designed to integrate and enhance skills and behaviors learned throughout the curriculum. Students gain insights from key leadership experts related to leading oneself, others, and organizational change, and apply these insights through an In-Box simulation where they are responsible for all aspects of "turning around" a failing business. A computer business simulation, where students compete against each other, reinforces learnings from prior courses and enhances an overall business perspective. Course includes an exercise in deep self-reflection, designed to build student resolve and ability to be a "high-integrity" ethical leader.

10-102-133 Topics in Tactical Management 3 credits
 Topics in Tactical Management focuses on refining and building students' operational management skills. The use of data analysis and research tools to solve business problems and improve performance is emphasized. Students learn tools to "listen to the customer" and use data to recommend strategies and tactics to improve and exceed customer expectations. The course explores quality systems and continuous improvement tools including Lean, Six Sigma, ISO, CQI, with an emphasis on their application to improve business processes. Prerequisites: 10-102-134 and 10-102-143.

10-102-134 Business Organization, Management, and Ethics 3 credits
 This foundation course covers core concepts related to business strategy, marketing, operations and finance, as well as their interrelationships within an organization. Case studies and a computer business simulation are used to deepen student understanding. Corporate culture and the International dimension of business are also covered. An Ethics framework, which will be further explored in upper-level Program classes is introduced, along with a focus on the means businesses use to promote and enforce ethical behavior.

10-102-135 Project Management-Fundamentals 3 credits
 This is an introductory Project Management class which develops skills to manage a project from start to finish using the following project management skills: defining projects; planning projects; scheduling projects; monitoring and controlling projects; project closure; and leading projects. Emphasis will be placed on applying these fundamentals, as both a participant and project leader, in case studies and group projects, using worksheet templates, project software tools and Microsoft Project software. Skills covered include but are not limited to project charters, Gantt charts, critical paths, milestones, risk control and prioritization, project acceptance and closeout, teamwork and problem solving.

10-102-143 Management Techniques 3 credits
 This course focuses on the two keys to effective management: results and relationships, in the context of the traditional managerial elements of planning, organizing, directing and controlling. Students learn techniques for problem solving, critical thinking, decision-making, delegation, motivation, change management, and political savvy behavior, and apply these techniques through simulations, role-plays, and case studies. The course also emphasizes development of Emotional Intelligence ("EI"), including self-assessment, as well as learning and applying specific techniques to improve each element of EI.

10-103-133 Excel–Beginning 1 credit
 Introduction to Excel spreadsheet software. Create, edit, save, format, print, perform calculations, copy/move text and formulas, create charts, create complex formulas and expand use of functions. Prerequisite: competency in Windows Operating System.

10-103-139 Excel–Intermediate 1 credit
 Work with financial functions, data tables, amortization schedules, hyperlinks, lists, templates, and multiple worksheets and workbooks. Prerequisite: 10-103-133 or equivalent.

10-104-102 Marketing Principles 3 credits
 This foundation course introduces students to the marketing process and how it operates in today's dynamic organizations. The entire marketing mix is examined on a broad scale. Topics include: market segmentation and targeting strategies, market research, consumer behavior, product development, pricing policies, distribution, and an overview of promotion. This basic course provides a comprehensive overview of the exciting world of marketing.

10-116-145 Intro to Human Resources 3 credits
 Topics include: the nature of employee management, strategic human resource planning, equal employment opportunity, analyzing and staffing jobs, training and developing human resources.

10-116-168 Employment Law 3 credits
 Topics include: unemployment compensation laws; workers' compensation laws; hiring and firing practices; sexual harassment in the workplace; the Americans with Disabilities Act; and labor law basics under the National Labor Relations Act. Course examines current "black letter law" together with case decisions. Content is appropriate for persons whose career plans involve employee management.

Career Potential:

- **Manager**
- **Supervisor**
- **Management Trainee**
- **Manager Associate**
- **Operational Manger**
- **Industry Specialist**
- **Process Supervisor**
- **Coordinator**

With additional education and/or work experience, graduates may find employment as:

- **Personal Banker**
- **Logistics Coordinator**
- **Billing Specialist**
- **Owner/Entrepreneur**
- **Financial Specialist**
- **Investor**

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Business Plan Certificate

Program Number: 90-145-3

Certificate

Business and Marketing Program Cluster

School of Business and Applied Arts

Certificate offered at Madison Campuses

For information call:

(608) 246-6003 or (800) 322-6282 Ext. 6003

About the Certificate

The Business Plan Certificate combines the two small business planning courses, which are focused on creation of the marketing and financial plans for a small business venture; along with an intro to entrepreneurship course or internship course, depending on the needs of the individual student. There are no prerequisite courses for this certificate. Students are required to have basic computer skills.

Admission Requirements

To review program admission requirements and application processing dates visit the programs website at:

<http://madisoncollege.edu/program-info/business-plan-certificate>.

Requirements for Completion

The certificate will be awarded upon completion of the requirements with a minimum of a 2.0 grade average and no course grade lower than a C. The certificate will be awarded when completion of all requirements is verified after the semester the last course has been completed.

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

Courses	Credits	Hrs/week
		Lec/On the Job
10-145-102 Small Business Development.....	3.....	3-0
10-145-106 Small Business Marketing	3.....	3-0
10-145-108 Field Experience Seminar OR.....	2	1-12
10-145-117 <i>Introduction to Entrepreneurship</i>	(3).....	3-0
Total	8-9	



Courses

10-145-102 Small Business Development 3 credits

Provides an introduction to prospective small business owners to the principles involved in planning and operation. Attention is given to small business appraisal and opportunities. Emphasis will be placed on factors that contribute to a successful business operation.

10-145-106 Small Business Marketing 3 credits

Developing and refining the marketing and promotion plans for a small business. Topics for discussion include merchandise/service resources, budgeting, study of competition, market segmentation, pricing, promotion, non-media ways to get customers to come to your business, and strategic planning.

10-145-108 Field Experience Seminar 2 credits

Employment in an approved occupation related to the student's future business plans is a prerequisite. Reports and discussion in class are coordinated with student employment. Employee appraisal, evaluation and harmony on the job will also be topics of discussion. The course requires a minimum of 144 hours of employment.

10-145-117 Introduction to Entrepreneurship 3 credits

Dreaming of starting your own business? This course is designed to inspire and nurture the entrepreneurial spirit. Students will examine the entrepreneurial process and characteristics of successful entrepreneurs, how to identify and evaluate entrepreneurial opportunities, and the critical elements of an effective business plan -- including management, marketing, and financial data. So whether you dream of a new business, or have a plan that needs further development, this course can help you reach your goals.

More detailed and updated information on this program may be available at: madisoncollege.edu. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

Madison Area Technical College provides equal opportunity in education and employment.

Rev. 04/15

Business Software Applications Specialist

Program Number: 31-106-9

One-Year Technical Diploma

Business Technology Program Cluster

School of Business and Applied Arts

Program offered at Madison, Fort Atkinson, Reedsburg, and Watertown campuses; and completely online

For information call: (608) 246-6003 or (800) 322-6282 Ext. 6003

About the Program

The Business Software Applications Specialist Program gives the student an understanding of the general business activities required of office employees. Software skills, along with customer service and interpersonal skills are emphasized. To succeed as a Business Software Applications Specialist, students should have a mastery of software skills, a mastery of English fundamentals, enjoy working with people, enjoy problem solving, and be detail oriented. This program is also available completely online. In order to graduate from the program, students must receive a grade of C or higher in all program courses.

Graduates of this program typically earn \$1,800 per month.

Program Prerequisites

Before entering the Business Software Applications Specialist Program, students should have Intro to Keyboarding, 10-106-101, or the ability to verify keyboarding proficiency. Students not meeting this prerequisite may take Intro to Keyboarding during their first quarter of the program.

Note: It is vital that each program student has access to a computer. All Microsoft Office courses use the 2013 version.

Admission Requirements

To review program admission requirements and application processing dates, visit the program's website at:

<http://madisoncollege.edu/program-info/business-software-applications-specialist>

Earn your Business Software Applications Specialist degree completely online!

The benefits of completing a degree online include courses available 24 hours a day, seven days a week; an opportunity to choose your own study time within course guidelines; an ability to join in online discussions with professionals around the world and stay current with new business technology and trends. For more information about the online Business Software Applications Specialist degree program, contact the Business Technology office at (800) 322-6282 ext. 6003 or (608) 246-6003.

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

First Semester		Credits	Hrs/week Lec-Lab
10-103-165	Outlook.....	1	0.25-1.5
10-106-107	Business Document Applications	3	1-4
10-106-108	Proofreading/Editing	3	2-1
10-106-139	Keyboard Skillbuilding 1*.....	1	0.25-1.5
10-106-182	Information Technology Concepts.....	3	2-2
10-106-231	Business Presentations and Publications	3	1-4
10-801-195	Written Communication	3	3-0
Semester Total		17	
Second Semester		Credits	Hrs/week Lec-Lab
10-106-109	Business Spreadsheet Applications	3	1-4
10-106-133	Word Processing Applications	2	1-2
10-106-164	Customer Contact Skills	1	0.25-1.5
10-106-172	Administrative Office Management.....	2	1-2
10-106-190	Professional Development (Qtr 3)	1	0.25-1.5
10-106-194	Career Management (Qtr 4)	1	0.25-1.5
10-106-240	Business Information Management.....	3	1-4
10-804-123	Math with Business Applications	3	3-0
Semester Total		16	

* May receive advanced standing if able to verify keyboarding rate of 50 wpm.

All of the above credits also apply to the Administrative Professional Program.

Note: Students are assessed for correct placement in English or mathematics courses based on their scores on the COMPASS test or on completion of the appropriate prerequisite(s). Additionally, there may be courses in other subject areas that may use COMPASS scores as prerequisites when reading, writing, math, or critical thinking competencies are required.



Program Courses

10-103-165 Outlook 1 credit

Use Microsoft's messaging and personal information management program. Communicate by email; schedule appointments, meetings and events; manage the Inbox, contact lists, tasks and notes; track and archive messages; configure and customize Outlook; record journal entries; manage Outlook components; integrate Outlook with other Office programs.

10-106-107 Business Document Applications 3 credits

Emphasis is placed on learning to use word processing software to efficiently and effectively produce business documents. Students will apply skills to solve practical problems in a project-based format. Explore fundamentals and best practices in document creation, editing, formatting, collaboration, tables, mail merge, desktop publishing, themes, templates, forms, and macros. Recommended prerequisite: Windows competency, including solid file management skills

10-106-108 Proofreading/Editing 3 credits

Develop proofreading skills: punctuation, grammar, spelling and usage errors. Edit documents: appropriate content, conciseness, clarity, point of view.

10-106-109 Business Spreadsheet Applications 3 credits

Create professional data-driven spreadsheets utilizing Excel spreadsheet software and information from a variety of data sources. Create charts and complex formulas; utilize advanced functions and apply conditional formatting; develop an Excel application with data validation, sheet protection, and macros. Work with financial tools and functions; perform what-if analysis with Scenario Manager, Data Tables, Goal Seek and Solver. Recommended prerequisite: Windows competency, including solid file management skills.

10-106-133 Word Processing Applications 2 credits

Utilize word processing skills to format letters, memos, tables and reports. Develop workplace skills: proofreading and decision-making. Prerequisites: 10-106-107 (and 10-106-101, 10-106-139, or touch keyboarding skills).

10-106-139 Keyboard Skillbuilding 1 credit

Identify keyboarding weaknesses through diagnostic tests and analyses. Refine keyboarding technique, increase speed and improve accuracy through individualized corrective practice. Prerequisite: 10-106-101 or touch keyboarding experience which is defined as using the correct key reaches and not looking at the keys while typing at a minimum rate of 25 words per minute.

10-106-164 Customer Contact Skills 1 credit

Identify internal/external customers, develop verbal, nonverbal, and listening communication skills, develop problem-solving techniques, and ways of adding value to a customer interaction. Examine how technology impacts customer service, examine the impact on service breakdowns, and examine campaigns for customer loyal. Prerequisite: 10-106-101, or the ability to verify keyboarding proficiency.

10-106-172 Administrative Office Management 2 credits

This course emphasizes the skills necessary to succeed in a global business office environment of the 21st century. Topics include: teamwork and interpersonal skills, travel arrangements, meetings and minute taking, parliamentary procedure, management and leadership skills, cultural diversity, time, stress and anger management, and virtual assistance. Prerequisites: 10-106-107 and 10-106-231.

10-106-182 Information Technology Concepts 3 credits

Introduces students to computer terminology, basic functions of the computer processor, various types of computer memory, computer input/output devices, application software, system software, electronic communication devices, Internet searches, various communication methods including smart phones and social media, computer security concerns, and computer ethics.

10-106-190 Professional Development 1 credit

Using the internet and traditional methods, research the job market, develop a job search/career portfolio, explore networking, prepare for employment tests, and practice for job interviews. Create a professional image for job search. The portfolio includes but is not limited to a resume, cover letter, thank-you letter, reference sheet, job application form, and work samples. Prerequisite: 10-801-195; should be taken in the last semester of the program.

10-106-194 Career Management 1 credit

Identification of factors associated with job success: business ethics, conflict resolution, proper etiquette, harassment, performance appraisal, employee benefits and adopting change.

10-106-231 Business Presentations and Publications 3 credits

Create professional business presentations using PowerPoint and other presentation software. Explore best practices for designing and presenting. Work with graphics, slide master, sound, video, charts and tables. Add transitions, narration and animation to enhance your presentations. Explore desktop publishing using Publisher and other desktop publishing software. Apply basic design principles while creating flyers, newsletters, and brochures. Recommended prerequisite: Windows competency, including solid file management skills.

10-106-240 Business Information Management 3 credits

Concentrates on the fundamentals of managing the record life cycle; supplies and equipment; charge-out procedures; retention schedules; transfer methods; control measurements; imaging systems and information security. Incorporates database skills including how to plan, create, and manage data; modify a database structure; relate tables; find, filter, query and sort data; and create forms and reports. Recommended prerequisite: Windows competency, including solid file management skills.

Career Potential:

- Administrative Services Coordinator
- Customer Service Associate
- Office Assistant
- Program Assistant
- Receptionist-Data Entry
- Secretarial Assistant
- Word Processor

With advanced training graduates may find employment as:

- Administrative Professional
- Executive Assistant
- Executive Secretary
- Information Coordinator
- Office Manager

More detailed and updated information on this program may be available at: madisoncollege.edu. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

Madison Area Technical College provides equal opportunity in education and employment.

Cabinetmaking and Millwork

Program Number: 31-409-2

One-Year Technical Diploma

Construction Program Cluster

School of Applied Science, Engineering, and Technology

Courses offered at Madison Campuses

For information call:

(608) 246-6800 or (800) 322-6282 Ext. 6800

About the Program

The Cabinetmaking and Millwork program provides the student with the knowledge and skills necessary to plan and complete cabinetry, furniture and millwork projects. Students learn to work with prints, specifications and shop drawings. Emphasis is placed on selecting proper materials, determining the best procedures, manufacturing parts to specification and assembling and finishing individual projects.

In our well-equipped lab, students learn the fundamentals of working with wood, from planning a project to adding the finishing details. From traditional woodworking equipment and hand tools to the latest computer numerically controlled (CNC) machinery and software, students learn to plan and process wood in the most efficient manner.

Through partnerships with area businesses and local and state agencies, students gain practical experience on a variety of larger scale projects. Students work in teams to plan, estimate and execute these projects. Profits are used to fund scholarship opportunities for students in the program.

Admissions Requirements

To review admissions program requirements and application processing dates visit the programs website at: <http://madisoncollege.edu/program-info/cabinetmaking-and-millwork>.

Requirements for Graduation

Students must meet two 2.0 GPA requirements to graduate: 1) GPA for entire program must be 2.0 or above; 2) GPA of combined occupational courses (409) must be 2.0 or above.

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

		Hrs/week	
		Credits	Lec-Lab
First Semester			
31-409-330	Woodworking 1: Machinery & Methods*	5	4-16
31-409-331	Woodworking 2: Materials & Processes*	5	4-16
31-409-340	Tool & Machine Maintenance*	1	1-3
31-409-341	Wood Finishing 1*	1	1-3
31-409-385	Drawing	2	1-3
31-801-356	Communications 1	1	2-0
31-804-379	Vocational Mathematics 1	1	2-0
Second Semester			
31-409-332	Cabinetmaking, Millwork & Furniture 1*	5	4-16
31-409-333	Cabinetmaking, Millwork & Furniture 2*	5	4-16
31-409-337	Workplace Safety*	1	4-0
31-409-342	Countertops & Surfaces	2	1-3
31-409-345	Wood Finishing 2*	1	1-3
31-409-386	AutoCAD for Cabinet Drawing	2	2-2

*Meets for 9 weeks.

Notes:

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- Certain associate degree or higher post secondary courses specific to the curriculum

Note: Students are placed in English or mathematics courses based on their scores on the COMPASS or ASSET test or on completion of the appropriate prerequisite/s.



Program Courses

31-409-330 Woodworking 1: Machinery & Methods 5 credits

Introduces the learner to the operation of traditional woodworking equipment. Students perform numerous exercises to gain familiarity with portable power tools and industrial woodworking machinery while building their skills and familiarity with wood. Units include layout, sawing, surfacing, boring, sanding and assembly.

31-409-331 Woodworking 2: Materials and Processes 5 credits

Building on skills acquired in Woodworking 1, students incorporate an understanding of wood as a material to properly execute joinery and cabinetry projects. Instruction includes units in shaping, adhesives, joinery and face-frame cabinetry. Co-requisite: 31-409-330.

31-409-332 Cabinetmaking, Millwork & Furniture 1 5 credits

Planning and execution of cabinet, millwork and furniture projects are explored in this class. Standards for kitchen cabinetry and design are applied as students work together in teams on a group project. Additional areas of study include: jigs & fixtures, 32mm cabinetmaking and leg & rail furniture. Prerequisites: 31-409-330 and 31-409-330.

31-409-333 Cabinetmaking, Millwork & Furniture 2 5 credits

Preparation for employment is emphasized in the final quarter of this program as students propose and execute projects of their choice. Students have the opportunity to experience a real work environment while completing an internship with an area employer. Areas of exploration include veneering, CNC technology and curved and circular work. Co-requisite: 31-409-332.

31-409-337 Workplace Safety 1 credit

A safe working environment is not only essential, it is the law. This course covers several key areas of OSHA workplace safety, including: proper procedures for locking out and tagging equipment to be serviced, HASCOM (Hazardous Materials Communication), PPE (Personal Protective Equipment) and proper machine guarding. Co-requisite: 31-409-337.

31-409-340 Tool & Machine Maintenance 1 credit

Proper maintenance is essential in order to obtain accurate and repeatable results. This course focuses on keeping machinery in proper working order and maintaining sharp cutting tools. Students learn to troubleshoot problems and to establish routine maintenance procedures. Co-requisite: 31-409-330.

31-409-341 Wood Finishing 1 1 credit

Finishing is both an art and a science. This course demystifies the process of finishing wood and explores the materials used. Hand applied, brushed and sprayed finishes will be covered. Proper finish selection and safe use of finishes is emphasized. Co-requisite: 31-409-340.

31-409-342 Countertops and Surfaces 2 credits

This course introduces the student to the field of countertop fabrication. Students learn about selecting proper grades and textures of plastic laminate, types of adhesives, and methods of application to secure laminate. Students have the opportunity to experience Solid Surface (Corian) application techniques while producing their own countertop sample. Students also explore a wide range of materials used for surface treatments.

31-409-345 Wood Finishing 2 1 credit

Building upon principles covered in Wood Finishing 1, this course further explores the application of finishes, including wash coats, glazes and other multi-step finishes. In addition, this course will expose the learner to methods for color matching and repairing damaged finishes. Prerequisite: 31-409-341.

31-409-385 Drawing 2 credits

Drawing is essential for quickly and accurately communicating three-dimensional ideas. This class will introduce the learner to drawing as it relates to woodworking occupations. Areas of instruction include sketching techniques, orthographic and isometric projection, drafting, and an introduction to computer-aided drafting (CAD).

31-409-386 AutoCAD for Cabinet Drawing 2 credits

Expanding on concepts introduced in the first semester Drawing course, this class builds competence in using CAD as a tool to communicate. Kitchen planning and cabinet design are emphasized. Students learn to develop working drawings and details for cabinet, millwork and furniture projects. Prerequisite: 31-409-385.

Career Potential:

- Cabinetmaker
- Finish Carpenter
- Architectural Woodworker
- Finishing Specialist
- Fixtures Manufacturer
- CAD/CAM Operator

With additional education and/or work experience, graduates may find employment as:

- Master Carpenter
- Shop Supervisor
- Journey-Level Finish Carpenter

More detailed and updated information on this program may be available at: madisoncollege.edu. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

Madison Area Technical College provides equal opportunity in education and employment.

Civil Engineering Technology

Program Number: 10-607-1

Associate in Applied Science Degree

Applied Engineering Technologies Program Cluster
 School of Applied Science, Engineering, and Technology
 Program offered at Madison Campuses

For information call:
 (608) 246-6800 or (800) 322-6282 Ext. 6800

About the Program

This program trains technicians to assist civil engineers in planning, scheduling, designing, estimating, surveying and inspecting the construction of highways, bridges, buildings and other structures. Specific courses provide a student with the option for a career in land surveying.

Admission Requirements

To review program admission requirements and application processing dates visit the programs website at: <http://madisoncollege.edu/program-info/civil-engineering-technology>

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

		Credits	Hrs/week Lec-Lab
First Semester			
10-103-123	Windows 7	1	0.25-1.5
10-103-137	Word-Beginning	1	0.25-1.5
10-607-120	Methods in Civil Engineering.....	2	2-0
10-607-155	Survey 1.....	3	2-3
10-801-195	Written Communication	3	3-0
10-804-114	College Technical Math 1B.....	2	2-0
10-809-195	Economics	3	3-0
10-809-199	Psychology of Human Relations	3	3-0
Semester Total		18	

Second Semester			
10-103-133	Excel-Beginning.....	1	0.25-1.5
10-607-147	Civil Drawing 1.....	3	2-3
10-607-149	Aggregates and Concrete.....	2	1-3
10-607-156	Survey 2.....	3	2-3
10-607-193	Career Development	1	1-0
10-804-116	College Technical Math 2	4	4-0
10-806-154	General Physics.....	4	3-1
Semester Total		18	

Third Semester			
10-607-148	Civil Drawing 2.....	2	1-3
10-607-158	Survey 3.....	3	2-3
10-607-160	Soils	2	1-3
10-607-172	Stormwater Management	2	1.5-0.5
10-607-177	Legal Elements of Engineering	2	2-0
10-801-197	Technical Reporting.....	3	3-0
	Elective	3	E
Semester Total		17	

Fourth Semester			
10-607-133	Estimating	3	2-2
10-607-161	Project.....	3	1-6
10-607-171	Construction Materials.....	2	2-2
10-607-179	Introduction to GIS.....	2	1-1
10-607-182	Water Supply and Sewerage.....	2	3.3-2.25
	Elective	3	E
Semester Total		15	

Note: Students are assessed for correct placement in English or mathematics courses based on their scores on the COMPASS test or on completion of the appropriate prerequisite/s. Additionally, there may be courses in other subject areas that may use COMPASS scores as prerequisites when reading, writing, math, or critical thinking competencies are required.

Graduation Requirement

- Prerequisite courses require a grade of C or better.
- Minimum 2.0 (C) program (607 classes) grade point average.
- Minimum 2.0 (C) overall grade point average.



Program Courses

10-607-120 Methods in Civil Engineering 2 credits

An introductory engineering course that familiarizes students with the civil engineering and construction processes from project concept to completion. Provides new students opportunity to develop and improve their problem-solving skills and prepare for subsequent technical courses.

10-607-133 Estimating 3 credits

Stresses estimating for general civil engineering work. Covers the preparation of detailed estimates as prepared by contractors for bidding purposes, the general estimate as prepared by engineers, and approximate estimates. Areas covered: highways, water and sewer lines, bridges, culverts, streets and general construction grading. Prerequisite: 10-607-177, fourth-semester standing or consent of instructor.

10-607-147 Civil Drawing 1 3 credits

Emphasis on development of graphical communication. Begins with basic manual drafting skills including line work, lettering, drafting tools use and free hand sketching of construction details. Transition in the last half of the semester to a CAD-based environment stressing geometric construction principles and simple engineering drawings. Co-requisites: 10-607-156 and 10-103-123.

10-607-148 Civil Drawing 2 2 credits

Applications-oriented class with CAD emphasis. More complex drawing projects including mapping, roadway design elements and structural detail applications. Drawing organization and standards, data conversion and sharing, third-party add-ins. Prerequisites: 10-607-147 and 10-607-156.

10-607-149 Aggregates and Concrete 2 credits

Introduces the fundamental principles of aggregates, Portland cement concrete and bituminous concrete. Emphasizes standards-based sampling and testing in laboratory and field environments. Tests are performed according to standards set by the American Society for Testing and Materials (ASTM) and American Association of State Highway and Transportation Officials (AASHTO). Students communicate results in written reports. Prerequisites: 10-804-114 and 10-103-137.

10-607-155 Survey 1 3 credits

Basic measurement concepts, procedures, errors and computations underlying the technical aspects of surveying. Students use modern instrumentation to perform elevation, distance, and angular measurements. Coordinate geometry is introduced as a computational tool. Computations are done both manually and on computer using commercial software. Co-requisites: 10-804-114, 10-607-120 and 10-103-123.

10-607-156 Survey 2 3 credits

Principles, computations and field methods, from design to stakeout, involved in three-dimensional curvilinear survey applications. AASHTO and WisDOT vertical and horizontal alignment standards; geometric and volumetric calculations. Field work reflecting different construction surveys are performed utilizing modern instrumentation. Prerequisite: 10-607-155. Co-requisites: 10-607-147 and 10-804-116.

10-607-158 Survey 3 3 credits

Advanced concepts and procedures building on knowledge and skills attained in previous surveying classes. Concepts include geodetic applications, spatial reference systems, equipment adjustment, digital data collection and photogrammetry. Fieldwork includes total station calibration, control leveling, control network establishment and digital topographic data collection. Prerequisites: 10-607-156 and 10-607-147.

10-607-160 Soils 2 credits

Introduces the basic principles of soil mechanics and their application in engineering practice. Topics include soil composition and texture, subsurface investigation, classification, moisture-density relationships, permeability and seepage, consolidation, settlement, shear strength, lateral earth pressures, fundamentals of retaining structures, shallow and deep foundations, slope stability and erosion loss calculations. Prerequisites: 10-806-154 and 10-607-149; Corequisite: 10-801-197.

10-607-161 Project 3 credits

Project-driven course through which civil engineering technicians gain firsthand experience with design by developing plans, specifications and reports for a "real-world" project while working in a team environment. Students present written and oral reports to reinforce technical communication skills. Prerequisites: 10-607-148, 10-607-158 and 10-607-176; Co-requisite: 10-607-133.

10-607-171 Construction Materials 2 credits

Introduction to the design, specification and detailing of steel and reinforced concrete in typical civil engineering projects. Emphasis on infrastructural applications. Prerequisite: 10-607-160.

10-607-172 Stormwater Management 2 credits

Introduces principles involved in the design of storm sewer systems, culverts, and detention/retention basins. Covers the basic concepts of hydraulics and hydrology. Prerequisite: third semester standing.

10-607-177 Legal Elements of Engineering 2 credits

Emphasizes contract relationships. The first half of the semester is spent studying the elements of a valid contract along with a study of the court system. The remainder of the semester concentrates on specifications, contracting procedure and the relationship between the three main parties involved in a construction contract: owner, engineer and contractor. Other topics include professional liability, professional ethics, product liability, discharge and remedies for non-completion. Prerequisite: third-semester standing or consent of instructor.

10-607-182 Water Supply and Sewerage 2 credits

Provides the student with an understanding of the principles involved in design of municipal water supply, municipal sanitary sewerage, and private on-site waste treatment systems (POWTS). Prerequisites: 10-607-149 and 10-607-172.

10-607-179 Introduction to GIS 2 credits

Basic terminology and components of geographic information systems. Capturing and organizing spatial data; integrating graphic and tabular information. Using spatial relationships to answer geographic queries. Civil engineering applications of GIS technology. Prerequisite: 10-607-147, or consent of instructor

10-607-193 Career Development 1 credit

Prepares students for work in a professional engineering environment by providing them with a knowledge and understanding of themselves and others. This course also guides students through the etiquette required for success in the job market and assists them in assembling the materials and information necessary for effective job applications and interviews. Prerequisites: 10-801-151 and 10-607-120.

Recommended Elective

10-607-190 Special Problems 1 credit

Note: The following two elective courses allow students to meet educational requirements for land surveyor registration as defined in Chapter A-E 6.04 of the Wisconsin Administrative Code. Students interested in a career in Land Surveying should consider taking these courses:

- | | | |
|------------|------------------|-----------|
| 10-607-168 | Land Surveying 1 | 3 credits |
| 10-607-175 | Land Surveying 2 | 3 credits |

Career Potential:

- Construction Inspector
- Survey Technician
- Civil CAD Technician
- Materials Testing Technician

More detailed and updated information on this program may be available at: madisoncollege.edu. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

Madison Area Technical College provides equal opportunity in education and employment.

Rev. 02/15

Clinical Ophthalmic Assistant

Program Number: 90-516-1

Certificate

Health-Related Professions Program Cluster

School for Health Education

Program offered at Madison Campus

For information call: (608) 246-6065 or (608) 246-6472
(800) 322-6282 Ext. 6065 or 6472

About the Program

The Ophthalmic Assistant certificate expands the curriculum of the Optometric Technician Program. The Ophthalmic Assistant works under the supervision of an ophthalmologist. The curriculum of the certificate includes:

- Anatomical and functional measurements of the eye such as corneal thickness (pachymetry) and length of the eye (A-scan).
- Assisting in minor surgical procedures
- Caring for, maintaining, and sterilizing surgical instruments.
- Scribing for the doctor during eye examinations.
- Complex medical case history taking.
- Effect of systemic diseases on the eye.

An important aspect of the certificate is the clinical experience given to the student. The students will refine the skills learned by working directly with doctors and patients during an additional eight week clinical session.

Madison College is accredited for this certificate by the Commission on Accreditation of Ophthalmic Medical Programs (CoA-OMP). By receiving this certificate you are eligible to sit for the Certified Ophthalmic Assistant examination.

Admission Requirements

To review program admission requirements and application processing dates visit the programs website at: <http://madisoncollege.edu/program-info/clinical-ophthalmic-assistant-certificate>.

Program Requirements

- 1) Physical exam and completed History Form on file prior to beginning the second semester of classes; and 2) written proof of Adult and Child CPR certification prior to beginning the clinical affiliation.

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

First Semester		Credits	Hrs/week Lec-Lab
31-516-325	Optical Dispensing 1	3	3-2
31-516-301	Ophthalmic Pre-Testing.....	3	3-3
31-516-305	Basic Optical Concepts.....	3	3-2
31-516-315	Ocular Anatomy.....	2	3-1
31-516-339	Human Relations.....	1	2-0
Semester Total		12	

Second Semester		Credits	Hrs/week Lec-Lab
31-516-327	Clinical Ophthalmic Procedures.....	2	1-2
31-516-326	Optical Dispensing 2	2	2-2
31-516-330	Contact Lenses	3	3-2
31-516-335	Ophthalmic Specialty Testing.....	3	3-3
31-516-340	Patient Relations and Practice Management.....	2	3-0
31-516-345	Preclinical	2	0-4
31-516-350	Clinical Experience*	3	0-40
Semester Total		17	

Summer Session		Credits	Hrs/week Lec-Lab
31-516-351	Clinical Experience II**.....	3	0-270
Semester Total		3	

Courses in bold above (31-516-327 and 31-516-351) identify the two additional courses that are required in order to earn the certificate as a Clinical Ophthalmic Assistant.

*This portion of the Clinical experience lasts six weeks and begins on week 15 of the second semester of study

**This class must be taken in the summer session immediately following the second semester

Note: A copy of the essential functions necessary to successfully complete the program of study is available upon request from the division office.



Program Courses

31-516-301 Ophthalmic Pre-Testing 3 credits

Covers the history of optometry, relationships between optometry, ophthalmology and opticianry and various paraprofessional careers in vision care. The course involves the study of and practical experience in patient pre-testing such as case history, visual acuity, color vision, pupil evaluation and depth perception as well as the specialized testing procedures such as keratometry and blood pressure.

31-516-305 Basic Optical Concepts 3 credits

Covers the properties of light and the function of a lens in vision correction. Included is a review of basic math needed in vision care and the physiological aspects of vision. This course begins the study of the neutralization and verification of spectacle lens powers, to include spherical, cylindrical and prism lenses.

31-516-315 Ocular Anatomy 2 credits

Familiarizes the optometric technician with the form and function of the human eye. The foundation of the lecture material is the anatomy of the eye, but we will discuss the physiology and function of the eye as much as possible. We will also discuss the actions and uses of diagnostic pharmaceutical agents, as their function is based on interference with normal ocular physiology. This course also covers optometric terminology as well as prescription translation.

31-516-325 Optical Dispensing 1 3 credits

Covers frame definition, parts and types of frames, measurement of frames and lenses, alignment of frames, inserting and removing lenses, introduction to dispensing of eyewear and frame repairs. This is a hybrid course that meets weekly for 2 hours classroom, 2 hours lab and 1 hour online.

31-516-326 Optical Dispensing 2 2 credits

This course assists the student in developing a mastery of the alignment and adjustment of eyewear. It also covers the various lens materials, multifocal styles and lens tints. Prerequisites: 31-516-325 and 31-516-305.

31-516-327 Clinical Ophthalmic Procedures 2 credits

This course prepares the technician to assist the doctor in advanced office techniques in the area of ultrasound, in-office surgical procedures, case history and scribing. Students will also study various systemic diseases and their affect on the eye. The performance of various skills is emphasized in the laboratory sessions. Elective Course for the Optometric Technician Program, required for the Clinical Ophthalmic Assistant Certificate. Prerequisites: 31-516-315, 31-516-301, 31-516-305 and 31-543-355, or 10-501-153.

31-516-330 Contact Lenses 3 credits

Gives the student in-depth exposure to the technical aspects of clinical contact lens practice. Lecture and laboratory experiences emphasize lens verification, patient education and evaluation. Prerequisites: 31-516-301, 31-516-305, and 31-516-315.

31-516-335 Ophthalmic Specialty Testing 3 credits

Provides the student experience and knowledge in areas of special vision care procedures: subjective refraction, visual field testing, slit lamp, Goldmann and non-contact tonometry, basic concepts of orthoptics and the treatment of eye diseases including instillation of eye medications and eye patching. Patient instruction and assistance are emphasized in laboratory sessions. Prerequisites: 31-516-301, 31-516-305, and 31-516-315.

31-516-339 Human Relations 1 credit

Introduces students to their personal and vocational responsibilities as an optometric technician. The development of communication skills one needs as an optometric technician are introduced. The ethical and legal responsibilities of an optometric technician are defined. Time management techniques will be presented. Basic concepts of stress and how it affects behavior, and stress management are discussed. The course also covers writing a job application letter and resume as well as interview techniques. This is a hybrid course that meets weekly for 1 hour classroom and 1 hour online.

31-516-340 Patient Relations and Practice Management 2 credits

Provides a study of front office management techniques including telephone and appointment book management, filing, recall systems, bookkeeping and insurance claim processing. This is a hybrid course that meets weekly for 2 hours classroom and 1 hour online.

31-516-345 Preclinical 2 credits

Prepares students for clinical affiliation by having them complete vision screenings on patients from the college. Class discussions are held analyzing the results of the screening as well as the students' performance. Prerequisites: 31-516-301, 31-516-305, and enrollment in 31-516-335.

31-516-350 Clinical Experience 3 credits

Students participate 40 hours per week for six weeks of assigned clinical experience in an optometric or clinic setting. The student is expected to achieve specific educational objectives determined for this experience. Prerequisite: satisfactory completion of all first-semester courses plus enrollment in second-semester courses.

31-516-351 Clinical Experience II 3 credits

Students participate 34 hours per week for eight weeks of assigned clinical experience in an ophthalmic clinic setting. The student is expected to achieve specific educational objectives determined for this experience. Prerequisite: satisfactory completion of all courses (first and second semester).

Career Potential:

- **Ophthalmic Assistant**
- **Optometric Technician**
Person assists an optometrist or ophthalmologist in the delivery of eye care. Duties may include preliminary testing procedures, dispensing of glasses and contact lenses and front office management.
- **Dispensing Optician**
This person specializes in the fitting and dispensing of eyewear. They may be employed by an eye clinic, optometrist, ophthalmologist or own their own optical dispensary.
- **Contact Lens Technician**
Duties may include the ordering, verification and dispensing of contact lenses. The contact lens technician may also assist the doctor in chair side techniques of fitting contact lenses.

More detailed and updated information on this program may be available at: madisoncollege.edu. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

Madison Area Technical College provides equal opportunity in education and employment.

CNC Specialist Certificate

Program Number: 90-420-1

Certificate

Manufacturing Program Cluster

School of Applied Science, Engineering, and Technology

Program offered at Madison Campuses

For information call:

(608) 246-6800 or (800) 322-6282 Ext. 6800

About the Certificate

Madison Area Technical College is now offering a Computer Numerical Control (CNC) Specialist certificate. This certificate is perfect for the student who already has manual machining skills, the ability to perform shop measurements and the ability to read prints. Four thousand (4,000) hours of industrial machining experience is required.

Admissions Requirements

To review admissions program requirements and application processing dates visit the programs website at: <http://madisoncollege.edu/program-info/cnc-specialist-certificate>.

Unique Requirements for Completion

The certificate will be awarded upon completion of the requirements with a minimum of a 2.0 grade average. The certificate will be awarded when completion of all requirements is verified after the semester the last course has been completed.

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

First Semester		Credits	Hrs/week Lec-Lab
32-420-346	Intro to CNC – G-code Programming ^o	2	3-1
32-420-337	Manufacturing w/Solid Modeling - 2D ^d	2	4-0
32-420-348	Applied CNC - Conversational & Setup ^d	2	1-3
32-420-336	Manufacturing w/Solid Modeling – 3D ^o	2	4-0
32-420-389	Applied CNC - Intermediate Operations ^o	2	1-3
32-420-370	Manufacturing w/Solid Modeling - Advanced ^d	1	2-0
32-420-391	Applied CNC - Advanced Operations ^d	1	0-2
Total		12	

^o Fall course offering

^d Spring course offering

Note:

Courses are listed in suggested sequence. Enrollment for courses adhere to course prerequisites and co-requisites as indicated at the end of each course description.

Career Potential:

- CNC Machinist
- CNC Programmer
- Prototype Machinist
- CNC Set-Up
- CNC Coordinator
- CNC Lead Worker
- CNC Apprentice

More detailed and updated information on this program may be available at: madisoncollege.edu. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

Madison Area Technical College provides equal opportunity in education and employment.

Rev. 04/15

Courses

32-420-336 Manufacturing w/Solid Modeling--3D 2 credits

This course builds on the concepts learned in Manufacturing w/Solid Modeling-2D. Learners will utilize Solid Modeling software and CAM software to create true 3D models with surfacing concepts. Students will gain competency in file management by saving, converting, and working with different file types. Learners will create geometry in each application and convert files between CAD and CAM. Students will apply various tool paths theories to the designs they have created. Such theories include Surfacing, High Speed Machining, Hard Milling/Turning, 2 and 4 Axis Wire, Live lathe tooling and 4 Axis milling. Prerequisites: 32-420-337, 32-420-346, 32-420-389; Co-requisite: 32-420-391.

32-420-337 Manufacturing w/Solid Modeling--2D 2 credits

This course offers instruction on individual computer workstations in a computer lab. This computer-aided drafting (CAD) instruction uses Solid Modeling software that is capable of creating 3D models and manufacturing drawings. In this course you will spend half of the time creating 3D models using 2 and 2.5D features while exploring the concepts of working in 3D space. Once the solid models are created students will import the solid models into CAM (Computer-aided manufacturing) software and utilize machining concepts to produce manufactured part using 2.5D programming methods such as pocketing, contouring & drilling for milling machines as well as turning, facing, grooving and threading for turning centers.

32-420-346 Intro to CNC --G-code Programming 2 credits

Hands-on and lecture course exposing students to CNC (Computer Numerical Control). Emphasizes CNC vertical milling machines and CNC turning centers. Covers history, basic CNC understanding and beginning programming including G-codes, and M-codes. Students will utilize simulation software that will verify manually written code.

32-420-348 Applied CNC -- Conversational and Setup 2 credits

This introductory Applications class familiarizes students with the basic setup procedures of CNC milling machines and CNC turning centers. They will set up rough stock and execute existing programs to produce finished parts. Once students learn these concepts they utilize the conversational programming software on the various CNC machines to program and produce parts.

32-420-370 Manufacturing w/Solid Modeling--Advanced 1 credit

The advanced course requires students to draw complex solid models utilizing CAD software. These Models will then be imported into CAM software to use advanced programming methods to produce high quality parts. Mill Programming will include 2D, 2.5D, 3D, 4-Axis and an introduction to 5 Axis and 3+2 techniques. Lathe programming will include advanced turning and live tooling. Prerequisites: 32-420-337, 32-420-336, 32-420-346, and 32-420-348; Co-requisite: 32-420-391.

32-420-389 Applied CNC -- Intermediate Operations 2 credits

This applications class builds on CNC concepts learned in previous classes. Emphasis is on CNC Turning Center, CNC Milling machine, and CNC Wire set up and operation. Students will produce parts that they have modeled and programmed in Manufacturing w/Solid Modeling 1 and 2 as well as instructor provided programs. Prerequisites: 32-420-337, 32-420-346, and 32-420-348; Co-requisite: 32-420-336.

32-420-391 Applied CNC -- Advanced Operations 1 credit

Our most advanced CNC applications course devoted to machining complex toolpaths, including mold cavities and graphite electrodes. Stresses hands-on instruction and operation of CNC turning centers, vertical milling machines, and machining centers. Prerequisites: 32-420-337, 32-420-336, 32-420-346, and 32-420-348; Co-requisite: 32-420-370.

Construction and Remodeling

Program Number: 31-410-6

One-Year Technical Diploma

Construction Program Cluster

School of Applied Science, Engineering, and Technology

Program offered at Madison Campuses

For information call:

(608) 246-6800 or (800) 322-6282 Ext. 6800

About the Program

The Construction and Remodeling Program prepares students for a career in residential construction and/or remodeling. Through intensively hands-on coursework students learn how to take a project from prints and specifications through final finish work. They will learn about site preparation, layout and foundations. In a semester long hands-on course students frame floors, walls, ceilings and roofs. In another course devoted to learning by doing students install roof shingles, windows, doors, stairs, exterior trim, siding, cabinets and interior trim. All phases of home construction are covered, including materials estimating, building science, building codes and tool maintenance.

Admissions Requirements

To review admissions program requirements and application processing dates visit the programs website at:

<http://madisoncollege.edu/program-info/construction-and-remodeling>

Requirements for Graduation

Students must meet two 2.0 GPA requirements to graduate: 1) GPA for entire program must be 2.0 or above; 2) GPA of combined occupational courses (410) must be 2.0 or above.

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

		Credits	Hrs/week Lec-Lab
First Semester			
31-410-301	Introduction to Construction	5	2-8
31-410-302	Plans, Site- and Formwork.....	2	2-2
31-410-337	Workplace Safety*	1	4-0
31-410-399	Fundamentals of Construction	3	1-5
31-410-328	Construction & Remodeling Techniques 1.....	5	2-8
10-890-100	College Success*	1	2-0
31-804-379	Vocational Math 1.....	1	2-0
Semester Total		18	
Second Semester			
31-410-308	Codes and Regulations.....	2	2-2
31-410-329	Construction & Remodeling Techniques 2.....	5	2-8
31-410-335	Intermediate Carpentry Lab	2	1-3
31-410-345	Construction Materials and Estimating	2	2-2
31-410-385	Construction Drawing	2	2-2
31-410-363	Construction Science	2	1-3
31-801-356	Communications 1*	1	2-0
Semester Total		16	

*Meets for 9 weeks.

Notes:

- Safety procedures required in all labs.
- Prerequisites can be waived with center approval.
- Advanced standing may be gained through center dean.
- Certain associate degree or higher post secondary courses specific to the curriculum may substitute for courses upon approval of center dean.

Note: Students are placed in English or mathematics courses based on their scores on the COMPASS or ASSET test or on completion of the appropriate prerequisite/s.



Program Courses

31-403-308 Codes and Regulations 2 credits

Units of instruction include zoning requirements, residential and commercial building codes, sanitary regulations, permit applications, building permits and inspection procedures. Contract documents and office practice are also discussed.

31-410-301 Introduction to Construction 5 credits

This course provides instruction in the fundamentals of floor, wall, ceiling and roof framing. A variety of building methods are discussed in the context of current understanding of how buildings work and why they fail.

Co-requisites: 31-410-399 and 31-410-337.

31-410-302 Plans, Site- and Formwork 2 credits

This course provides instruction in interpretation of plans, specifications and building codes, site preparation, the layout of footings and foundations and setting concrete forms.

Co-requisite: 31-410-301.

31-410-328 Construction and Remodeling Techniques 1 5 credits

This course continues instruction on roof framing and introduces installation methods for roof shingles, windows and doors, soffits and fascia, exterior trim and siding. Basic stair construction is also included. Building science topics of insulation, drainage planes and greener building techniques are also discussed. Prerequisite: 31-410-337.

31-410-329 Construction and Remodeling Techniques 2 5 credits

This course emphasizes interior finish including, but not necessarily limited to, installing wall board, hanging interior doors, installing interior trim, installing kitchen and bathroom cabinets, and completing a punch list.

Prerequisite: 31-410-310; Co-requisite: 31-410-328.

31-410-335 Intermediate Carpentry Lab 2 credits

Students will practice carpentry skills learned in Introduction to Construction and Construction and Remodeling Techniques 1. They will continue to work, under faculty supervision, on the sheds and the home that they began in the fall semester. They may also complete a small remodeling project. Carpentry tasks will include framing, roofing, window and door installation and exterior finishing. Students who successfully complete this practicum with a grade of B or better will receive an additional Golden Hammer credential upon graduation.

Prerequisites: 31-410-301 and 31-410-328.

31-410-337 Workplace Safety 1 credit

This course will cover several key areas of OSHA workplace safety, including: erection of ladders and scaffolds, HASCOM (Hazardous Materials Communication), selection and use of PPE (Personal Protective Equipment), proper machined guarding, and prevention of slips, trips and falls.

31-410-345 Construction Materials and Estimating 2 credits

The costs and applications of various building materials used in residential construction are explored. Instruction includes plan reading for the purpose of preparing material takeoffs and calculating costs. Estimating using computer software is introduced. Prerequisite: 31-410-301, or consent of instructor.

31-410-363 Construction Science 2 credits

Units of instruction include the mechanical properties of building materials, the building envelope, the house as a system, water and moisture management and green building materials and methods. Prerequisite: 31-410-301, or consent of instructor.

31-410-385 Construction Drawing 2 credits

This course introduces drawing and estimating as they relate to construction occupations. Areas of drawing instruction include sketching techniques, orthographic projection and isometric, oblique and perspective drawings. Methods of estimating materials and construction costs, reading prints and interpreting drawings are included.

31-410-399 Fundamentals of Construction 3 credits

This course provides an introduction to the identification, safe use and care of hand and portable power tools. Lab work includes the construction of sawhorses using techniques learned in class. Prerequisite: 31-410-337.

Career Potential:

- Rough/Finish Carpenter
- Remodeler
- Product Sales Representative
- Estimator

With additional education and/or work experience, graduates may find employment as:

- Master Carpenter
- Supervisor
- Head Estimator
- Teacher
- Inspector

More detailed and updated information on this program may be available at: madisoncollege.edu. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

Madison Area Technical College provides equal opportunity in education and employment.

Cosmetology

Program Number: 31-502-1

One-Year Technical Diploma

Hospitality Program Cluster

School of Business and Applied Arts

Program offered at Downtown Education Center, Madison

For information call:

(608) 246-6003 or (800) 322-6282 Ext. 6003

About the Program

Graduates receive training in all subjects relating to cosmetology. A pre-requisite class, Making the Cut, is required prior to enrollment.

Please note: Students are required to purchase a supply kit early in the first semester of classes. The kit includes all equipment and supplies needed to complete this program. Approximate cost of the supply kit is \$2,400.

Admission Requirements

To review program admission requirements and application processing dates visit the program website at:

<http://madisoncollege.edu/program-info/cosmetology>

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2014-2015 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

		Credits	Hrs/week Lec-Lab
Prior to start of program			
31-502-330	Making the Cut.....	1	1-0
First Semester			
31-502-321	Cosmetology Techniques 1.....	3	0-8
31-502-322	Cosmetology Techniques 2.....	2	0-6
31-502-340	Cosmetology Theory 1.....	5	10-0
31-502-341	Cosmetology Theory 2.....	5	10-0
31-502-392	Cosmetology Sales and Advertising 1.....	1	2-0
10-145-189	Customer Relations.....	2	2-0
Second Semester			
31-502-323	Cosmetology Techniques 3.....	4	0-6
31-502-324	Cosmetology Techniques 4.....	4	0-6
31-502-325	Cosmetology Techniques 5.....	3	0-10
31-502-326	Cosmetology Techniques 6.....	3	0-8
31-502-342	Cosmetology Theory 3.....	2	4-0
31-502-393	Cosmetology Sales and Advertising 2.....	1	2-0
Summer Semester			
31-502-327	Cosmetology Techniques 7.....	4	0-10
31-502-328	Cosmetology Techniques 8.....	4	0-8
31-502-343	Cosmetology Theory 4.....	3	6-0
31-502-395	State Board Review.....	1	2-0
Semester Total		12	

Program Courses

31-502-330 Making the Cut 1 credit

This valuable course is mandatory for students considering the Cosmetology profession prior to enrollment in the program. Students are introduced to this dynamic industry, receive an orientation to the program competencies, format and instructors, and are assessed on their preparedness, skills and abilities to ensure an educational match and increase the chance of successful program completion and transition to the exciting world of Cosmetology. Upon successful completion of this course, accepted students will be enrolled in the Cosmetology Academy.

31-502-321 Cosmetology Techniques 1 3 credits

Introduces various services performed by the cosmetologist. Emphasis is on hair analysis, shampooing, basic permanent waving and haircutting techniques, scalp and hair conditioning treatments, and introductory hair styling services. Students spend the first part of the semester working on manikins and each other. During the second part of the semester, students develop skills through instruction in the salon while working on clients. Prerequisite: 31-502-340; Co-requisites: 31-502-392 and 31-502-341.

31-502-322 Cosmetology Techniques 2 2 credits

A continuation of 31-502-321, this course emphasizes the development of advanced techniques in hair cutting, styling and permanent waving. This course also introduces the hands on application of various hair coloring techniques, chemical relaxing, manicuring, pedicuring and facial services. Students continue to work on clients with instruction and guidance. Prerequisites: 31-502-321 and 31-502-340; Co-requisites: 31-502-392 and 31-502-341.

31-502-323 Cosmetology Techniques 3 4 credits

Emphasizes advanced training in the techniques presented in 31-502-321 and 31-502-322. Students continue to work on clients to further develop skills to prepare them for entering the job market and passing the state examination. Prerequisite: all first semester courses.

31-502-324 Cosmetology Techniques 4 4 credits

Continuation of 31-502-323. Prerequisite: all first semester courses.

31-502-325 Cosmetology Techniques 5 3 credits

Continuation of 31-502-324. Prerequisite: all first semester courses.

31-502-326 Cosmetology Techniques 6 3 credits

Continuation of 31-502-325. Prerequisite: all first semester courses.

31-502-327 Cosmetology Techniques 7 4 credits

Continuation of 31-502-326. Prerequisite: all first and second semester courses.

31-502-328 Cosmetology Techniques 8 4 credits

Continuation of 31-502-326. Prerequisite: all first and second semester courses.

31-502-340 Cosmetology Theory 1 5 credits

Students study the theory related to introductory salon services such as professional image, hair cutting and product knowledge. Included are terminology, care and proper usage. Students study bacteriology, decontamination and first aid procedures, trichology, and the basic theory of shampooing and conditioning hair. Basic permanent waving, hair design, and hairstyling services are also included. Co-requisite: 31-502-392.

31-502-341 Cosmetology Theory 2 5 credits

This course includes the anatomy and physiology of the skin and nails, manicuring, pedicuring, skin care and facial services. Advanced hair styling and chemical relaxing are included. Theories of hair coloring and hair cutting methods are continued. This course also covers the history of the industry and related governing laws. Prerequisite: 31-502-340; Co-requisites: 31-502-321, 31-502-322, and 31-502-392.

31-502-342 Cosmetology Theory 3 2 credits

Presents advanced techniques and industry trends as determined by the instructors, including advanced hair coloring techniques. Electricity as it relates to the salon is included. Preparation for taking the State Board exam begins. Prerequisite: all first semester courses.

31-502-343 Cosmetology Theory 4 3 credits

Theories of hair coloring and hair cutting methods are continued. Prerequisites: all first semester courses and 31-502-342.

31-502-392 Cosmetology Sales and Advertising 1 1 credit

Introductory sales course stressing the proper application of sales techniques to skilled occupations. The sales and advertising techniques as applied to job disciplines are designed not only to create greater efficiency on the job, but also to improve working relationships with fellow employees and customers. Includes the application of sales approach, demonstration and close.

31-502-393 Cosmetology Sales and Advertising 2 1 credit

Students learn to recognize different types of salons and the opportunities each has to offer. Students also learn to identify and overcome obstacles that they may encounter. Students gain a firm grasp of duties of a salon employee. Prerequisite: 31-502-392.

31-502-395 State Board Review 1 credit

Prepares students to the State Board exam.

10-145-189 Customer Relations 2 credits

Students learn personal growth through the development of customer relations skills within areas of personal life, community and the workplace.

Career Potential:

- Barber
- Cosmetologist
- Distribution Sales
- Educational Director for a Salon or Manufacturer
- Esthetician
- Hair Color Technician
- Hair Design
- Hair/Make-up Stylist for theater, film, fashion industry or photography
- Hair-Replacement Specialist
- Make-up Artist
- Manufacturer's Representative
- Men's Hair Stylist
- Nail Technician
- Pedicurist
- Perm Technician
- Salon Coordinator
- State Inspector/Examiner

With additional education and/or work experience, graduates may find employment as:

- Salon/Spa Manager
- Barber/Cosmetology Instructor
- Beauty Editor
- Industry Feature Writer

More detailed and updated information on this program may be available at: madisoncollege.edu. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

Madison Area Technical College provides equal opportunity in education and employment.

Court Reporting

Program Number: 10-170-2

Associate in Applied Science Degree

Business Technology Program Cluster

School of Business and Applied Arts

Program offered at Madison Campuses

For information call:
(608) 246-6003 or (800) 322-6282 Ext. 6003

About the Program

Court Reporting is an I. T. profession with possibilities:

- Judicial Reporters serve the legal community in the courtroom, depositions, business meetings, and conferences;
- Broadcast Captioners are realtime reporters who provide captioning for live television broadcasts of news, sporting events, emergency broadcasts, and a host of others;
- CART (Communication Access Realtime Translation) Providers are realtime reporters who provide personalized services for the deaf and hard-of-hearing communities as well as people learning English as a second language;
- Webcasting and Internet Information Reporters capture business meetings in realtime via online services.

Our program is accredited through the National Court Reporters Association (NCRA).

Admission Requirements

To review program admission requirements and application processing dates visit the program's website at:

<http://madisoncollege.edu/program-info/court-reporting>.

Program Entrance Requirements

Orientation is mandatory for all new students. All new students must purchase or rent a realtime-ready student stenewriter before beginning class. Online students must purchase access to specialty software to use when writing realtime prior to starting the program.

Unique Requirements for Graduation

Graduation from the program requires the following machine shorthand writing speeds: two-voice, 225 wpm; jury charge, 200 wpm; literary, 180 wpm (five-minute takes with 95 percent accuracy—three in each category). The 50-hour requirement for internship will consist of a minimum of 40 hours of actual writing time under the supervision of a qualified reporter.

Program Courses

10-102-160 Business Law 1 **3 credits**
This survey course covers legal principles used in the business world. Major emphasis is placed on contracts along with torts, federal and state courts, criminal law, marital property and bankruptcy and wills. The course is taught on a level suitable for an associate degree student. Federal, state and case law serve as the basis of study.

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

		Credits	Hrs/week Lec-Lab
First Semester			
10-102-160	Business Law 1.....	3	3-0
10-170-111	Court Reporting 1.....	4	2-4
10-170-121	CAT Class 1.....	1	1-0.5
10-170-131	English for Realtime Reporters 1.....	1	1-0.5
10-804-123	Math with Business Applications.....	3	3-0
	Semester Total	12	
Second Semester			
10-170-112	Court Reporting 2.....	4	2-4
10-170-122	CAT Class 2.....	1	1-0.5
10-170-132	English for Realtime Reporters 2.....	1	1-0.5
10-501-101	Medical Terminology.....	3	3-0
10-809-197	Contemporary American Society.....	3	3-0
	Semester Total	12	
Third Semester (summer)			
10-170-113	Court Reporting 3.....	4	2-4
10-809-172	Intro to Diversity Studies.....	3	3-0
	Semester Total	7	
Fourth Semester			
10-170-114	Court Reporting 4.....	4	2-4
10-170-124	CAT Class 4.....	1	0.5-1
10-170-134	English for Realtime Reporters 4.....	1	0.5-1
10-801-195	Written Communication.....	3	3-0
10-809-199	Psychology of Human Relations.....	3	3-0
	Semester Total	12	
Fifth Semester			
10-170-115	Court Reporting 5.....	4	2-4
10-170-125	CAT Class 5.....	1	0.5-1
10-170-135	English for Realtime Reporters 5.....	1	0.5-1
10-801-196	Oral/Interpersonal Communication.....	3	3-0
10-809-195	Economics.....	3	3-0
	Semester Total	12	
Sixth Semester (summer)			
10-170-116	Court Reporting 6.....	4	2-4
10-170-170	Court Reporting Procedures.....	3	3-0
10-170-171	Legal Terminology.....	2	2-0
10-170-172	Court Reporting Internship.....	3	0-12
	Semester Total	12	

Note:

- **All 10-170 curriculum classes are stacked and open for enrollment every semester.**
- **Students are assessed for correct placement in English or mathematics courses based on their scores on the COMPASS test or on completion of the appropriate prerequisite(s). Additionally, there may be courses in other subject areas that may use COMPASS scores as prerequisites when reading, writing, math, or critical thinking competencies are required.**



Program Courses (continued)

10-170-111 Court Reporting 1 4 credits

Prepares the learners to use machine shorthand (StenEd Computer Compatible Theory) to write consonants, vowels, numbers, multi-syllabic words, multi-consonant words, punctuation, and special symbols, short forms and phrases, words in their singular and plural forms, and prefixes and suffixes. Co-requisites: 10-170-121, 10-170-131.

10-170-112 Court Reporting 2 4 credits

Continuation of machine shorthand covering theory, keyboard, and phonetics necessary to write and read conflict-free computer shorthand. Introduces speed building while focusing on accuracy in writing, transcribing, and readback of shorthand notes. Includes vocabulary development. Co-requisites: 10-170-112, 10-170-132.

10-170-113 Court Reporting 3 4 credits

Continuation of machine shorthand covering theory, keyboard, and phonetics necessary to write and read conflict-free computer shorthand. Introduces speed building while focusing on accuracy in writing, transcribing, and readback of shorthand notes. Includes vocabulary development. Prerequisite: 10-170-112.

10-170-114 Court Reporting 4 4 credits

Continuation of machine shorthand covering theory, keyboard, and phonetics necessary to write and read conflict-free computer shorthand. Introduces speed building while focusing on accuracy in writing, transcribing, and readback of shorthand notes. Includes vocabulary development. Prerequisite: 10-170-113; Co-requisites: 10-170-124, 10-170-134.

10-170-115 Court Reporting 5 4 credits

Continues speedbuilding and vocabulary expansion for writing and transcribing material from legal proceedings (testimony, jury charges, voir dire, expert witnesses, depositions, and opening/closing statements) and technical areas (testimony, literary, congressional, scientific, and medical). Stresses fluent and accurate readback. Prerequisite: 10-170-114; Co-requisites: 10-170-125, 10-170-135.

10-170-116 Court Reporting 6 4 credits

Continues speedbuilding and vocabulary expansion for writing and transcribing material from legal proceedings (testimony, jury charges, voir dire, expert witnesses, depositions, and opening/closing statements) and technical areas (testimony, literary, congressional, scientific, and medical). Stresses fluent and accurate readback. Prerequisite: 10-170-115; Co-requisites: 10-170-170, 10-170-171, 10-170-172.

10-170-121 CAT Class 1 1 credit

Technology course for Court Reporting program that focuses on computer basics and transcript production, dictionary management, realtime translation, and reporter technology utilizing Case CATalyst software from Stenograph, LLC. Co-requisites: 10170111, 10170131.

10-170-122 CAT Class 2 1 credit

Technology course for Court Reporting program that focuses on computer basics and transcript production, dictionary management, realtime translation, and reporter technology utilizing Case CATalyst software from Stenograph, LLC. Co-requisites: 10-170-112, 10-170-132.

10-170-124 CAT Class 4 1 credit

Technology course for Court Reporting program that focuses on computer basics and transcript production, dictionary management, realtime translation, and reporter technology utilizing Case CATalyst software from Stenograph, LLC. Prerequisite: 10-170-123; Co-requisites: 10-170-114, 10-17-134.

10-170-125 CAT Class 5 1 credit

Technology course for Court Reporting program that focuses on computer basics and transcript production, dictionary management, realtime translation, and reporter technology utilizing Case CATalyst software from Stenograph, LLC. Prerequisite: 10-170-124; Co-requisites: 10-170-115, 10-17-135.

10-170-131 English for Realtime Reporters 1 1 credit

Focuses on the rules of English grammar, spelling, punctuation, and capitalization, including vocabulary (word knowledge), through instruction and activities designed for students to develop spelling and vocabulary skills and demonstrate ability to apply the rules of grammar, spelling, punctuation, and capitalization to sentences, paragraphs, and transcripts through systematic testing and/or projects. Co-requisites: 10170111, 10170121.

10-170-132 English for Realtime Reporters 2 1 credit

Focuses on the rules of English grammar, spelling, punctuation, and capitalization, including vocabulary (word knowledge), through instruction and activities designed for students to develop spelling and vocabulary skills and demonstrate ability to apply the rules of grammar, spelling, punctuation, and capitalization to sentences, paragraphs, and transcripts through systematic testing and/or projects. Prerequisite: 10170111; Co-requisites: 10170112, 10170122.

10-170-134 English for Realtime Reporters 4 1 credit

Focuses on the rules of English grammar, spelling, punctuation, and capitalization, including vocabulary (word knowledge), through instruction and activities designed for students to develop spelling and vocabulary skills and demonstrate ability to apply the rules of grammar, spelling, punctuation, and capitalization to sentences, paragraphs, and transcripts through systematic testing and/or projects. Prerequisite: 10-170-132; Co-requisites: 10-170-114, 10-170-124.

10-170-135 English for Realtime Reporters 5 1 credit

Focuses on the rules of English grammar, spelling, punctuation, and capitalization, including vocabulary (word knowledge), through instruction and activities designed for students to develop spelling and vocabulary skills and demonstrate ability to apply the rules of grammar, spelling, punctuation, and capitalization to sentences, paragraphs, and transcripts through systematic testing and/or projects. Prerequisite: 10-170-134; Co-requisites: 10-170-115, 10-170-125.

10-170-170 Court Reporting Procedures 3 credits

Covers professional reporting procedures, including transcript production; daily copy reporting; using general and legal reference materials; legal citations; professional standards and ethics; technology, such as videotaped depositions and computer-assisted transcription; reporting depositions, commission hearings and business meetings; operating a freelance reporting business; and resume preparation. Requires a minimum testimony writing speed of 180wpm. Prerequisites: 10-170-116, and a minimum testimony writing speed of 180 wpm.

10-170-171 Legal Terminology 2 credits

Focuses on legal terminologies customarily encountered in the judicial system in the following areas: civil law; criminal law; and discovery, trial, and appellate processes. Methods of researching legal citations are also emphasized. Co-requisite: 10-170-116

10-170-172 Court Reporting Internship 3 credits

The objective of the class is to gain experience and knowledge through observation of the working reporter in the judicial and educational environment. Students will also participate by writing in actual situations relating to the freelance, courtroom, and realtime environments. Mock RPR and CRR tests are administered and mock interviews conducted. Requires a minimum testimony writing speed of 180wpm. Co-requisite: 10-170-116, and a minimum writing speed of 180 wpm.

Career Potential:

- CART Reporter
- Court and Conference Reporter
- Court Reporter
- Freelance Court Reporter
- Reporter
- Scopist
- Court Stenographer
- Realtime Reporter

With additional education and/or work experience, graduates may find employment as:

- Stenocaptionist

More detailed and updated information on this program may be available at: madisoncollege.edu. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

Madison Area Technical College provides equal opportunity in education and employment.

Rev. 02/15

Criminal Justice—Law Enforcement

Program Number: 10-504-1

Associate in Applied Science Degree

Protective Services Program Cluster

School of Human and Protective Services

Program offered at Truax Campus

For information call:
(608) 245-5888 or (800) 322-6282 Ext. 5888

About the Program

Providing the academic and professional training necessary to become a law enforcement officer, the Criminal Justice— Law Enforcement program provides necessary skills in behavioral sciences and written and verbal communication. Police officer efficiency and effectiveness increases with a better understanding of the daily problems of society and knowledge of law enforcement techniques.

Graduates seeking employment will be required to pass a physical exam and meet physical fitness standards; have possession of a valid driver's license and a good driving record; and have no conviction of a felony offense. Positions require a background investigation, psychological testing and mandatory drug testing. An applicant for employment as a law enforcement officer must possess either 1) a two-year associate degree from a Wisconsin technical college or its accredited equivalent from another state or 2) a minimum of 60 fully accredited college-level credits.

Admission Requirements

To review program admission requirements and application processing dates, visit the program's website at: <http://madisoncollege.edu/program-info/criminal-justice-law-enforcement>.

Requirements for Graduation

Students must achieve at least a 2.0 (C) grade in all program core courses and an overall 2.0 (C) grade point average.

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

		Credits	Hrs/week Lec-Lab
First Semester			
10-504-170	Intro u tion to orre tion	3	3-0
10-504-900	Introduction to Criminal u ti e	3	3-0
10-801-195	Written Communication OR	3	3-0
20-801-201	English 1*	3	(3-0)
10-804-107	College Math OR	3	4-0
20-804-201	Intermediate Algebra*	(3)	(3-0)
10-809-199	Psychology of Human Relations OR	3	3-0
20-809-231	Intro to Psychology*	(3)	(3-0)
10-890-101	College Success and Study Skills	1	1-0
Semester Total		16	

Second Semester			
10-504-171	Private Sector Security	3	3-0
10-504-902	riminal a	3	3-0
10-504-904	u enile a	3	3-0
10-801-196	ral Inter er onal ommuni ation OR	3	3-0
20-801-202	English 2*	(3)	(3-0)
10-809-122	Intro to American Government OR	3	3-0
10-809-195	Economics OR	(3)	(3-0)
20-809-221	American National Government*	(3)	(3-0)
10-809-197	Contemporary American Society OR	3	3-0
20-809-203	Intro to Sociology	(3)	(3-0)
Semester Total		18	

Third Semester			
10-504-103	Professional Development Seminar for riminal u ti e	1	1-0
10-504-901	on titutional a	3	3-0
10-504-905	e ort riting	3	3-0
10-504-906	Criminal Investigation Theory	3	2-2
10-504-908	raffi eory	3	3-0
10-531-150	mergen y e on e for rote ti e er i e	2	1-1
<u>Elective</u>		<u>3</u>	<u>E</u>
Semester Total		18	

Fourth Semester			
10-504-143	riminology for a nfor ement	3	3-0
10-504-152	mergen y Management	3	3-0
10-504-903	rofe onal ommuni ation	3	3-0
10-504-907	ommunity oli ing strategie	3	3-0
10-809-172	Introduction to Diversity Studies OR	3	3-0
20-809-252	Race and Ethnicity in the U.S.*	(3)	(3-0)
<u>Elective</u>		<u>3</u>	<u>E</u>
Semester Total		18	

*College transfer equivalent courses
ΔPrerequisites required

Note: Students are placed in English or mathematics courses based on their scores on the COMPASS test or on completion of the appropriate prerequisite/s.



**Madison Area Technical College
Criminal Justice—Law Enforcement**

Program Number: 10-504-1

Program Courses

Criminal Justice Course Prerequisites

Students enrolling in the courses identified within this program must meet the following requirements: High school diploma or GED/HSED with a grade point average of 2.0 or equivalent.

10-504-103 Professional Development Seminar for Criminal Justice 1 credit

This course is designed for second year students who are preparing to enter into the job search process. Prepares the student for the hiring process for a Criminal Justice career including applications, resumes, interviews, and hiring process standards. Also incorporates the B.E.S.T. (Basic Employability Skills Training) curriculum developed by the Manhattan Area Technical College and the Kansas Department of Commerce. Prerequisite: completion of first-year courses.

10-504-143 Criminology for Law Enforcement 3 credits

Exposes criminal justice students to these questions: what is crime and why is it a problem? Focusing on those questions, the course will look at what is known about crime and how it is known. Also touches on crimes, criminals and theories, while focusing on the police in the criminal justice system. Prerequisite: completion of first-year courses.

10-504-152 Emergency Management 3 credits

Introduces the student to the principles, theories, and practices of emergency management. The philosophy of comprehensive Emergency Management will be discussed including mitigation, preparedness, response and recovery. In addition, students will obtain ICS-100 and FEMA IS-700 certification. Prerequisite: completion of first-year courses.

10-504-170 Introduction to Corrections 3 credits

Examines the concept of punishment and its form, functions, and enforcement throughout history, with an emphasis on the operation, structure, clientele, and issues confronting the institutions, agencies, and programs encompassing the corrections system including jails, prisons, and probation and parole. Prerequisite: Criminal Justice course prerequisites.

10-504-171 Private Sector Security 3 credits

This course is a comprehensive examination of the relationship of the criminal justice system to business and industrial security. It also provides an overview of the administrative, personnel, and physical aspects of the private security field. Prerequisite: 10-504-900 and 10-504-170.

10-504-900 Introduction to Criminal Justice 3 credits

Learners will distinguish between the roles and functions of courts with jurisdiction in Wisconsin; differentiate between the roles and functions of federal, state, and local law enforcement agencies; apply professional principles as a law enforcement officer; determine modern police functions and policies from an historical perspective; identify the role of law enforcement officers in American society; utilize a decision-making model; identify the characteristics of a good decision maker; describe how professionalism, ethics, and moral standards relate to a law enforcement career; practice a code of behavior; incorporate ethical decision-making strategies; describe how decisions are made; enhance an officer's critical thinking and police problem solving skills; apply principles of critical thinking, decision-making, and problem solving; identify required law enforcement policies; defend the importance of written agency policies; and distinguish between "ministerial" and "discretionary" duties. Prerequisite: Criminal Justice course prerequisites.

10-504-901 Constitutional Law 3 credits

Learners will show the structure of the criminal justice system, identify situations where constitutional rules are applicable, identify situations where an officer may use reasonable suspicion to contact a subject, identify the elements of a lawful arrest, identify search-related activities where the 4th amendment is not applicable, identify the requirements that pertain to search warrants, analyze exceptions to the search warrant requirement, identify the special requirements for searching disabled persons and strip searches, identify the legal requirements for obtaining confessions and statements, and analyze the relationship between law enforcement actions and the admissibility of evidence in court. Prerequisite: 10-504-902.

10-504-902 Criminal Law 3 credits

In this course, learners will identify basic concepts of criminal law; analyze facts, circumstances, and situations to determine which crimes against persons and property have been committed; determine which crimes involving drugs, alcohol or other criminal activity have been committed. Prerequisites: 10-504-900, 10-504-170.

10-504-903 Professional Communications 3 credits

The learner will apply knowledge of the communication process, apply communication techniques, integrate verbal and physical intervention skills, develop strategies to obtain information in a variety of situations, differentiate between interview and interrogation, and analyze information for consideration as corroborative evidence. Prerequisite: 10-504-901.

10-504-904 Juvenile Law 3 credits

The learner will describe the juvenile justice system, describe the handling of cases of children in need of protection or services, describe the handling of cases of juveniles in need of protection or services or alleged to be delinquent, identify constitutional law issues that are relevant to juveniles, analyze the role of law enforcement in responding to child maltreatment, explain the issues involved in investigating incidents of child victimization, intervene and apply appropriate investigative strategies, describe the roles of other agencies in child maltreatment cases, and recognize the unique investigative issues for missing children. Prerequisites: 10-504-900 and 10-504-170.

10-504-905 Report Writing 3 credits

In this course, the learner will explain the context of report writing, take effective field notes, organize information in reports, write narratives, describe what information should be included in certain types of reports, prepare for court, describe how to be an effective witness, and testify as a witness in court. Prerequisites: 10-504-902 and 10-801-195.

10-504-906 Criminal Investigation Theory 3 credits

The learner will describe the role evidence plays in criminal investigations and prosecutions; apply the steps for processing crime scenes; apply appropriate strategies to locate, handle, and package evidentiary items; document the crime scene; recognize the unique investigative issues for crimes against life; apply appropriate strategies to secure the scene, collect and preserve evidence, and investigate a death; recognize the dynamics of victimization; apply knowledge of the definitions and responsibilities for law enforcement; apply appropriate interview techniques with adult or child victims; analyze the role of law enforcement in responding to domestic abuse; intervene and apply appropriate investigative strategies; respond to an officer-involved domestic violence incident; analyze the role of law enforcement in responding to sexual abuse; demonstrate investigative techniques in a simulated sexual assault case; and identify other resources that can assist in sexual assault cases. Prerequisite: 10-504-902.

10-504-907 Community Policing Strategies 3 credits

The learner will identify local community resources, describe the role of an advocacy group in the criminal justice community, demonstrate cultural self-awareness, interpret state and federal laws related to discrimination and diversity, utilize appropriate skills for interacting effectively and professionally with persons from culturally diverse backgrounds and lifestyles, identify and implement personal strategies that take into account cultural differences, identify the types of situations and the characteristics of individuals that are likely to be encountered in crisis management situations, apply Wisconsin statutory requirements and general guidelines regarding emergency detentions and emergency protective placements of persons, identify key concepts and elements associated with law enforcement response to people in crisis, apply crisis intervention principles and techniques, articulate the decision-making process taken to manage persons in crisis, incorporate community policing strategies into the community, illustrate problem-oriented policing strategies, evaluate other policing strategies, and apply principles of crime analysis and prevention. Prerequisite: completion of first-year courses.

10-504-908 Traffic Theory 3 credits

The learner will enforce Wisconsin traffic laws, detect traffic violations, issue traffic citations, direct traffic, identify responsibilities of a first responding officer, manage the response to a scene, take necessary steps to enable effective follow-up as needed, conduct an initial investigation at a crash scene, identify the mechanics of measuring and documenting traffic crash scenes, complete the Wisconsin Motor Vehicle Accident Report, record the crash scene using photography, take appropriate enforcement action based on information gathered, and recognize and interpret indicators of impaired driving. Prerequisite: 10-504-902.

Recommended Electives

10-504-145 Investigative Photography 3 credits
10-504-180 Internship 3 credits

Six (6) elective credits are required for the program and can be six

(6) associate degree or college transfer credits of your choice. Once registered for electives, view your advising report (Academic Requirements) in your student center account for verification of applicability towards your program requirements.

Career Potential:

- **Law Enforcement Officers**
In city, county, state and federal law enforcement departments.

- **Private Security Officers**
- **Investigators**
- **Correctional Officers**
- **Juvenile Detention Workers**
- **911 Dispatcher**
- **Court Clerk**
- **Border Patrol**

With additional education and/or work experience, graduates may find employment as:

- **Detectives**
- **Sergeants**
- **Lieutenants**
- **Captains**
- **Chiefs**
- **Probation and Parole Officers**
- **Federal Air Marshall**
- **Crime Scene Investigator**
- **Department of Homeland Security**

More detailed and updated information on this program may be available at: madisoncollege.edu. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

Madison Area Technical College provides equal opportunity in education and employment.

Culinary Arts

Associate in Applied Science Degree

Program Number: 10-316-1

Hospitality Program Cluster

School of Business and Applied Arts

Program offered at Madison Campuses

For information call:

(608) 246-6003 or (800) 322-6282 Ext. 6003

About the Program

The Culinary Arts Program is for individuals interested in pursuing a career within the hospitality field in mid-management positions in food preparation and service areas. This program is accredited by the American Culinary Federation Educational Institute. Statistics show that the food service industry is America's #1 retail employer.

An education in Culinary Arts at Madison College offers you unparalleled opportunity in an industry that generates \$399 billion in annual sales in the United States. According to the National Restaurant Association (NRA), 11.3 million people are employed in food service-related businesses making it the largest retail employer in the country and second in overall employees only to the federal government. Culinary Arts Program alumni hold many key positions throughout the region such as purchasing agents, general managers and executive chefs. In fact, our graduates typically receive on average 5 to 10 job offers from local industry. Many go on to become educators or to own their own businesses.

Graduates of this program typically earn \$18,500 to \$35,000 per year.

Admissions Requirements

To review admissions program requirements and application processing dates visit the programs website at: <http://madisoncollege.edu/program-info/culinary-arts>.

Program Courses

10-316-101 Principles of Sanitation 1 credit

Covers food service sanitation principles and the role of food-service personnel in the prevention of contamination and food-borne illness. Certification through the Educational Foundation of the National Restaurant Association is a requirement for completion and can be used to apply for state certification. Prerequisite: appropriate Reading Placement test score or equivalent course.

10-316-104 Intro to Gourmet Food Preparation 3 credits

Provides students with an introduction to classical and ethnic cooking techniques common to full-service restaurants. Students will have an opportunity to apply and develop skills in the Madison College Gourmet Dining Room, a simulated restaurant environment. Prerequisite: grade of C or better in all first-year lab courses, Food Theory and Principles of Sanitation and concurrent enrollment in 10-316-108, 10-316-115, 10-316-132, and 10-316-140.

10-316-106 Food Theory 2 credits

This course provides the opportunity for the learner to develop the knowledge, skills and understanding of food preparation in commercial kitchens that will enhance their careers. Co-requisite: 10-316-111; Prerequisite: appropriate Reading Placement test score or equivalent course.

10-316-108 Culinary Baking Fundamentals 1 credit

Provides a general understanding of basic baking principles and knowledge of the functions and appropriate usage of the major ingredients used in production baking. Different types of bakery products are classified according to their characteristics. Ingredient cost-outs are calculated. Prerequisite: appropriate Reading Placement test score or equivalent course and concurrent enrollment in Culinary Baking Lab.

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

First Semester		Credits	Hrs/week Lec-Lab
10-316-101	Principles of Sanitation*	1	1-0
10-316-106	Food Theory*	2	2-0
10-316-108	Culinary Baking Fundamentals**	1	1-0
10-316-111	Professional Cooking 1*	4	0-8
10-316-115	Culinary Baking Lab**	2	0-4
10-316-140	Menu Planning**	1	1-0
10-809-166	Intro to Ethics: Theory & Application OR	3	3-0
20-809-276	Business Ethics ^a	(3)	3-0
Semester Total		14	

Second Semester		Credits	Hrs/week Lec-Lab
10-101-106	Accounting Fundamentals	3	3-0
10-316-121	Professional Cooking 2**	4	0-8
10-316-133	Garde Manager/Decorative Foods	2	1-2
10-316-139	Catering	2	1-2
10-316-152	Nutrition	1	1-0
10-801-195	Written Communication	3	3-0
Semester Total		15	

Third (Summer) Term		Credits	Hrs/week Lec-Lab
10-316-194	Culinary Internship**	2	0-8

Fourth Semester		Credits	Hrs/week Lec-Lab
10-109-134	Hotel/Restaurant Cost Control	3	3-0
10-316-104	Introduction to Gourmet Food Preparation**	3	1-5
10-316-132	Wait Staff Training**	1	1-0
10-316-158	Food Purchasing Analysis	1	1-0
10-804-123	Math with Business Applications	3	3-0
10-809-197	Contemporary American Society	3	3-0
Elective		3	E
Semester Total		17	

Fifth Semester		Credits	Hrs/week Lec-Lab
10-109-125	Hospitality Leadership	3	3-0
10-316-130	Gourmet Foods	4	1-6
10-316-135	Dining Room Operations	1	1-0
10-801-196	Oral/Interpersonal Communication	3	3-0
10-809-195	Economics	3	3-0
10-809-199	Psychology of Human Relations	3	3-0
Semester Total		17	

All culinary related (10-316-xxx) courses are offered only in semester shown. See prerequisite/co-requisite information listed in the course description for each course.

*Principles of Sanitation, Food Theory and Professional Cooking 1 must be taken concurrently; a grade of C or better is required to continue with second semester courses.

**Must be taken concurrently in the semester shown and require a grade of C or better to continue with the next semester culinary related courses.

^a Other course options are available. See program advisor for information.

Recommended Electives

10-109-136	Hotel & Restaurant Law	3 credits
10-316-112	Cuisines of the World fall	4 credits
10-316-118	Meat Cutting	2 credits
10-316-178	Americana Cuisine (fall)	2 credits
10-316-189	Breakfast Cookery (spring)	1 credit



Program Courses cont'd

10-316-111 Professional Cooking 1 4 credits
Students will learn the basics skill sets and foundation blocks of professional cooking in a practical environment. The class develops foundation skills that are used in every kitchen. Emphasis of the class is; sanitation, knife skills, heat transfer, protein cookery, working in teams, Mise en place, sauce production and starch cookery. Prerequisites or concurrent enrollment in 10-316-101 and appropriate Math Placement test score or equivalent course. Co-requisite: 10-316-106.

10-316-115 Culinary Baking Lab 2 credits
A chef who develops a basic understanding of the baking process will be better able to manage any kitchen situation, including the pastry department. Mastery is not the goal of this course, but rather to develop a foundation in baking principles through hands-on application in a modern baking lab using production equipment. Students will prepare a variety of standard bakery products to obtain knowledge about the many processes of baking. Prerequisites: 10-316-101 and 10-316-111. Co-requisite: 10-316-108.

10-316-121 Professional Cooking 2 4 credits
Further continuation of 316-119 lab with emphasis placed on the demands of running a kitchen and developing quality products and sticking to details. Students will elevate their skills; heat transfer, sanitation, critical thinking, team work, and sauce production. The last eight weeks of the class are devoted to fish and shellfish cookery. The final segment is interpreting menus from the students. Prerequisites: 10-316-101, 10-316-106 and 10-316-111.

10-316-130 Gourmet Foods 4 credits
Expanding on the first semester of Intro to Gourmet Foods, students will incorporate the culinary skills they have learned over the last one-and-a-half of the culinary arts program. Utilizing up to date cooking techniques and following industry standards for high-end foods students will maintain all aspects of the kitchen with the utmost care. With an emphasis on working on presentation, flavors, cooking skills and time management students will gain a real work environment with the lab component of learning to prepare high-end foods. Students are expected to have completed the first semester of Intro to Gourmet before entering the Gourmet Foods class. Prerequisites: 10-316-104, 10-316-132; Co-requisite: 10-316-135.

10-316-132 Wait Staff Training 1 credit
Wait staff training encompasses the art of service and the importance of front of the house work in the culinary program. Students learn how to properly interact with guest and provide high quality service to guest. They learn the fundamentals of table service and proper techniques for service. Along with gaining insight on guest service students learn the procedures for entering guest orders and interacting with the kitchen staff. They will be provided with management opportunities that will require critical thinking and make important decisions on how to handle specific situations. Co-requisite: 10-316-104.

10-316-133 Garde Manager/Decorative Foods 2 credits
This course is designed to give the students a fundamental working knowledge of the cold kitchen. Students will have hands on working experiences and be tested for their knowledge of Garde Manager using quizzes, a written midterm, final exam and one cold platter as a capstone group project. Students will be required to work on projects independently and in-group settings. Students will begin the class by learning the history of Garde Manger and produce products that are made every day on the cold side of our industry to include; ice carving, charcuterie, sandwiches, crackers, cheese and even pickles. We eat most of what we make so make it tasty! Prerequisites: 10-316-101 and 10-316-104.

10-316-135 Dining Room Operation 1 credit
Dining Room Operations focuses on the spirit of hospitality, guest service and the importance of front-of-the-house work in the culinary program in a leadership position. As a dining room manager, students will learn how to properly coach, mentor, and enforce the importance of hospitality & service to guests. Students will stress the fundamentals of table service, proper techniques for service, & lead fellow students in their roles as servers. Students learn from the experience of running a live operating restaurant dining room from a management perspective. Students gain leadership confidence, communication & interaction skill with both front-of-the-house and back-of-the-house staff. They will be provided with management opportunities that will require critical thinking and decision making on how to handle specific situations. Students learn and practice the responsibilities common in dining room management, various styles of table service, tableside presentations and beverage services. Co-requisite: 10-316-130

10-316-139 Catering 2 credits
Provides an understanding of catering concepts through demonstration and hands-on experience by completing various food functions. The events vary from black tie multi-course dinners for the community to BBQ lunches. Prerequisites: 10-316-101 and 10-316-111.

10-316-140 Menu Planning 1 credit
This course provides the fundamentals of menu planning. Topics include menu trends, the market survey, nutrition, menu planning, foodservice menus, yield tests, standard recipes, recipe costing, menu development and design, sale history, merchandising, and equipment analysis. Emphasis is placed on developing the skills necessary to effectively create a professional menu. This course is offered in an online format only.

10-316-152 Nutrition 1 credit
Provides information about nutrition as it applies to the food service industry. The six classes of nutrients are covered as well as the latest guidelines set forth by governmental agencies and health organizations. Students learn about healthful cooking methods needed to modify and create menus for specific health concerns. The role of diet in disease prevention is also discussed.

10-316-158 Food Purchasing Analysis 1 credit
The goal of this course is to enable you to understand all the mechanics of buying food, beverages and goods for a food service establishment. It will also focus on building relations with suppliers, how to use technology to properly store and record goods purchased. Prerequisite: appropriate Math Placement test score or equivalent course. This course is offered in online format only.

10-316-194 Culinary Internship 2 credits
The internship program is designed to provide students with an opportunity to relate current educational material from the college classroom to practical experience under the direction of professionals in extended work assignments. Prerequisites for Culinary Arts students: grade of C or better in 10-316-101, 10-316-106, 10-316-111. Co-requisite: 10-316-121. Prerequisites for Food Service Production students: grade of C or better in 10-316-101, 10-316-111, 10-316-115, 10-316-106, 10-316-108. Co-requisite: 10-316-121.

Career Potential:

- **Prep Cooks/Cooks**
Prepare various foods such as meats, vegetables, soups and sauces as directed by a chef or kitchen manager.
- **Line Cooks**
Are directly involved with online food preparation.
- **Broiler Chefs or Garde Mangers**
Are primarily food preparation people for a particular station in the kitchen.
- **Sous Chefs**
Manage or supervise a particular station in the kitchen; are a direct link to kitchen from the executive chef.
- **Executive Chefs or Owner/Operators**
Generally supervise all kitchen personnel and coordinate purchase, storage and preparation of all food items.

Recommended Elective Courses

10-109-136 Tourism Law 3 credits
A preventive approach to the laws and liabilities, as well as responsibilities of owners/operators of hotels, restaurants and travel facilities. Reviews precedent-setting court decisions, legal fundamentals, negligence doctrines, civil rights issues and the relationship between providers and the guests/clients.

10-316-112 Cuisines of the World 4 credits
Students will explore foods from North America and other prominent regions of the world. Gives students the opportunity to further practice and reinforce cooking techniques and knife skills needed to produce stocks and sauces, starches, meats, and other food items. Protein fabrication and heat transfer techniques are also covered. Prerequisite or concurrent enrollment in 10-316-101; concurrent enrollment in 10-316-106.

10-316-118 Meat Cutting 2 credits
Provides hands-on experience of cutting and fabricating wholesale cuts of meat. The importance of safety and hygiene, equipment utilization and yield costing are also discussed. Prerequisite or Co-requisite: 10-316-101 and 10-316-111 and prerequisite of appropriate Reading Placement test score or equivalent course.

10-316-178 Americana Cuisine 2 credits
Students will learn the thin line that intersects Americana Cuisine throughout North America—from southwest to Cajun and how certain foods have similar ingredients that carry through to the other cooking styles. Students will also learn the history or roots of each particular style of cooking.

10-316-189 Breakfast Cookery^b 1 credit
Students will learn the principles and techniques of breakfast food preparation in a simulated work environment. Products will include eggs, omelets, batters, and starches. Prerequisites: 10-316-101 and 10-316-111.

More detailed and updated information on this program may be available at madisoncollege.edu. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

Madison Area Technical College provides equal opportunity in education and employment.

Culinary Production Specialist

Program Number: 31-316-2

One-Year Technical Diploma

Hospitality Program Cluster

School of Business and Applied Arts

Program offered at Madison Campuses

For information call:

(608) 246-6003 or (800) 322-6282 Ext. 6003

About the Program

The Culinary Production Specialist program develops skills to pursue a career in the food-service industry within restaurants, bakeries, catering services, delis, hotels, resorts, health care facilities and schools.

The program incorporates comprehensive hands-on learning experiences complimented by supportive and theoretical activities to prepare students for a wide range of career opportunities in the food service industry. All of the credits for this program may be applied to the Culinary Arts Program.

Statistics show that the food service industry is America's #1 retail employer. In Wisconsin and throughout the nation, there is an increasing need for well-trained food service personnel for restaurants, catering enterprises, health care facilities and other institutional food service establishments.

Graduates of this program typically earn \$16,000 to \$20,000 per year.

This program is designed to be completed in two semesters; however, students may attend selected courses on a part-time basis if desired.

Competency in Windows, Internet and basic word processing is necessary for success in this program. Students may take Windows (10-103-134/135), Word-Beginning (10-103-137) and/or Internet Introduction (10-103-146) during the first semester if they do not meet this requirement.

Students must have appropriate competency in math, reading and writing to succeed in this program. If remedial course work is recommended, it is suggested that these courses be completed before beginning the Culinary Production Specialist program courses.

Potential students must be physically able to lift 50# on a routine basis and stand for a minimum of eight hours per day. They should also have good communication and social skills to be successful in this program.

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

FIRST YEAR

First Semester		Credits	Hrs/week Lec-Lab
10-316-101	Principles of Sanitation*	1	1-0
10-316-106	Food Theory*	2	2-0
10-316-108	Culinary Baking Fundamentals**	1	1-0
10-316-111	Professional Cooking 1*	4	0-8
10-316-115	Culinary Baking Lab**	2	0-4
10-316-140	Menu Planning**	1	1-0
10-809-166	Intro to Ethics: Theory & Application OR	3	3-0
20-809-276	Business Ethics..... (3)	3	3-0

Second Semester

10-101-106	Accounting Fundamentals	3	3-0
10-316-121	Professional Cooking 2**	4	0-8
10-316-133	Garde Manger/Decorative Foods	2	1-2
10-316-139	Catering.....	2	1-2
10-316-152	Nutrition.....	1	1-0
10-801-195	Written Communication.....	3	3-0

Third/Summer Semester

10-316-194	Culinary Internship.....	2	0-8
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All culinary related (10-316-xxx) courses are offered only in semester shown. See prerequisite/co-requisite information listed in the course description for each course.

*Principles of Sanitation, Food Theory and Professional Cooking 1 must be taken concurrently; a grade of C or better is required to continue with second semester courses.

**Must be taken concurrently in the semester shown and require a grade of C or better to continue with the next semester culinary related courses

Admissions Requirements

To review admissions program requirements and application processing dates visit the programs website at: <http://madisoncollege.edu/program-info/culinary-production-specialist>.



Program Courses

10-101-106 Accounting Fundamentals 3 credits
Surveys accounting principles and practices with an emphasis on interpretation, rather than preparation, of financial statements. Presents basic business terminology, cash basis and accrual basis accounting, ratio analysis, payroll, and budgeting. This class is not for students majoring in accounting.

10-316-101 Principles of Sanitation 1 credit
Covers food service sanitation principles and the role of food-service personnel in the prevention of contamination and food-borne illness. Certification through the Educational Foundation of the National Restaurant Association is a requirement for completion and can be used to apply for state certification. Prerequisite: appropriate Reading Placement test score or equivalent course.

10-316-106 Food Theory 2 credits
This course provides the opportunity for the learner to develop the knowledge, skills and understanding of food preparation in commercial kitchens that will enhance their careers. Co-requisite: 10-316-111; Prerequisite: appropriate Reading Placement test score or equivalent course.

10-316-108 Culinary Baking Fundamentals 1 credit
Provides a general understanding of basic baking principles and knowledge of the functions and appropriate usage of the major ingredients used in production baking. Different types of bakery products are classified according to their characteristics. Ingredient cost-outs are calculated. Prerequisite: appropriate Reading Placement test score or equivalent course and concurrent enrollment in Culinary Baking Lab.

10-316-111 Professional Cooking 1 4 credits
Students will learn the basics skill sets and foundation blocks of professional cooking in a practical environment. The class develops foundation skills that are used in every kitchen. Emphasis of the class is; sanitation, knife skills, heat transfer, protein cookery, working in teams, Mise en place, sauce production and starch cookery. Prerequisites or concurrent enrollment in 10-316-101 and appropriate Math Placement test score or equivalent course. Co-requisite: 10-316-106.

10-316-115 Culinary Baking Lab 2 credits
A chef who develops a basic understanding of the baking process will be better able to manage any kitchen situation, including the pastry department. Mastery is not the goal of this course, but rather to develop a foundation in baking principles through hands-on application in a modern baking lab using production equipment. Students will prepare a variety of standard bakery products to obtain knowledge about the many processes of baking. Prerequisites: 10-316-101 and 10-316-111. Co-requisites: 10-316-108.

10-316-121 Professional Cooking 2 4 credits
Further continuation of 316-119 lab with emphasis placed of the demands of running a kitchen and developing quality products and sticking to details. Students will elevate their skills; heat transfer, sanitation, critical thinking, team work, and sauce production. The last eight weeks of the class are devoted to fish and shellfish cookery. The final segment is interpreting menus from the students. Prerequisites: 10-316-101, 10-316-106 and 10-316-111.

10-316-133 Garde Manger/Decorative Foods 2 credits
This course is designed to give the students a fundamental working knowledge of the cold kitchen. Students will have hands on working experiences and be tested for their knowledge of Garde Manager using quizzes, a written midterm, final exam and one cold platter as a capstone group project. Students will be required to work on projects independently and in-group settings. Students will begin the class by learning the history of Garde Manger and produce products that are made every day on the cold side of our industry to include; ice carving, charcuterie, sandwiches, crackers, cheese and even pickles. We eat most of what we make so make it tasty! Prerequisites: 10-316-101 and 10-316-104.

10-316-139 Catering 2 credits
Provides an understanding of catering concepts through demonstration and hands-on experience by completing various food functions. The events vary from black tie multi-course dinners for the community to BBQ lunches. Prerequisites: 10-316-101 and 10-316-111.

10-316-140 Menu Planning 1 credit
This course provides the fundamentals of menu planning. Topics include menu trends, the market survey, nutrition, menu planning, foodservice menus, yield tests, standard recipes, recipe costing, menu development and design, sale history, merchandising, and equipment analysis. Emphasis is placed on developing the skills necessary to effectively create a professional menu. This course is offered in an online format only.

10-316-152 Nutrition 1 credit
Provides information about nutrition as it applies to the food service industry. The six classes of nutrients are covered as well as the latest guidelines set forth by governmental agencies and health organizations. Students learn about healthful cooking methods needed to modify and create menus for specific health concerns. The role of diet in disease prevention is also discussed.

10-316-194 Culinary Internship 2 credits
The internship program is designed to provide students with an opportunity to relate current educational material from the college classroom to practical experience under the direction of professionals in extended work assignments. Prerequisites: Principles of Sanitation, 10-316-101; Food Theory, 10-316-106 and Professional Cooking 1, 10-316-111; and corequisite (concurrent enrollment) or prerequisite Professional Cooking 2, 10-316-121.

Career Potential:

- **Prep Cooks/Cooks**
Prepare various foods such as meats, vegetables, soups and sauces as directed by a chef or kitchen manager.
- **Line Cooks**
Are directly involved with online food preparation.
- **Broiler Chefs or Garde Mangers**
Are primarily food preparation people for a particular station in the kitchen.
- **Sous Chefs**
Manage or supervise a particular station in the kitchen; are a direct link to kitchen from the executive chef.
- **Executive Chefs or Owner/Operators**
Generally supervise all kitchen personnel and coordinate purchase, storage and preparation of all food items.

More detailed and updated information on this program may be available at: madisoncollege.edu. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

Madison Area Technical College provides equal opportunity in education and employment.

Dental Assistant

Program Number: 30-508-2

Less-Than-One-Year Diploma

Health-Related Professions Program Cluster

School of Health Education

Program offered at Madison Campuses

For information call: (608) 246-6065, (608) 243-4221 or
(800) 322-6282 Ext. 6065 or 4221

About the Program

The Dental Assistant program prepares graduates to work with dentists as they examine and treat patients. Dental Assistants with documented skills also may carry out a variety of laboratory, clinical and office duties. Graduates receive a technical diploma. Most dental assistants work in general or specialized dental offices, either for individual dentists or for groups of dentists. The dental assistant also may find employment with federal agencies such as the Veterans' Administration, United States Public Health Services, the Armed Forces, or a state, county or city health facility.

Dental Assistant is a one-semester program. Students are accepted for both fall and spring semesters.

Admissions Requirements

To review program admission program requirements and application processing dates visit the programs website at: <http://madisoncollege.edu/program-info/dental-assistant>.

Program Requirements

- 1) Physical exam and completed Health History Form on file prior to beginning program.
- 2) Hands-on (Health Care Provider) CPR certification before beginning Dental Assistant program (two-person CPR, Infant through Adult with AED).

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

First Semester		Credits	Hrs/week Lec-Lab
10-508-101	Dental Health Safety*	1	0-1
31-508-302	Dental Chairside.....	5	3-5
10-508-113	Dental Materials*	2	1-2
10-508-304	Dental and General Anatomy.....	2	3-0
10-508-103	Dental Radiography*	2	2-2
31-508-306	Dental Assistant Clinical.....	3	171 hrs
31-508-307	Dental Assistant Professionalism.....	1	2-0

Note: A copy of the essential functions necessary to successfully complete the program of study is available upon request from the division office.

*Classes that transfer on to the Dental Hygienist program



Program Courses

10-508-101 Dental Health Safety 1 credit

Prepares dental auxiliary students to respond proactively to dental emergencies, control infection, prevent disease, adhere to OSHA Standards and safely manage hazardous materials. Students also take patient vital signs and collect patient medical/dental histories. CPR certification is a prerequisite; students will be required to show proof of certification before beginning the course. Offered as a Hybrid class. Prerequisite: Students must be currently recognized/ certified in basic life support procedures for health care provider, including cardiopulmonary resuscitation prior to enrollment in this course.

10-508-113 Dental Materials 2 credits

Prepares dental auxiliary students to handle and prepare dental materials such as liners, bases, cements, amalgam, resin restorative materials, gypsum products and impression materials. Students also learn to take alginate impressions and clean removable appliances. Offered as a Hybrid class. Prerequisite: 10-508-101, or concurrent enrollment.

31-508-302 Dental Chairside 5 credits

Prepares dental assistant students to chart oral cavity structures, dental pathology and restorations and to assist a dentist with basic dental procedures including examinations, pain control, amalgam restoration and cosmetic restoration. Student will also develop the ability to educate patients about preventive dentistry, brushing and flossing techniques, and dental procedures, using lay terminology. Throughout the course, students will apply decoding strategies to the correct use and interpretation of dental terminology. Offered as a Hybrid class. Prerequisite: 10-508-101, or concurrent enrollment.

10-508-304 Dental & General Anatomy 2 credits

Prepares dental assistant students to apply fundamentals of general and dental anatomy to informed decision making and to professional communication with colleagues and patients. Offered as an online class. Prerequisite: acceptance into the Dental Assistant program.

10-508-103 Dental Radiography 2 credits

Prepares dental auxiliary students to operate x-ray units and expose bitewing, periapical, extra oral, and occlusal radiographs. Emphasis is placed on protection against x-ray hazards. Students also process, mount, and evaluate radiographs for diagnostic value. In this course students demonstrate competency on a manikin. In addition, students expose bitewing radiographs on a peer, role-play patient. Students gain further experience in exposing radiographs on patients in the clinical portion of their program. This course also provides the background in radiographic theory required for students to make informed decisions and adjustments. Prerequisites: completion of, or concurrent enrollment in 10-508-101 and 10-508-304.

31-508-306 Dental Assistant Clinical 3 credits

Students apply skills developed in Dental and General Anatomy, Dental Health Safety, Dental Chairside, Dental Materials, Dental Radiography and Professionalism in a clinical setting with patients. Emphasizes integration of core abilities and basic occupational skills. Offered as a Hybrid class. Prerequisites: completion of or concurrent enrollment in 10-508-101, 10-508-304, 31-508-302, 10-508-103, and 31-508-307.

31-508-307 Dental Assistant Professionalism 1 credit

Prepares dental assistant students for professional success in a dental practice or another dental health care environment. Students develop professional appearance and image. More importantly, they learn to work within ethical guidelines and legal frameworks. In preparation for entering the work force, dental assistants customize or develop their portfolios and lay out an on-going professional development plan. Offered as an online class. Prerequisite: acceptance into the Dental Assistant program.

Career Potential:

- **Chairside Assistant**
Work directly with the dentist in the treatment area
- **Laboratory Assistant**
Perform laboratory functions as directed by the dentist
- **Receptionist/Office Assistant**
Responsible for the operation of the business office
- **Claims Approver**
Work for an insurance company approving dental insurance claims

With additional education and/or work experience, graduates may find employment as:

- **Dental Treatment Coordinator**
Responsible for the operation of the practice
- **Dental Laboratory Technician**
Perform the mechanical, technically skilled tasks specified by the written prescription of the dentist
- **Dental Sales Representative**
Work for a dental supply business, which provides products and services to dental offices

More detailed and updated information on this program may be available at: madisoncollege.edu. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

Madison Area Technical College provides equal opportunity in education and employment.

Dental Hygienist

Program Number: 10-508-1

Associate in Applied Science Degree

Health-Related Professions Program Cluster

School of Health Education

Program offered at Madison Campuses

For information call: (608) 246-6065, (608) 258-2470, or (800) 322-6282 Ext. 6065 or 2470

About the Program

Under the supervision of a dentist, a dental hygienist inspects the mouth, administers local anesthesia and chemotherapeutic agents, removes stains and deposits from teeth, applies preventive agents, prepares clinical and diagnostic tests, completes dental x-rays and performs many other services related to mouth care. Dental hygienists counsel patients about preventive measures such as nutrition, oral hygiene and dental care.

Dental hygienist graduates are required to successfully complete comprehensive written and clinical examinations given under the direction of the State Dentistry Examining Board, the American Dental Association's Joint Commission on National Dental Examinations and a Regional Dental Testing Service.

Admission Requirements

To review program admission program requirements and application processing dates visit the programs website at: <http://madisoncollege.edu/program-info/dental-hygienist>.

Program Requirements

Students are required to show evidence of current CPR "Professional Level" certification before beginning the first dental hygiene course. Students must maintain current CPR certification while attending the program. Students must submit a completed Health History Form to www.certifiedbackground.com by the first week of the first semester.

Requirements for Graduation

The student must achieve at least a 2.0 (C) grade in microbiology, chemistry, anatomy, physiology and all dental hygiene and general education courses.

Financial Aid Implications regarding Fourth Semester Credit Load

One of the criteria for being eligible for Financial Aid is enrolling in a minimum of 6 credits (part-time) or 12 credits (full-time). Additionally, courses not required for the program are generally not covered under financial aid. Therefore, students who may need financial aid are encouraged to save appropriate general education courses until fourth semester (English 1/Written Comm; Speech; Psychology; Sociology).

Program Courses

10-508-101 Dental Health Safety 1 credit
Prepares dental auxiliary students to respond proactively to dental emergencies, control infection, prevent disease, adhere to OSHA Standards and safely manage hazardous materials. Students also take patient vital signs and collect patient medical/dental histories. CPR certification is a prerequisite; students will be required to show proof of certification before beginning the course. Prerequisites: Students must be currently recognized/ certified in basic life support procedures for health care provider, including cardiopulmonary resuscitation prior to enrollment in this course. Prerequisite: Acceptance into the program. Co-requisites: 10-508-102 and 10-508-103



Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

	Credits	Hrs/week Lec-Lab
Pre – Dental Hygienist courses:		
The following courses must be completed prior to acceptance into dental courses:		
20-806-206 General Anatomy and Physiology* OR	4	5-4
20-806-207/208 Anatomy & Physiology 1 & 2*	(8)	(6-4)
20-806-201 General, Organic and Biological Chemistry*	5	4-2
20-806-273 Microbiology* OR	5	3-4
20-806-274 <u>General Microbiology*</u>	(5)	(3-4)
Semester Total	14	

Summer Semester (must be taken prior to fall/first semester)

10-508-101 <u>Dental Health Safety</u>	1	1-0
Semester Total	1	

First Semester

10-508-102 Oral Anatomy, Embry, Histology	4	4-0
10-508-103 Dental Radiography	2	2-2
10-508-105 Dental Hygiene Process 1	4	2-6
<u>Elective*</u>	2	E
Semester Total	13	

Second Semester

10-508-106 Dental Hygiene Process 2	4	2-7
10-508-108 Periodontology	3	3-0
10-508-109 Cariology	1	2-0
10-508-110 Nutrition and Oral Health	2	2-0
10-508-113 Dental Materials	2	1-2
20-809-231 Introduction to Psychology*	3	3-0
Semester Total	15	

Third Semester

10-508-111 General & Oral Pathology	3	3-0
10-508-112 Dental Hygiene Process 3	5	2-14
10-508-114 Dental Pharmacology	2	2-0
10-508-115 Community Dental Health	2	2-0
10-508-116 Dental Pain Management	1	2-14
20-809-203 Introduction to Sociology* OR	3	3-0
10-809-197 <u>Contemporary American Society*</u>	(3)	(3-0)
Semester Total	16	

Fourth Semester

10-508-107 Dental Hygiene Ethics & Professionalism	1	1-0
10-508-117 Dental Hygiene Process 4	4	0-14
20-801-201 English Composition 1* OR	3	3-0
10-801-195 <u>Written Communication*</u>	(3)	(3-0)
10-801-198 Speech	3	3-0
20-809-236 Applied Psychology* OR	3	3-0
20-809-237 <u>Abnormal Psychology* OR</u>	(3)	(3-0)
20-809-233 <u>Developmental Psychology* OR</u>	(3)	(3-0)
20-809-235 <u>Psychology of Personal Adjustment*</u>	(3)	(3-0)
Semester Total	14	

*General Anatomy & Physiology, General, Organic & Bio Chemistry, and Microbiology **must be** taken prior to entering the first-semester Dental Hygienist classes. Other general support classes may be taken prior to admission to the program. See statement regarding fourth semester and financial aid implications to the left.

Note: A copy of the Functional Abilities necessary to successfully complete the program of study is available on the web site.

Program Courses (continued)

10-508-102 Oral Anatomy, Embryology and Histology 4 credits

Prepares Dental Hygienist students to apply detailed knowledge about oral anatomy to planning, implementation, assessment, and evaluation of patient care. Students identify distinguishing characteristics of normal and abnormal dental, head, and neck anatomy and its relationship to tooth development, eruption and health. Pre-requisite: acceptance into program. Co-requisite: 10-508-101 and 10-508-103.

10-508-103 Dental Radiography 2 credits

Prepares dental auxiliary students to operate x-ray units and expose bitewing, periapical, extra oral, and occlusal radiographs. Emphasis is placed on protection against x-ray hazards. Students also process, mount, and evaluate radiographs for diagnostic value. In this course students demonstrate competency on a manikin. In addition, students expose bitewing radiographs on a peer, role-play patient. Students gain further experience in exposing radiographs on patients in the clinical portion of their program. This course also provides the background in radiographic theory required for students to make informed decisions and adjustments. Prerequisite: acceptance into program. Co-requisite: 10-508-101 and 10-508-102.

10-508-105 Dental Hygiene Process I 4 credits

Introduces Dental Hygiene students to the basic technical/clinical skills required of practicing Dental Hygienists including use of basic dental equipment, examination of patients, and procedures within the dental unit. Under the direct supervision of an instructor, students integrate hands-on skills with entry-level critical thinking and problem-solving skills. The course also reinforces the application of Dental Health Safety skills. Prerequisite: acceptance into program. Co-requisites: 10-508-102 and 10-508-103. Pre-/Co-requisite: 10-508-101.

10-508-106 Dental Hygiene Process 2 4 credits

This clinical course builds on and expands the technical/clinical skills student dental hygienists began developing in Dental Hygiene Process I. Under the direct supervision of an instructor, students apply patient care assessment, planning, implementation, and evaluation skills to provide comprehensive care for calculus case type 1 and 2 patients and perio case patients. This also introduces the application of fluoride and desensitizing agents, whole mouth assessments, comprehensive periodontal examinations, application of sealants, and patient classification. Students also begin performing removal of supragingival stain, dental plaque, calcified accretions, and deposits. In addition, they gain further experience in exposing radiographs on patients. Prerequisites: all listed Pre-Dental and first semester courses. Co-requisites: 10-508-108, 10-508-109, 10-508-110, and 10-508-113.

10-508-107 Dental Hygiene Ethics & Professionalism 1 credit

Helps student dental hygienists develop and apply high professional and ethical standards. Students apply the laws that govern the practice of dental hygiene to their work with patients, other members of a dental team and the community. Emphasis is placed on maintaining confidentiality and obtaining informed consent. Students enhance their ability to present a professional appearance. Pre-requisites: all Pre-Dental courses, first, second and third semester Dental Hygienist classes. Co-requisites: 10-508-117. Pre-/Co-requisites: all required general education classes.

10-508-108 Periodontology 3 credits

This course prepares student dental hygienists to assess the periodontal health of patients, plan prevention and treatment of periodontal disease, and to evaluate the effectiveness of periodontal treatment plans. Emphasis is placed on the recognition of the signs and causes of periodontal disease and on selection of treatments modalities that minimize risk and restore periodontal health. Prerequisites: all listed Pre-Dental and first semester courses. Co-requisites: 10-508-106, 10-508-109, 10-508-110 and 10-508-113.

10-508-109 Cariology 1 credit

This course focuses on the characteristics and contributing factors of dental decay. Dental Hygiene students help patients minimize caries risk by developing treatment plans, communicating methods to patients, and evaluating treatment results. Pre-requisites: all listed Pre-Dental and first semester courses. Co-requisites: 10-508-106, 10-508-108, 10-508-110 and 10-508-113.

10-508-110 Nutrition and Oral Health 2 credits

Prepares student dental hygienists to counsel patients about diet and its impact on oral health. Students learn to distinguish between balanced and unbalanced diets and to construct diets that meet the needs of patients with compromised dental/oral health. Students also learn to counsel patients about the effect of eating disorders on dental health. Prerequisite: all listed Pre-Dental and first semester courses. Co-requisites: 10-508-106, 10-508-108, 10-508-109, and 10-508-113.

10-508-111 General and Oral Pathology 3 credits

This course prepares the student dental hygienist to determine when to consult, treat or refer clients with various disease, infection or physiological conditions. Students learn to recognize the signs, causes, and implications of common pathological conditions including inflammatory responses, immune disorders, genetic disorders, developmental disorders of tissues and cysts, oral tissue trauma, and neoplasm of the oral cavity. Pre-requisite: all listed Pre-Dental, first and second semester courses. Co-requisites: 10-508-112, 10-508-114, 10-508-115, and 10-508-116.

10-508-112 Dental Hygiene Process 3 5 credits

This clinical course builds on and expands the technical/clinical skills student dental hygienists developed in Dental Hygiene Process II. In consultation with the instructor, students apply independent problem-solving skills in the course of providing comprehensive care for calculus case type 1, 2, and 3 patients and perio case type 0, I, II, and III patients. This also introduces root detoxification using hand and ultrasonic instruments, a selection of dental implant prophylaxis treatment options, and administration of chemotherapeutic agents. Students also adapt care plans in order to accommodate patients with special needs. Pre-requisite: all listed Pre-Dental, first and second semester courses. Co-requisites: 10-508-111, 10-508-114, 10-508-115, and 10-508-116.

10-508-113 Dental Materials 2 credits

Prepares dental auxiliary students to handle and prepare dental materials such as liners, bases, cements, amalgam, resin restorative materials, gypsum products and impression materials. Students also learn to take alginate impressions and clean removable appliances. Pre-requisite: all listed Pre-Dental and first semester courses. Co-requisites: 10-508-106, 10-508-108, 10-508-109, and 10-508-110.

10-508-114 Dental Pharmacology 2 credits

Prepares student dental hygienists to select safe and effective patient premedication and within the scope of dental hygiene practice. Students will also learn to recognize potential pharmacological contraindications for specific patients and to take measures to avoid negative impact or alert other members of the dental team to possible negative impact. Pre-requisite: all listed Pre-Dental, first and second semester courses. Co-requisites: 10-508-111, 10-508-112, 10-508-115 and 10-508-116.

10-508-115 Community Dental Health 2 credits

This course prepares the Dental Hygienist student to play a proactive role in improving the dental health of community members of all ages. Students perform and interpret dental health research to determine community dental health needs. Prerequisites: all listed Pre-Dental, first and second semester courses. Co-requisites: 10-508-111, 10-508-112, 10-508-114, and 10-508-116.

10-508-116 Dental Pain Management 1 credit

This course prepares the student dental hygienist to work within the scope of dental hygiene practice to manage pain for dental patients. Students learn to prevent and manage common emergencies related to administration of local anesthesia, prepare the armamentarium, and administer local anesthesia. The course also addresses the recommendation of alternative pain control measures. Pre-requisites: All listed Pre-Dental, first & second semester courses. Co-requisites: 10-508-111, 10-508-112, 10-508-114, and 10-508-115.

10-508-117 Dental Hygiene Process 4 4 credits

This clinical course builds on and expands the technical/clinical skills student dental hygienists developed in Dental Hygiene Process III. With feedback from the instructor, students manage all aspects of cases in the course of providing comprehensive care for calculus case type 0, 1, 2, and 3 patients and for perio case type 0 I, II, and III patients. Emphasizes maximization of clinical efficiency and effectiveness. Prepares student dental hygienists to demonstrate their clinical skills in a formal examination situation. Prerequisites: all Pre-Dental courses, first, second & third semester Dental Hygienist classes. Co-requisites: 10-508-107. Pre-/Co-requisites: all required general education classes.

Career Potential:

▪ **Dental Hygienist**

With additional education and/or work experience, graduates may find employment as:

- **Dental Hygiene Instructor**
- **Public Health Hygienist**
- **Dental Laboratory Technician**
- **Dental Sales Representative**
- **Member of Dental Examining Board**
- **Public School Hygienist**
- **Dental Hygiene Administrator in hospital-type setting**

More detailed and updated information on this program may be available at: madisoncollege.edu. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

Madison Area Technical College provides equal opportunity in education and employment.

Rev. 03/15

Diesel Equipment Technology

Program Number: 10-412-1

Associate in Applied Science Degree

Transportation Program Cluster

School of Applied Science, Engineering, and Technology

Program offered at Madison Campuses

For information call:

(608) 246-6800 or (800) 322-6282 Ext. 6800

About the Program

The associate-degree Diesel Equipment Technology program (Top Tech) is designed to meet the needs of today's diesel industry—which is rapidly changing due to electronically controlled systems, computers and on board diagnostics. Today's newest concerns are with diesel engine exhaust emissions. Dealerships and fleets need technicians with advanced diagnostic, troubleshooting and critical thinking skills. Top Tech, a Madison College-industry partnership, allows companies to sponsor students as paid interns. The on-the-job training builds technical expertise and helps students learn to use sophisticated equipment to diagnose and correct problems. In addition, the program's management and communication courses will help graduates qualify for promotions throughout their careers.

Trucking is one of the fastest-growing industries in the U.S. In Wisconsin, one out of seven people work in the manufacture, distribution, maintenance or commercial use of motor vehicles. Agriculture and construction are also major portions of Wisconsin's economy and require trained technicians to keep modern equipment up and running. All areas of the diesel industry are experiencing shortages of qualified technicians.

Students learn Automotive Service Excellence (ASE) and Association of Diesel Specialists (ADS) standards: to repair engines, transmissions, drivelines, electrical, electronic, hydraulic systems, fuel, brake, air conditioning and transport refrigeration systems; to adjust suspensions and align wheels and to perform maintenance and tune-ups. Students are trained in simulated shop environments and evaluated like actual employees.

The program is a National Automotive Technicians Education Foundation/NATEF/ASE master certified medium/heavy truck program, and certified as a "TECH SMART" school by ADS. The Association of Diesel Specialists provides scholarships and program support. This program also works with the "2001" Diesel Consortium of approximately 40 companies and developed the Top Tech educator/student industry partnership.

Admissions Requirements

To review admissions program requirements and application processing dates visit the programs website at: <http://madisoncollege.edu/program-info/diesel-equipment-technology>.

Unique Requirements for Graduation

Students must meet two 2.0 GPA requirements to graduate. 1.) GPA for entire program must be 2.0 or above; 2.) GPA of combined occupational courses (412) must be 2.0 or above.

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

FIRST YEAR

First Semester		Credits	Hrs/week Lec-Lab
10-890-102	College Success and Study Skills.....	2	2-0
10-412-137	Preventive Maintenance Inspections	4	1-4
10-412-144	Fundamental Diesel Electrical/ Electronics Systems*	3	4-9
10-412-145	Electrical/Electronics Systems Diagnostics*	3	4-9
10-442-126	Metal Repair Techniques	2	2-2
10-804-107	College Math.....	3	3-0
Semester Total		17	

Second Semester

10-412-112	Mobile Hydraulics	3	2-2
10-412-155	Heavy Duty Drivetrains*	4	4-14
10-412-164	Brake and Suspension Systems*	4	5-15
10-801-195	Written Communication	3	3-0
10-809-197	Contemporary American Society	3	3-0
Semester Total		17	

Interim/Summer Semester

10-412-190	Diesel Equipment Lab Experience 1**	1	1-35
10-412-195	Occupational Experience (432 hrs.).....	2	0-48
Total		3	

SECOND YEAR

First Semester

10-412-125	Cab Climate Control/Refrigeration Systems	3	2-3
10-412-184	Diesel Engine Technology.....	2	1-3
10-412-185	Diesel Engine Repair.....	4	4-10
10-801-197	Technical Reporting.....	3	3-0
10-806-139	Survey of Physics	3	2-2
Semester Total		15	

Second Semester

10-412-176	Diesel Fuel Systems*	4	5-10
10-412-177	Diesel Engine Diagnostics*	2	3-5
10-412-138	Diesel Shop Management	2	2-0
10-412-178	Diagnostic Strategies.....	2	1-2
10-412-188	Electronic Control Systems	2	3-4
10-809-195	Economics	3	3-0
10-809-199	Psychology of Human Relations	3	3-0
Semester Total		18	

* Meets for 9 weeks.

** Meets for 1 week (36 hours).

Notes:

- Prerequisites can be waived with program director approval.
- Advanced standing may be granted by the program director and Center dean.
- Certain associate degree or higher post-secondary courses specific to the curriculum may substitute for courses upon approval of program director and Center dean.
- Entrance at nine-week intervals with advanced standing and approval of Center dean.

Note: Students are placed in English or mathematics courses based on their scores on the COMPASS or ASSET test or on completion of the appropriate prerequisite/s.



Program Courses

10-412-112 Mobile Hydraulics 3 credits

Prepares the student with the knowledge and skills needed to adjust, diagnose, service and repair mobile hydraulic systems found on trucks and construction equipment.

10-412-125 Cab Climate Control/Refrigeration Systems 3 credits

Lectures/labs provide skills to diagnose, maintain and service cab climate control and transport refrigeration equipment found on truck trailers and off-road equipment.

10-412-137 Preventative Maintenance Inspections 4 credits

This course will provide the opportunity to perform preventative maintenance inspections and conduct minor repairs on heavy-duty trucks and equipment. Also included will be preparation for taking both the written portion and practical Commercial Driver's License (CDL) test. As part of the course requirements, students will take the written tests at the Department of Motor Vehicles (DMV) test center. Co-requisite: 10-412-144.

10-412-138 Diesel Shop Management 2 credits

The student will gain the knowledge needed to function in a typical service department setting. The student will learn what it takes to manage a service department, the costs involved in running the department and the day-to-day problems that arise in the service department. General business operational procedures, record keeping and cost effectiveness will also be part of this course. Prerequisites: 10-412-137, 10-412-144, 10-412-145, 10-412-112, 10-412-155, and 10-412-164.

10-412-144 Fundamental Diesel Electrical/Electronic Systems 3 credits

Theory and lab experiences in this course are designed to introduce the student to the diesel electrical/electronic systems used on today's modern trucks and construction equipment. Fundamental theory of electricity and electronics, troubleshooting techniques, use of digital multimeter and current clamp, types of electrical circuits, wiring, components, batteries and the use of wiring diagrams will be covered.

10-412-145 Electrical/Electronic Systems Diagnostics 3 credits

Theory and laboratory experiences in this course are designed to give the student the knowledge and skills needed to diagnose, service, and repair heavy-duty electrical systems found on today's modern trucks and off-road equipment.

10-412-155 Heavy Duty Drivetrains 4 credits

This course prepares the student with the knowledge and skills needed to adjust, diagnose, maintain, service and repair heavy duty drivetrains found on trucks and construction equipment.

10-412-164 Brake and Suspension Systems 4 credits

Prepares the student with the knowledge and skills needed to adjust, diagnose, service and repair heavy duty brakes, and suspension systems. Students will also perform vehicle alignment procedures and utilize various alignment equipment.

10-412-176 Diesel Fuel Systems 4 credits

Lectures and labs allow students to diagnose, service and repair diesel fuel systems found on trucks, and agricultural equipment. Prerequisites: 10-412-137, 10-412-144, 10-412-145, 10-412-112, 10-412-155, 10-412-164.

10-412-177 Diesel Engine Diagnostics 2 credits

Lectures and labs use the latest in diagnostic equipment to evaluate engine performance and diagnose power complaints on mechanical and computer controlled diesel fuel injection systems. Prerequisites: 10-412-137, 10-412-144, 10-412-155, 10-412-164 and Co-requisite: 10-412-188.

10-412-178 Diagnostic Strategies 2 credits

Explores the logical thought process used analyzing and diagnosing system malfunctions and performance problems. Practical hands-on experiences of diagnostic and problem solving techniques will be included. Also included will be evaluating failures, classifying failures, problems and documentation of findings.

10-412-184 Diesel Engine Technology 2 credits

Study in this course will allow the student to develop a basic knowledge of design, construction and operating principles of the diesel engine. Service, maintenance and the types of repairs made on diesel engines and diesel engine support systems will be a major emphasis of the course. Prerequisites: 10-412-137, 10-412-144, 10-412-145, 10-412-112, 10-412-155, 10-412-164, and Co-requisite: 10-412-185.

10-412-185 Diesel Engine Repair 4 credits

Lectures and labs teach students to maintain, service and repair diesel engines and engine support systems. The course also includes precision measuring, failure analysis and parts inspection. Prerequisites: 10-412-137, 10-412-144, 10-412-145, 10-412-112, 10-412-155, 10-412-164 and Co-requisite: 10-412-184.

10-412-188 Electronic Control Systems 2 credits

This course provides the student with the experience needed to diagnose and service modern electronic control systems used on trucks and construction equipment. The course includes electronic controlled diesel engines, ABS brake systems, electronic controlled transmissions and other computer controlled electronic vehicle systems. Prerequisites: 10-412-137, 10-412-144, 10-412-145, 10-412-155, 10-412-164 and Co-requisite: 10-412-177.

10-412-190 Diesel Equipment Lab Experience 1 1 credit

Students service various trucks, construction and industrial equipment. Emphasizes daily shop operations, procedures and safe work habits. Simulated on-the-job experiences develop and apply students' knowledge and skills. Prerequisite: All first year program courses.

10-412-195 Occupational Experience 2 credits

As interns, students work on electrical/electronic systems, vehicle and equipment maintenance, heavy duty brakes, suspensions, drive trains and general shop maintenance. Types of jobs and competencies employed may vary depending on what area of the industry the employer represents. Technical competencies for this course may be performed either alone, as an experienced technician's helper or a combination thereof. Prerequisite: All first year program courses.

10-442-126 Metal Repair Techniques 2 credits

This course covers safety, layout and measurement, grinding, drill press and lathe operation, filing, threading, properties of metals, oxy-acetylene welding, brazing and cutting, and SMAW, GMAW, GTAW and FCAW.

Career Potential:

- **Diesel Equipment Technicians**
Use sophisticated equipment to analyze and adjust engine performance and do tests and service to meet emissions standards.
 - **Electronic Systems Diagnostic Specialists**
Test, analyze, service and repair computerized and electronic systems.
 - **Engineering Assistants**
Work with engineers and manufacturers to test and adjust prototype engines and equipment.
 - **Field Service Representatives**
Are experts on specific equipment. Travel to dealerships to solve unique problems.
 - **Assistant Service Managers**
Assist manager, meet customers and help technicians diagnose problems.
 - **Fleet Maintenance Managers**
General maintenance, scheduling, inspections, repairs and keeping vehicle records.
- With additional education and/or experience, graduates may find employment as:
- **Service Writers or Managers**
 - **Shop Foremen**
 - **Team Leaders**
 - **DOT Inspectors**
 - **Factory Service Representatives**
 - **Equipment Sales Specialists**
 - **Research and Development Technicians**

More detailed and updated information on this program may be available at: madisoncollege.edu. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

Madison Area Technical College provides equal opportunity in education and employment.

Diesel and Heavy Equipment Technician

Two-Year Technical Diploma

Program Number: 32-412-1

Transportation Program Cluster

School of Applied Science, Engineering, and Technology

Program offered at Madison Campuses

For information call:

(608) 246-6800 or (800) 322-6282 Ext. 6800

About the Program

The Diesel and Heavy Equipment Technician Program is a two-year diploma program for today's diesel industry. Trucking is one of the fastest-growing industries in the U.S., and all areas of the diesel industry are experiencing shortages of qualified technicians.

One out of seven people in Wisconsin work in the manufacture, distribution, maintenance or commercial use of motor vehicles. Agriculture and construction are other major portions of Wisconsin's economy and need trained technicians to keep modern equipment running.

Students learn to repair engines, transmissions, drivelines, electrical, electronic, hydraulic, fuel, brakes, air conditioning and transport refrigeration systems; adjust suspensions and wheel alignments; and perform maintenance and tune-ups.

Students are trained in simulated shop environments and are evaluated for attendance, work quality, efficiency, safety, initiative and cooperation as if they were actual employees. The program is also certified as an Association of Diesel Specialists (ADS) "TECH SMART" school. The Association of Diesel Specialists provides scholarships and program support.

Admissions Requirements

To review admissions program requirements and application processing dates visit the programs website at: <http://madisoncollege.edu/program-info/diesel-heavy-equipment-technician>.

Unique Requirements for Graduation

Students must meet two 2.0 GPA requirements to graduate. (1) GPA for entire program must be 2.0 or above; (2) GPA of combined occupational courses (412) must be 2.0 or above.

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

FIRST YEAR

First Semester	Credits	Hrs/week Lec-Lab
10-890-102 College Success and Study Skills.....	2	2-0
10-412-140 Introduction to Diesel Technology.....	1	2-2
10-412-155 Heavy Duty Drivetrains*.....	4	4-14
10-412-164 Brake and Suspension Systems*.....	4	5-15
10-442-126 Metal Repair Techniques.....	2	1-2
10-104-189 Customer Relations.....	2	2-0
31-804-379 Vocational Math 1.....	1	2-0
Semester Total	16	

Second Semester

10-412-137 Preventive Maintenance Inspections.....	4	1-4
10-412-144 Fundamental Diesel Electrical/ Electronics Systems*.....	3	4-9
10-103-133 Excel-Beginning.....	1	0.25-1.5
10-103-137 Word-Beginning.....	1	0.25-1.5
10-412-145 Electrical/Electronics Systems Diagnostics*.....	3	4-9
31-806-363 Science 1.....	2	2-2
Semester Total	14	

SECOND YEAR

First Semester

10-412-138 Diesel Shop Management.....	2	3-0
10-412-176 Diesel Fuel Systems*.....	4	5-10
10-412-177 Diesel Engine Diagnostics*.....	2	3-5
10-412-178 Diagnostic Strategies.....	2	1-2
10-412-188 Electronic Control Systems*.....	2	3-4
Semester Total	12	

Second Semester

10-412-112 Mobile Hydraulics.....	3	2-2
10-412-125 Cab Climate Control/Refrigeration Systems.....	3	2-3
10-412-184 Diesel Engine Technology.....	2	1-3
10-412-185 Diesel Engine Repair.....	4	4-10
Semester Total	12	

*Meets for 9 weeks

Notes:

- Safety procedures required in all labs.
- Prerequisites can be waived with Center approval.
- Advanced standing may be granted by program director and Center dean.
- Certain associate degree or higher post-secondary courses specific to the curriculum may substitute for courses upon approval of program director and Center dean.

Note: Students are placed in English or mathematics courses based on their scores on the COMPASS or ASSET test or on completion of the appropriate prerequisite/s.



Program Courses

10-412-112 Mobile Hydraulics 3 credits

Prepares the student with the knowledge and skills needed to adjust, diagnose, service and repair mobile hydraulic systems found on trucks and construction equipment. Prerequisites: 10-412-137, 10-412-140, 10-412-144, 10-412-145, 10-412-155, and 10-412-164.

10-412-125 Cab Climate Control/ Refrigeration Systems 3 credits

Lectures/labs provide skills to diagnose, maintain, and service cab climate control and transport refrigeration equipment found on truck trailers and off-road equipment. Prerequisites: 10-412-137, 10-412-140, 10-412-144, 10-412-145, 10-412-155, and 10-412-164; Co-requisite: 10-412-112.

10-412-137 Preventative Maintenance Inspections 4 credits

This course will provide the opportunity to perform preventive maintenance inspections and conduct minor repairs on heavy-duty trucks and equipment. Also included will be preparation for taking both the written portion and practical Commercial Driver's License (CDL) test. As part of the course requirements, students will take the written tests at the Department of Motor Vehicles (DMV) test center.

10-412-138 Diesel Shop Management 2 credits

The student will gain the knowledge needed to function in a typical service department setting. The student will learn what it takes to manage a service department, the costs involved in running the department and the day-to-day problems that arise in the service department. General business operational procedures, record keeping and cost effectiveness will also be part of this course. Prerequisites: 10-412-137, 10-412-140, 10-412-144, 10-412-145, 10-412-155, and 10-412-164.

10-412-140 Introduction to Diesel Technology 1 credit

Includes a discussion of the job requirements, skills needed, career options, and employment opportunities in diesel equipment repair and maintenance. Introduces shop procedures, safety practices, tools and the use of service manuals.

10-412-144 Fundamental Diesel Electrical/ Electronic Systems 3 credits

Theory and lab experiences in this course are designed to introduce the student to the diesel electrical/electronic systems used on today's modern trucks and construction equipment. Fundamental theory of electricity and electronics, troubleshooting techniques, use of digital multimeter and current clamp, types of electrical circuits, wiring, components, batteries and the use of wiring diagrams will be covered.

10-412-145 Electrical/Electronic Systems Diagnostics 3 credit

Theory and laboratory experiences in this course are designed to give the student the knowledge and skills needed to diagnose, service, and repair heavy-duty electrical systems found on today's modern trucks and off-road equipment. Co-requisite: Co-requisite: 10-412-144.

10-412-155 Heavy Duty Drivetrains 4 credits

This course prepares the student with the knowledge and skills needed to adjust, diagnose, maintain, service and repair heavy duty drivetrains found on trucks and construction equipment.

10-412-164 Brake and Suspension Systems 4 credits

Prepares the student with the knowledge and skills needed to adjust, diagnose, service and repair heavy duty brakes, and suspension systems. Students will also perform vehicle alignment procedures and utilize various alignment equipment.

10-412-176 Diesel Fuel Systems 4 credits

Lectures and labs allow students to diagnose, service, and repair diesel fuel systems found on trucks, off-road and agricultural equipment. Prerequisites: 10-412-137, 10-412-140, 10-412-144, 10-412-145, 10-412-155, and 10-412-164.

10-412-177 Diesel Engine Diagnostics 2 credits

Lectures and lab use the latest in diagnostic equipment to evaluate engine performance and diagnose power complaints on mechanical and computer controlled diesel fuel injection systems. Prerequisites: 10-412-137, 10-412-140, 10-412-144, 10-412-155, and 10-412-164; Co-requisite: 10-412-188.

10-412-178 Diagnostic Strategies 2 credits

Explores the logical thought process used analyzing and diagnosing system malfunctions and performance problems. Diagnostic and problem solving techniques will be included. Also included will be evaluating failures, classifying failures, problems and documentation of findings. Prerequisites: 10-412-137, 10-412-140, 10-412-144, 10-412-145, 10-412-155, and 10-412-164.

10-412-184 Diesel Engine Technology 2 credits

Study in this course will allow the student to develop a basic knowledge of design, construction and operating principles of the diesel engine. Service, maintenance and the types of repairs made on diesel engines and diesel engine support systems will be a major emphasis of the course. Prerequisite: 10-412-137, 10-412-140, 10-412-144, 10-412-145, and 10-412-155, 10-412-164 and Co-requisite: 10-412-185.

10-412-185 Diesel Engine Repair 4 credits

Lectures and labs teach students to maintain, service and repair diesel engines and diesel engine support systems. The course also includes precision measuring, failure analysis and parts inspection. Prerequisite: 10-412-137, 10-412-140, 10-412-144, 10-412-145, 10-412-155, 10-412-164 and Co-requisite: 10-412-184.

10-412-188 Electronic Control Systems 2 credits

This course provides the student with the experience needed to diagnose and service modern electronic control systems used on trucks and construction equipment. The course also includes electronic controlled diesel engines, ABS brake systems, electronic controlled transmissions, and other computer controlled electronic vehicle systems. Prerequisites: 10-412-137, 10-412-140, 10-412-144, 10-412-145, 10-412-155, and 10-412-164; Co-requisite: 10-412-177. Note: Students must complete 10-412-177 in the first 9 weeks to continue into this course.

10-442-126 Metal Repair Techniques 2 credits

This course covers safety, layout and measurement, grinding, drill press and lathe operation, filing, threading, properties of metals, oxy-acetylene welding, brazing and cutting, and SMAW, GMAW, GTAW and FCAW.

Additional required course descriptions may be found on the Madison College Website.

Career Potential:

- **Diesel and Heavy Equipment Technicians**
Diagnose, repair and service medium and heavy duty trucks, light and heavy construction equipment or agricultural equipment and machinery.
 - **Fleet Maintenance Technicians**
Keep records on fleet vehicles and perform general maintenance, inspections and repairs.
 - **Fuel Injection Technicians**
Diagnose, repair and service fuel systems and governing devices on all types of diesel engines.
 - **Alignment Specialists**
Use computerized alignment equipment to diagnose, repair and adjust medium and heavy duty truck suspension systems.
 - **Engine Rebuild Specialists**
Disassemble, inspect, reassemble and test engines to factory specifications with dynamometer.
- With additional education and/or experience, graduates may find employment as:
- **Service Writers or Managers**
 - **Shop Foremen**
 - **Team Leaders**
 - **DOT Inspectors**
 - **Factory Service Representatives**
 - **Fleet Maintenance Managers**

More detailed and updated information on this program may be available at madisoncollege.edu. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

Madison Area Technical College provides equal opportunity in education and employment.

Digital Forensics Certificate

Program Number: 90-504-1

Certificate

Protective Services Program Cluster

School of Human and Protective Services

Program offered at Truax Campus

For information call: (608) 246-5277 or
(800) 322-6282 Ext. 5277

About the Program

The Digital Forensics Certificate is a certificate program for individuals interested in pursuing careers in digital forensics for law enforcement agencies or a private company. The certificate is designed for working law enforcement professionals and IT security personnel. This certificate will give the student a solid foundation in the area of digital forensics.

Digital Forensics is the application of forensic science techniques to the acquisition and analysis of evidence that exists in digital form (e.g. evidence found in files on hard drives, in emails, in network activity, etc.).

In an age when computers hold the key to everything from terrorist plots to accounting scandals, nearly every crime can potentially leave digital evidence. They also serve as record-keepers of conversations, files and transactions. Computer forensic analysts work for a variety of organizations in pursuit of that digital evidence.

As a Computer & Digital Forensics student, you'll learn about the law, the digital investigative process, and computer and network technology. Develop the specialized skills to recover, preserve, and evaluate forensic evidence to support civil, criminal, and internal investigations. Focus on how to discover and document violations of computer usage in corporate and public agency settings. Learn the laws and procedures to successfully capture criminal use of the internet, email, and electronic files.

Prior to applying online, students must contact the Digital Forensics Program Director, Tim Krueger at 608-246-5277 or email tjkrueger@madisoncollege.edu.

Required Knowledge

Applicants must have a good working knowledge of computers. This can be self taught or through training and education.

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

		Credits	Hrs/week Lec-Lab
First Semester			
10-504-185	Introduction to Computer Forensics Δ	3	3-0
10-504-186	Introduction to Internet & Network Concepts Δ	3	3-0
10-504-196	Ethics	1	1-0
Second Semester			
10-504-187	Legal Issues and Digital Evidence.....	3	3-0
10-504-189	Introduction to Video Evidence Δ	3	3-0
10-504-195	Small Devices Δ	3	3-0
Third Semester			
10-504-188	Advanced Computer Forensics/Practicum Δ	3	2-2
		3	
Total		19	

Δ Prerequisites required.

Admission Requirements

To review program admission requirements and application processing dates, visit the program's website at: <http://madisoncollege.edu/program-info/digital-forensics-certificate>.

Requirements for Completion

The certificate will be awarded upon completion of the requirements with a minimum of a 2.0 grade point average and no course grade lower than a C. The certificate will be awarded when completion of all requirements is verified.



Certificate Courses

Digital Forensics Course Prerequisites

Students enrolling in the courses identified within this program must meet the following requirements: High school diploma or GED/HSED with a grade point average of 2.0 or higher.

10-504-185 Introduction to Computer Forensics 3 credits

Introductory computer forensics concepts, terminology and management of digital evidence. This course will cover the identification and collection and preservation of computer related and digital evidence, the acquisition of digital evidence, basic forensic analysis concepts and presentation of digital evidence to the investigator, the DA's office, to Judges and to Juries. The course will also cover the incorporation of digital evidence into the investigation and prosecution of criminal investigations. Overview of Forensic Toolkit & Ultimate ToolKit, Overview of EnCase, Overview of Paraben's Device Seizure, Overview of various cell phone applications, Overview of other available tools for forensically sound preview and acquisition (Helix, Knoppix, etc.) Overview of live acquisition tools. Overview of forensic hardware solutions – forensic computers, hardware writes blocking tools. Prerequisite: Criminal History Check and admitted to the program.

10-504-186 Introduction to Internet & Networking Concepts 3 credits

This course provides an introduction to computer networking in the context of digital investigations. It will include a review of the Internet topology, Internet Protocol (IP) 4, 6 and Ethernet addressing schemes, how to research network contact information and reputation as well as studying network communications between applications and the network. Students will learn how determine which network ports applications are using, scan network devices with NMAP as well as capture, view and search Internet traffic with Wireshark. This course will also review capturing computer memory and subsequently reviewing it with Volatility to learn about any past network activity. The course will also cover email and web browser forensics using Encase and Paraben tools. Students will also learn background on anonymous email and web browsing as well as collecting investigative information from log files. Prerequisite: Criminal History Check and admitted to the program.

10-504-189 Introduction to Video Evidence 3 credits

Video is one of the most powerful tools to help law enforcement investigate and solve crimes. Video is one of the most prevalent forms of evidence collected in modern criminal investigations. This course is designed to introduce the student to various aspects of video evidence within the criminal justice system. Students will gain an overview of the various types of video evidence and their respective roles in criminal investigations. Basic, practical knowledge and experience will be gained in video evidence collection, image comparison, report writing and court testimony. Competency will be tested through quizzes, written tests and hands-on performance and moot court. Prerequisite: Criminal History Check and admitted to the program.

10-504-196 Ethics 1 credit

Examines the ethical issues related to person involved in the career choice of digital forensics.

10-504-187 Legal Issues and Digital Evidence 3 credits

4th Amendment, SCA, Search warrants (computer, online), Subpoenas, Preservation Letters & 2703, Patriot Act as it affects digital evidence, Dealing with ISPs, Wisconsin Statutes covering computer related crimes (Child Pornography, Use of Computer to facilitate child sex crime, child enticement, stalking, computer crimes statute) Federal Computer Crimes statutes. Corporate law and e-Discovery issues. Digital evidence in the courtroom – presentation of data retrieved from computers or online sources. Expert Testimony in the courtroom.

10-504-195 Small Devices 3 credits

Includes cell phones, smart phones, PDAs, and related storage devices, are a growing source of digital evidence in the forensics profession, and present unique challenges for forensic examiners. This course will introduce fundamental concepts in mobile communications, including an overview of cell phone technology and networks, sources of potential evidence, evidence handling considerations, and small device forensic processes, and documentation techniques. Students will have the opportunity to work hands on with small device forensic tools and technology. Prerequisites: 10-504-185, and 10-504-186.

10-504-188 Advanced Computer Forensics Concepts/Practicum 3 credits

Overview of advanced computer forensics topics such as encryption, password cracking tools, data hiding techniques, steganography, anti-forensic tools and their effect on investigations, forensic problem solving (reconstruction of web pages from web cache, reverse engineering of P2P networks, images, etc.) INFO2 (Recycle Bin) Files, In depth discussion of file carving & Windows artifacts, hidden partitions, thumbs.db files, advanced MAC (modified, accessed, created) time discussion, metadata. Microsoft Vista & BitLocker, X Box Forensics, Digital Deception. This course will also cover an overview of how Cell Phone networks, Cell Phones, Personal Data Assistants, and other portable devices work. This course would be a culmination of skills from previous courses. Students would be expected to take a case study from beginning to end of investigation and court process. The students would receive a case study problem, and would have to write incident reports, collect evidence, acquire digital evidence, perform forensic examination of several types of digital evidence, write reports regarding the forensic exams, participate in trial prep, and courtroom testimony. Prerequisite: All courses must be completed prior to taking this class.

Career Potential:

- Digital Forensics Unit in a Law Enforcement Agency
- Enhance skills for a IT security professional
- Computer Forensic Analyst
- Digital Forensic Technician
- Cyber Security Analyst
- Cyber Security Specialist

More detailed and updated information on this program may be available at: madisoncollege.edu. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

Madison Area Technical College provides equal opportunity in education and employment.

Rev: 04/15

One-Year Technical Diploma

Business and Marketing Program Cluster

School of Business and Applied Arts

For Information Call:
(608) 246-6003 or (800) 322-6282 Ext. 6003

About the Program

Digital Marketing is a one year technical diploma designed for people who desire to incorporate cutting-edge marketing techniques into an organization's new and existing marketing activities. This program focuses on digital and new media to include: mobile, social, and e-commerce.

Admissions Requirements

To review admissions program requirements and application processing dates visit the programs website at:
<http://madisoncollege.edu/program-info/digital-marketing>.

APPLICATION PROCESS COMING SOON.
PLEASE CONTINUE TO CHECK ON OUR WEBSITE: <http://madisoncollege.edu/digital-marketing-admission-requirements>

Program Courses

10-104-102 Marketing Principles 3 credits

This foundation course introduces students to the marketing process and how it operates in today's dynamic organizations. The entire marketing mix is examined on a broad scale. Topics include: market segmentation and targeting strategies, market research, consumer behavior, product development, pricing policies, distribution and an overview of promotion. It provides a comprehensive overview of the exciting world of marketing.

10-104-103 Marketing Research 3 credits

Businesses today need current, accurate information upon which to base their decisions. In this class, students learn not only how to gather marketing information from primary and secondary sources using online and other sources, but also how to apply that information to make better marketing decisions. Prerequisites: 10-104-102, 10-103-133, 10-103-137, and 10-103-143.

10-104-114 Social Media Principles 3 credits

Social media has transformed advertising from a long-term mass medium to a one-to-one communication utilizing almost instant feedback. How businesses are using social media as advertising tools as well as how to create and deploy a social media campaign will be the main focus of this class. Additionally, the history and development of social media platforms such as Facebook, YouTube, Twitter and LinkedIn will be explored, as well as the many ethical and potential legal concerns that have arisen over these new forms of communication. Finally, the concept of viral marketing will be examined and how it allows a social message to explode a message to millions of users in a brief time.

Curriculum

Hrs/week

10-104-115 Advanced Social Media Campaigns 3 credits

The creation, execution and follow through of real-life Social Media campaigns will be the focus of this advanced class. Students will use current social media tools in conjunction with a real business to research, design, create and implement a multi-media social campaign. Previous knowledge of current social medias, including Twitter, LinkedIn, Facebook, FourSquare and other tools are essential for this class. Students will be expected to work outside of class time on the campaign. Prerequisite: 10-104-114 and instructor consent.

10-104-125 Principles of Advertising 3 credits

Students are introduced to the theory and practice of integrated marketing communications. All elements in the promotions mix are summarized but the major emphasis is on advertising. Students examine the characteristics of major media alternatives including radio, television, newspapers, magazines, outdoor, direct response and alternative media. Advertising research, planning and creativity are also explored and practiced. Prerequisite: 10-104-102.

10-104-162 Mobile Marketing (Social Media) 3 credits

Mobile internet usage continues to explode and it has been predicted that it will overtake desktop internet usage in the next five years. Successful businesses need to understand the current mobile landscape and how to harness the power of mobile marketing to reach key target markets. This survey course will examine how mobile marketing fits into your overall digital and social media strategy. We will investigate geo-marketing, localized marketing, designing for mobile media, mobile websites, mobile advertising, m-commerce and mobile spending, SMS and mobile apps. Students will develop a creative mobile marketing campaign that integrates with a traditional marketing plan.

Program Courses continued

10-104-163 Social Media Business Ethics 3 credits

The emergence and ever-changing nature of social media has resulted in many situations of personal and professional lives overlapping. This theory and research class will address key legal areas where social media policies can and will impact businesses in ethical and legal ways for both employees and businesses. Students will research past cases, current situations and how they are being addressed, as well as future potential areas of concern. Additionally, students will create documents for businesses that address how rules and policies should be implemented for social media guidelines in the workplace.

10-104-167 Social Media Mobile/Web Design 3 credits

Through extensive hands-on experience, the conceptual and practical aspects of web design are emphasized. Participants actively engage in site management, work with text, images, links, tables, layers, templates, libraries, cascading style sheets, forms, frames, behaviors, timeline and FTP protocols. In addition, proven web design techniques are emphasized, and participants are exposed to website marketing principles. Note: Previous web programming experience is not required. Prerequisites: Introduction to computers, file management, keyboarding skills, email fundamentals, basic web-browsing, and MS Word or equivalent experience.

10-104-169 Internet Marketing 3 credits

This course provides a road map for marketers to navigate the digital economy. Critical skills include the ability to master proven Internet marketing principles and concepts, and the capacity to keep pace with technological advances and industry trends. This course focuses on a comprehension of Internet marketing theory and concepts; demonstrates how concepts are applied in the real world; and emphasizes the development of advanced Internet marketing skills. Prerequisite: 10-104-102.

10-104-176 mCommerce 3 credits

mCommerce requires companies to interact on customers' terms. The ability to execute a comprehensive plan to reach customers anywhere and at any time is critical to the success of innovative organizations. This course provides participants with the tools to define mCommerce; examine how mCommerce is being conducted and managed; and explore major opportunities, limitations, issues, and risks involved with conducting business wirelessly over the Internet.

10-104-177 Mobile Apps 3 credits

The use of Application Programs, or Apps, has become common for smart-phone and tablet computer users. Businesses are now designing and running apps with as much importance (or even more) as their websites. This class will look into the different types of apps (including retail, geo-marketing, geo-fencing, human interaction, gaming, social networking, etc.) and how they each can be used as a business tool.

10-104-335 Digital Internship 1 credit

This is a required course for students enrolled in the Digital Marketing degree. Students will work with a real world company to create and execute a real digital marketing project (e-blast, social media, mobile, or SMS). Students will be required to find a company/project on their own. Instructor must approve of company/project in advance. Prerequisite: minimum grade of C or better in Marketing Principles, 10104102; Social Media Principles, 10104114; and Marketing Research, 10104103

20-801-262 Social Media Writing 3 credits

This course examines the rhetorical and publishing strategies used for innovative new media formats, in particular social media platforms. Students will look at the differences between linear and interactive writing, interactive publishing, and the role of the interactive writer. An emphasis is placed on the skills needed for quality storytelling via social media communication. Students will also learn how social media platforms can be used as researching tools (i.e. crowd sourcing), and they will implement social media research campaigns. Throughout the course, the students' writing and research work will be showcased as text, video, and audio stories published on their own Web/blog sites.

Career Potential:

- Mobile Marketing Planner
- Mobile Marketing Coordinator
- Social Media Specialist
- Marketing Coordinator
- Digital Marketing Coordinator
- Media Strategist
- Media Planner
- Media Writer
- Communications/Public Relations Specialist

More detailed and updated information on this program may be available at: madisoncollege.edu. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

Madison Area Technical College provides equal opportunity in education and employment.

Early Childhood Education

Program Number: 10-307-1

Associate in Applied Science Degree

Education Program Cluster

School of Human and Protective Services

Program offered at Downtown Education Center, Madison

For information call: (608) 245-5888 or
(800) 322-6282 Ext. 5888

About the Program

The Early Childhood Education program prepares students to work as teacher-caregivers in early childhood settings. It combines hands-on fieldwork in area centers with related academic work at the college. Graduates become responsible for the care and education of children in the birth-to-six-years age range. They create and maintain safe and healthy play environments, guide behavior, plan and implement learning activities, and work cooperatively with staff and parents.

Success in the field depends on a caring attitude, showing respect for children and adults, flexibility, good judgment, dependability and effective communication skills.

Travel to fieldwork sites is necessary and is the student's responsibility. Public transportation is readily available. Some courses in the program involve preparation of learning materials, field trips, etc. that may involve additional expenses.

Prior to taking ECE: Practicum 1, students must show evidence of a physical examination including TB test using the State of Wisconsin Department of Children and Families "Staff Health Report – Child Care Provider" form and must complete a Background Information Disclosure and Criminal History Check (CHC) prior to placement in the Early Childhood Education Practicum courses. Information obtained from the CHC may affect the ability to secure a practicum placement.

Admission Requirements

To review program admission requirements and application processing dates, visit the program's website at: <http://madisoncollege.edu/program-info/early-childhood-education>.

Requirements for Graduation

Students must achieve at least a 2.0 (C) grade in all program core courses and an overall 2.0 (C) grade point average.

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

		Credits	Hrs/week Lec-Lab
First Semester			
10-307-148	ECE: Foundations of Early Childhood Education** ***	3	3-0
10-307-151	ECE: Infant and Toddler Development** ***	3	3-0
10-307-166	ECE: Curriculum Planning** ***	3	2-2
10-307-167	ECE: Health, Safety, and Nutrition	3	3-0
10-307-174	ECE: Practicum 1** ***	3	1.5-8
10-801-195	Written Communication OR	3	3-0
20-801-201	English 1*	(3)	(3-0)
Semester Total		18	
Second Semester			
10-307-178	ECE: Multicultural Language	3	2-2
10-307-179	ECE: Child Development	3	3-0
10-307-188	ECE: Guiding Children's Behavior	3	2-2
10-307-192	ECE: Practicum 2**	3	3-8
10-801-198	Speech	3	3-0
10-809-172	Intro to Diversity Studies OR	3	3-0
20-809-252	Race and Ethnicity in the U.S.*	(3)	(3-0)
Semester Total		18	
Third Semester			
10-307-194	Mathematical Reasoning	3	2-2
10-307-195	ECE: Family and Community Relation	3	3-0
10-307-197	ECE: Practicum 3**	3	1.5-10.5
10-801-196	Oral/Interpersonal Communication OR	3	3-0
20-801-202	English 2*	(3)	(3-0)
10-809-199	Psychology of Human Relations OR	3	3-0
20-809-231	Introduction to Psychology*	(3)	(3-0)
Semester Total		15	
Fourth Semester			
10-307-187	ECE: Child Development Offering Initiative	3	3-0
10-307-198	ECE: Administering an Early Childhood Program	3	3-0
10-307-199	ECE: Practicum 4**	3	1.5-10.5
10-804-123	Math with Business Applications OR	3	3-0
20-804-201	Intermediate Algebra*	(3)	(3-0)
10-809-197	Contemporary American Society OR	3	3-0
20-809-203	Introduction to Sociology*	(3)	(3-0)
	Elective	3	E
Semester Total		18	

* College transfer equivalent courses

** Prerequisites required. Consult faculty.

Prerequisites recommended. Consult faculty.

Note: Students are placed in English or mathematics courses based on their scores on the ACT or COMPASS test or on completion of the appropriate prerequisite/s. ACT English 15-36 and ACT Reading 14-36 or COMPASS English 46-99 and COMPASS Reading 65-99 are required for the following first semester courses: ECE: Foundations of Early Childhood Education, 10-307-148; ECE: Infant and Toddler Development, 10-307-151; ECE: Curriculum Planning, 10-307-166; and ECE: Practicum 1, 10-307-174.

NOTE: Early Childhood Education courses are usually offered one semester per year as indicated above. In addition to face-to-face course offerings, some of the classes are offered in hybrid or online format. Students interested in a part-time schedule should consult the Program Director prior to registration.



Program Courses

10-307-148 ECE: Foundations of Early Childhood Education 3 credits

This course introduces you to the early childhood profession. Course competencies include: integrate strategies that support diversity and anti-bias perspectives; investigate the history of early childhood education; summarize types of early childhood education settings; identify the components of a quality early childhood education program; summarize responsibilities of early childhood education professionals; explore early childhood curriculum models. Prerequisite: appropriate COMPASS Reading and Writing/English scores.

10-307-151 ECE: Infant and Toddler Development 3 credits

In this course you will study infant and toddler development as it applies to an early childhood education setting. Course competencies include: analyze development of infants and toddlers (conception to three years); correlate prenatal conditions with development; summarize child development theories; analyze the role of heredity and the environment; examine research-based models; examine culturally and developmentally appropriate environments for infants and toddlers. Prerequisite: appropriate COMPASS Reading and Writing/English scores.

10-307-166 ECE: Curriculum Planning 3 credits

This course examines the components of curriculum planning in early childhood education. Course competencies include: examine the critical role of play; establish a developmentally appropriate environment; examine care giving routines as curriculum; develop activity plans and unit plans that promote child development and learning; analyze early childhood curriculum models. Prerequisite: appropriate COMPASS Reading and Writing/English scores.

10-307-167 ECE: Health, Safety, and Nutrition 3 credits

This course examines the topics of health, safety and nutrition within the context of the early childhood educational setting. Course competencies include: follow governmental regulations and professional standards as they apply to health, safety and nutrition; provide a safe, healthy, and nutritionally sound early childhood program; adhere to child abuse and neglect mandates; apply Sudden Infant Death Syndrome (SIDS) risk reduction strategies; incorporate health, safety and nutrition concepts into the children's curriculum.

10-307-174 ECE: Practicum 1 3 credits

In this practicum course you will learn about and apply the course competencies in an actual childcare setting. The first of four training experiences develops skill in interacting with children and staff. MATC faculty help students through periodic observation and conferences. In addition, there is a weekly discussion which focuses on what students are observing and learning in their practicum sites and on developing skills as team members. Students taking Practicum 1 must also be enrolled in at least one other Early Childhood Education course. Prerequisite: appropriate COMPASS Reading and Writing/English scores.

10-307-178 ECE: Art, Music and Language 3 credits

This course will focus on beginning level curriculum development in the specific content areas of art, music and language arts. Course competencies include: examine the critical role of play; establish a developmentally appropriate environment; develop activity plans that promote child development and learning; analyze care giving routines as curriculum; create developmentally appropriate language, literature and literacy activities; create developmentally appropriate art, music, and movement activities. Recommended prerequisite: 10-307-166.

10-307-179 ECE: Child Development 3 credits

The course examines child development within the context of the early childhood education setting. Course competencies include: analyze social, cultural and economic influences on child development; summarize child development theories; analyze development of children age three through age eight; summarize the methods and designs of child development research; analyze the role of heredity and the environment. Recommended prerequisite: 10-307-151.

10-307-187 ECE: Children with Differing Abilities 3 credits

This course focuses on the child with differing abilities in an early childhood education setting. Course competencies include: provide inclusive programs for young children; apply legal and ethical requirements including, but not limited to, ADA and IDEA; differentiate between typical and exceptional development; analyze the differing abilities of children with physical, cognitive, health/medical, communication, and/or behavioral/emotional disorders; work collaboratively with community and professional resources; utilize an individual educational plan (IEP/IFSP) for children with developmental differences; adapt curriculum to meet the needs of children with developmental differences; cultivate partnerships with families who have children with developmental differences. Recommended prerequisites: 10-307-151 and 10-307-179.

10-307-188 ECE: Guiding Children's Behavior 3 credits

This course examines positive strategies to guide children's behavior in the early childhood education setting. Course competencies include: summarize early childhood guidance principles; analyze factors that affect the behavior of children; practice positive guidance strategies; develop guidance strategies to meet individual needs; create a guidance philosophy. Recommended prerequisite: 10-307-151.

10-307-192 ECE: Practicum 2 3 credits

In this second training experience, students apply the knowledge and skills acquired in Practicum 1 and related class work under the supervision of MATC faculty and teacher-caregivers at centers. Planning and implementing activities are included and conferences are scheduled to help students. Recommended concurrent enrollment in 10-307-178 and 10-307-188. Pre-requisite: 10-307-174.

10-307-194 ECE: Math, Science and Social Studies 3 credits

This course will focus on beginning level curriculum development in the specific content areas of math, science and social studies. Course competencies include: examine the critical role of play; establish a developmentally appropriate environment; develop activity plans that promote child development and learning; create developmentally appropriate math, science and social studies activities. Recommended prerequisite: 10-307-166.

10-307-195 ECE: Family and Community Relations 3 credits

In this course you will examine the role of relationships with family and community in early childhood education. Course competencies include: analyze contemporary family patterns, trends and relationships; utilize effective communication strategies; establish ongoing relationships with families; advocate for children and families; work collaboratively with community resources. Recommended prerequisite: 10-307-188.

10-307-197 ECE: Practicum 3 3 credits

In this third training experience, students continue to develop teacher-caregiver skills. One week of head teaching is required. Pre-requisites: 10-307-174; 10-307-192; 10-307-167; 10-307-179; 10-307-188.

10-307-198 ECE: Administering an Early Childhood Education Program 3 credits

This course focuses on the administration of an early childhood education program. Course competencies include: analyze the components of an ECE facility; design an ECE program; analyze the aspects of personnel supervision; outline financial components of an ECE program; apply laws and regulations related to an ECE facility; advocate for the early childhood profession. Recommended prerequisite: 10-307-192.

10-307-199 ECE: Practicum 4 3 credits

This final training experience includes two weeks of head teaching, stresses staff-parent communication and may be designed to coordinate with student's choices of career specializations. Prerequisites: 10-307-174, 10-307-192, and 10-307-197.

Career Potential:

- **Child Care Teacher**
Work in full-day and part-day childcare programs, nursery schools and Head Start programs
- **Child Care Assistant Teacher**
Work under the supervision of a child care teacher
- **Family Child Care Provider**
Care for eight children or less in provider's home
- **Infant or Toddler Caregiver**
Care for children under two years of age
- **In-home Providers/Nanny**
Provide care in the child's home
- **Early Childhood Special Needs/Educational Assistant**
Work in public school early childhood programs, and public school four-year-olds' programs.
- **Directors/ Administrator**
Responsible for managing day care centers and planning and implementing program

More detailed and updated information on this program may be available at: madisoncollege.edu. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

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Early Childhood Education

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Success in the field depends on a caring attitude, showing respect for children and adults, flexibility, good judgment, dependability and effective communication skills.

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Admission Requirements

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Requirements for Graduation

Students must achieve at least a 2.0 (C) grade in all program core courses and an overall 2.0 (C) grade point average.

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

		Credits	Hrs/week Lec-Lab
First Semester			
10-307-148	ECE: Foundations of Early Childhood Education** ***	3	3-0
10-307-151	ECE: Infant and Toddler Development** ***	3	3-0
10-307-166	ECE: Curriculum Planning** ***	3	2-2
10-307-167	ECE: Health, Safety, and Nutrition	3	3-0
10-307-174	ECE: Practicum 1** ***	3	1.5-8
10-801-195	Written Communication OR	3	3-0
20-801-201	English 1*	(3)	(3-0)
Semester Total		18	
Second Semester			
10-307-178	ECE: Art, Music, and LanguageΔ	3	2-2
10-307-179	ECE: Child DevelopmentΔ	3	3-0
10-307-188	ECE: Guiding Children's BehaviorΔ	3	2-2
10-307-192	ECE: Practicum 2**	3	3-8
10-801-198	Speech OR	3	3-0
10-809-172	Intro to Diversity Studies OR	3	3-0
20-809-252	Race and Ethnicity in the U.S.*	(3)	(3-0)
Semester Total		18	
Third Semester			
10-307-194	ECE: Math, Science, and Social StudiesΔ	3	2-2
10-307-195	ECE: Family and Community RelationsΔ	3	3-0
10-307-197	ECE: Practicum 3**	3	1.5-10.5
10-801-196	Oral/Interpersonal Communication OR	3	3-0
20-801-202	English 2*	(3)	(3-0)
10-809-199	Psychology of Human Relations OR	3	3-0
20-809-231	Introduction to Psychology*	(3)	(3-0)
Semester Total		15	
Fourth Semester			
10-307-187	ECE: Children with Differing AbilitiesΔ	3	3-0
10-307-198	ECE: Administering an Early Childhood ProgramΔ	3	3-0
10-307-199	ECE: Practicum 4**	3	1.5-10.5
10-804-123	Math with Business Applications OR	3	3-0
20-804-201	Intermediate Algebra*	(3)	(3-0)
10-809-197	Contemporary American Society OR	3	3-0
20-809-203	Introduction to Sociology*	(3)	(3-0)
	Elective	3	E
Semester Total		18	

* College transfer equivalent courses

** Prerequisites required. Consult faculty.

Δ Prerequisites recommended. Consult faculty.

Note: Students are placed in English or mathematics courses based on their scores on the COMPASS test or on completion of the appropriate prerequisite/s. A COMPASS Reading score of 65 or higher and COMPASS Writing score of 46 or higher are required for the following first semester courses: ECE: Foundations of Early Childhood Education, 10-307-148; ECE: Infant and Toddler Development, 10-307-151; ECE: Curriculum Planning, 10-307-166; and ECE: Practicum 1, 10-307-174.

NOTE: Early Childhood Education courses are usually offered one semester per year as indicated above. In addition to face-to-face course offerings, some of the classes are offered in hybrid or online format. Students interested in a part-time schedule should consult the Program Director prior to registration.



Program Courses

10-307-148 ECE: Foundations of Early Childhood Education 3 credits

This course introduces you to the early childhood profession. Course competencies include: integrate strategies that support diversity and anti-bias perspectives; investigate the history of early childhood education; summarize types of early childhood education settings; identify the components of a quality early childhood education program; summarize responsibilities of early childhood education professionals; explore early childhood curriculum models. Prerequisite: appropriate COMPASS Reading and Writing/English scores.

10-307-151 ECE: Infant and Toddler Development 3 credits

In this course you will study infant and toddler development as it applies to an early childhood education setting. Course competencies include: analyze development of infants and toddlers (conception to three years); correlate prenatal conditions with development; summarize child development theories; analyze the role of heredity and the environment; examine research-based models; examine culturally and developmentally appropriate environments for infants and toddlers. Prerequisite: appropriate COMPASS Reading and Writing/English scores.

10-307-166 ECE: Curriculum Planning 3 credits

This course examines the components of curriculum planning in early childhood education. Course competencies include: examine the critical role of play; establish a developmentally appropriate environment; examine care giving routines as curriculum; develop activity plans and unit plans that promote child development and learning; analyze early childhood curriculum models. Prerequisite: appropriate COMPASS Reading and Writing/English scores.

10-307-167 ECE: Health, Safety, and Nutrition 3 credits

This course examines the topics of health, safety and nutrition within the context of the early childhood educational setting. Course competencies include: follow governmental regulations and professional standards as they apply to health, safety and nutrition; provide a safe, healthy, and nutritionally sound early childhood program; adhere to child abuse and neglect mandates; apply Sudden Infant Death Syndrome (SIDS) risk reduction strategies; incorporate health, safety and nutrition concepts into the children's curriculum.

10-307-174 ECE: Practicum 1 3 credits

In this practicum course you will learn about and apply the course competencies in an actual childcare setting. The first of four training experiences develops skill in interacting with children and staff. MATC faculty help students through periodic observation and conferences. In addition, there is a weekly discussion which focuses on what students are observing and learning in their practicum sites and on developing skills as team members. Students taking Practicum 1 must also be enrolled in at least one other Early Childhood Education course. Prerequisite: appropriate COMPASS Reading and Writing/English scores.

10-307-178 ECE: Art, Music and Language 3 credits

This course will focus on beginning level curriculum development in the specific content areas of art, music and language arts. Course competencies include: examine the critical role of play; establish a developmentally appropriate environment; develop activity plans that promote child development and learning; analyze care giving routines as curriculum; create developmentally appropriate language, literature and literacy activities; create developmentally appropriate art, music, and movement activities. Recommended prerequisite: 10-307-166.

10-307-179 ECE: Child Development 3 credits

The course examines child development within the context of the early childhood education setting. Course competencies include: analyze social, cultural and economic influences on child development; summarize child development theories; analyze development of children age three through age eight; summarize the methods and designs of child development research; analyze the role of heredity and the environment. Recommended prerequisite: 10-307-151.

10-307-187 ECE: Children with Differing Abilities 3 credits

This course focuses on the child with differing abilities in an early childhood education setting. Course competencies include: provide inclusive programs for young children; apply legal and ethical requirements including, but not limited to, ADA and IDEA; differentiate between typical and exceptional development; analyze the differing abilities of children with physical, cognitive, health/medical, communication, and/or behavioral/emotional disorders; work collaboratively with community and professional resources; utilize an individual educational plan (IEP/IFSP) for children with developmental differences; adapt curriculum to meet the needs of children with developmental differences; cultivate partnerships with families who have children with developmental differences. Recommended prerequisites: 10-307-151 and 10-307-179.

10-307-188 ECE: Guiding Children's Behavior 3 credits

This course examines positive strategies to guide children's behavior in the early childhood education setting. Course competencies include: summarize early childhood guidance principles; analyze factors that affect the behavior of children; practice positive guidance strategies; develop guidance strategies to meet individual needs; create a guidance philosophy. Recommended prerequisite: 10-307-151.

10-307-192 ECE: Practicum 2 3 credits

In this second training experience, students apply the knowledge and skills acquired in Practicum 1 and related class work under the supervision of MATC faculty and teacher-caregivers at centers. Planning and implementing activities are included and conferences are scheduled to help students. Recommended concurrent enrollment in 10-307-178 and 10-307-188. Pre-requisite: 10-307-174.

10-307-194 ECE: Math, Science and Social Studies 3 credits

This course will focus on beginning level curriculum development in the specific content areas of math, science and social studies. Course competencies include: examine the critical role of play; establish a developmentally appropriate environment; develop activity plans that promote child development and learning; create developmentally appropriate math, science and social studies activities. Recommended prerequisite: 10-307-166.

10-307-195 ECE: Family and Community Relations 3 credits

In this course you will examine the role of relationships with family and community in early childhood education. Course competencies include: analyze contemporary family patterns, trends and relationships; utilize effective communication strategies; establish ongoing relationships with families; advocate for children and families; work collaboratively with community resources. Recommended prerequisite: 10-307-188.

10-307-197 ECE: Practicum 3 3 credits

In this third training experience, students continue to develop teacher-caregiver skills. One week of head teaching is required. Pre-requisites: 10-307-174; 10-307-192; 10-307-167; 10-307-179; 10-307-188.

10-307-198 ECE: Administering an Early Childhood Education Program 3 credits

This course focuses on the administration of an early childhood education program. Course competencies include: analyze the components of an ECE facility; design an ECE program; analyze the aspects of personnel supervision; outline financial components of an ECE program; apply laws and regulations related to an ECE facility; advocate for the early childhood profession. Recommended prerequisite: 10-307-192.

10-307-199 ECE: Practicum 4 3 credits

This final training experience includes two weeks of head teaching, stresses staff-parent communication and may be designed to coordinate with student's choices of career specializations. Prerequisites: 10-307-174, 10-307-192, and 10-307-197.

Career Potential:

- **Child Care Teacher**
Work in full-day and part-day childcare programs, nursery schools and Head Start programs
- **Child Care Assistant Teacher**
Work under the supervision of a child care teacher
- **Family Child Care Provider**
Care for eight children or less in provider's home
- **Infant or Toddler Caregiver**
Care for children under two years of age
- **In-home Providers/Nanny**
Provide care in the child's home
- **Early Childhood Special Needs/Educational Assistant**
Work in public school early childhood programs, and public school four-year-olds' programs.
- **Directors/ Administrator**
Responsible for managing day care centers and planning and implementing program

More detailed and updated information on this program may be available at: madisoncollege.edu. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

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Electrical Engineering Technology

Associate in Applied Science Degree

Applied Engineering Technologies Program Cluster
 School of Applied Science, Engineering, and Technology
 Program offered at Madison Truax Campus

For information call: (608) 246-6800 or
 (800) 322-6282 Ext. 6800

About the Program

The electronics industry offers many opportunities with high salaries and steady advancement for people with strong mathematics and analytical skills. This program offers an opportunity to develop abilities in a practical, hands-on curriculum. Employer demand for people who can analyze problems and implement solutions is always high. Computers, cellular phones, wireless services and other fields of electronics continue to expand.

This program offers excellent opportunities for articulation into four-year colleges and universities. A graduate of this program can articulate as a junior into the Milwaukee School of Engineering Bachelor of Science Electrical Engineering program. Partial articulation can be arranged to the UW System with the assistance of a program advisor. COMPASS test is required for enrollment.

Admission Requirements

To review program admission program requirements and application processing dates visit the programs website at: <http://madisoncollege.edu/program-info/electrical-engineering-technology>

Math and English Placement

The Electrical Engineering Technology Program participates in MAAP (Mandatory Assessment, Advising and Placement). This requires new program students without prior coursework in mathematics and/or English to complete the appropriate COMPASS test. Advisement and course placement in mathematics and English is based on test results, prior coursework and/or transfer credits.

Study guides, review material and sample questions for the COMPASS test are available online at madisoncollege.edu (look for COMPASS in the "A-Z Index"). Applicants are advised to view this material prior to taking the test. Calculus AP may be applicable after consultation with a program advisor.

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

First Semester	Credits	Hrs/week Lec-Lab
10-605-112 AC-DC Electronics 1.....	3	2-3
10-605-113 Analog Circuit Techniques.....	3	2-3
10-605-118 Digital Circuit Techniques.....	3	2-3
10-801-195 Written Communication	3	3-0
10-605-172 Applied Electronics Mathematics 2	2	3-3
10-809-199 Psychology of Human Relations	3	3-0
Semester Total	17	

Second Semester	Credits	Hrs/week Lec-Lab
10-605-114 AC-DC Electronics 2.....	3	2-3
10-605-115 Analog Circuit Principles.....	3	2-3
10-605-119 Digital Circuit Principles.....	3	2-3
10-605-173 Embedded Programming.....	3	2-3
10-804-196 Trigonometry with Applications OR.....	3	3-0
20-804-213 Trigonometry.....	(3)	(2-2)
10-809-195 Economics	3	3-0
Semester Total	18	

Third Semester	Credits	Hrs/week Lec-Lab
10-605-131 Technical Calculus 1*, **.....	4	3-2
10-605-176 Microcontrollers*.....	3	2-3
10-662-112 AC/DC Electronics 3*	3	2-3
10-801-197 Technical Reporting.....	3	3-0
10-806-143 College Physics 1	3	2-2
Semester Total	16	

Fourth Semester	Credits	Hrs/week Lec-Lab
10-605-132 Technical Calculus 2**, **.....	4	3-2
10-605-143 Motors and Control Circuits**	3	2-3
10-605-145 Programmable Logic Controls**	3	2-3
10-605-178 Networks, Interfacing & Programming**.....	3	2-3
10-662-124 Advanced Circuit Analysis**	3	2-3
20-809-203 Intro to Sociology.....	3	3-0
Semester Total	19	

Alternate Math Selections ³	Credits
20-804-231 Calculus and Analytic Geometry 1	5 credits
20-804-232 Calculus and Analytic Geometry 2	5 credits
20-804-233 Calculus and Analytic Geometry 3	5 credits

*Offered in Fall Semester only

**Offered in Spring Semester only

***In place of Technical Calculus 1 and 2, students who intend to transfer into the UW System should substitute Calculus & Analytic Geometry 1,2,& 3. When selecting this alternative, all three Calculus and Analytic Geometry courses are required for EET degree completion. Other options exist for additional UW transfer credits. Please contact an advisor for more information.

For all other alternatives, approval of an Electrical Engineering and Electronics Technology Department advisor is required. Students should also contact the receiving college or university about transferring credits as soon as they develop their course plans. Courses from the Liberal Studies Program-College Transfer Option (800-series) can be used in lieu of required courses.

Note: Students are assessed for correct placement in English or mathematics courses based on their scores on the COMPASS test or on completion of the appropriate prerequisite(s).



Program Courses

10-605-112 AC-DC Electronics 1 3 credits

Covers basic concepts of electric circuits including: Ohm's Law; Kirchhoff's Voltage, and Current Laws; power calculations; and components such as resistors, switches, fuses, conductors, insulators, capacitors, inductors, relays, and other basic electronic components. Also covers use of test equipment. Prerequisite: COMPASS math minimum test score of 1 for Algebra, or higher; or equivalent math courses; Co-requisite: 10605171.

10-605-113 Analog Circuit Techniques 3 credits

This introductory electronics course covers devices, circuits and applications. This course uses analog electronics devices — diodes, field effect and bipolar transistors and operational amplifiers to learn basic theory and use of test equipment in testing and troubleshooting. Lab procedures emphasize the use of documentation (schematics, layout diagrams, parts lists, data sheets) and troubleshooting procedures. Prerequisite: Satisfactory mathematics COMPASS placement test score for Algebra 1 (1-39), or prior coursework, or transfer credit.

10-605-114 AC-DC Electronics 2 (transfer) 3 credits

This course continues to develop the concepts learned in AC/DC Electronics 1, 10605112. This course covers RL, RC, RLC circuits; transformers; filters; series and parallel resonance; bridge circuits; Thevenin and Norton theorems; wave shaping; internal resistance; motors; generators; three phase power; power factor and corrections; reactive and apparent power; wye and delta systems. Lab sessions require in-depth technical lab reports. Prerequisites: 10-605-112 and 10-605-172 (or equivalent).

10-605-115 Analog Circuit Principles 3 credits

This course continues to develop the concepts learned in Analog Circuit Techniques, 10-605-113. The theory and application of field effect and bipolar transistor amplifiers, operational amplifiers and oscillators are covered with an emphasis on circuits including gain, impedance and frequency response. Lab procedures emphasize increased proficiency with electronic test equipment. Prerequisite: 10-605-113.

10-605-118 Digital Circuit Techniques 3 credits

This introductory electronics course covers schematics, component identification, engineering notation, basic logic gates, numbering systems, component identification, and soldering techniques for through hole and surface mount components. IPC-A-610* Standard for Acceptance Criteria for Electronic Assemblies is followed for inspection of assemblies. Following the RoHS directive, lead free solder and assemblies are used in this course. IPC certification is awarded separately from the academic credits.

10-605-119 Digital Circuit Principles 3 credits

Covers digital logic circuits including basic gates, flip-flops, decoders, counters, shift registers, multiplexing circuits, comparators and other similar devices. It also covers Boolean algebra and minimization techniques as well as Field Programmable Gate Arrays (FPGA). Lab work includes individual project design, including layout, construction, testing and documentation. Prerequisites: 10-605-113 and 10-605-118.

10-605-131 Technical Calculus 1 4 credits

This introductory course studies analytic geometry, binomial series, differentiation of algebraic, exponential, log and trig functions and integration of algebraic functions. An emphasis is placed on the application of each of these topics to problems in science and engineering. Prerequisite: 20-804-213, or COMPASS placement test minimum score of 46 for trigonometry, prior coursework, or transfer credit

10-605-132 Technical Calculus 2 4 credits

This course is a continuation of Technical Calculus 1. Topics include integration techniques, partial derivatives, graphing conics, double integrals, polar coordinates, and first and second order differential equations. Emphasis is placed on applications to problems in science and engineering. Prerequisite: 10-605-131.

10-605-143 Motors and Control Circuits 3 credits

This advanced course covers AC and DC motors, stepping motors, feedback systems, servo controllers, sensors, relays, SCRs, Triacs, MOSFETs, programmable logic controllers, industrial controllers, and applied systems and online microcomputer controls. Prerequisites: 10-605-115, 10-605-123, and 10-605-173.

10-605-145 Programmable Logic Controls 3 credits

Studies basic operation, interfacing and programming of PLCs and Human Machine Interfaces (HMI). Concepts, construction and troubleshooting of ladder logic and proprietary programming systems are covered. Prerequisites: 10-605-115, and 10-605-119, or 10-605-173.

10-605-172 Applied Electronics Mathematics 2 2 credits

Continues to develop the mathematics skills needed by technicians to be successful in their field and is closely tied to the other second-semester electronics courses. Laboratory sessions continue to integrate math with electronic applications. Course is only offered in the last 8 weeks of each semester. Prerequisite: 10605171; or placement COMPASS minimum test score of 66 in Algebra; or prior coursework

10-605-173 Embedded Programming 3 credits

This introductory course covers the fundamentals of electronic computer language, systems and structure. Embedded processor hardware is studied from a system level perspective. Programming structures such as loops, branching, data storage, bit-level processing (masking), functions, arrays, pointers and structures will be covered. Languages include ANSI C, Embedded C Language and principles of assembly language. Prerequisite: 10-605-118, or consent of instructor.

10-605-176 Microcontrollers 3 credits

This course covers microcontrollers and digital systems. Topics include Embedded C programming of Microcontrollers, Basic architectural concepts, parallel and serial I/O, Interrupts, Timer Subsystems, Analog to Digital conversion, Asynchronous Serial Communications (USART), CAN Bus communications, Synchronous Serial Communications (MSSP/SPI/IC2 Bus), Pulse Width Modulation (PWM), and basic control concepts. Prerequisites: 10-605-119 and 10-605-173, or consent of instructor.

10-605-178 Networks, Interfacing and Programming 3 credits

This advance course focuses on networking fundamentals and implementation with an emphasis on Linux. Explores Network layers and Protocols, LabView and FPGA Programming, wireless standards, and Hardware Configuration and programming of various Ethernet connected devices (computers, microcontrollers, remote sensors, control equipment and other hardware). Prerequisite: concurrent enrollment in 10-605-152 or 10-605-176.

10-662-112 AC-DC Electronics 3 3 credits

Topics include analysis of series and parallel AC RLC circuits, utilizing series and parallel equivalent circuits, superposition, Delta-Wye transformations, and Nodal Analysis. Real, reactive, and apparent power in AC circuits along with ideal loads in both single and three phase circuits are studied. Lab work includes analysis, computer simulation and actual measurements. Prerequisites: 10-605-114 and 10605172.

10-662-124 Advanced Circuit Analysis 3 credits

Topics include variable frequency analysis of RLC circuits, first order Bode plots and correlation of time and frequency response. Semiconductor devices and circuits, including diodes, bipolar transistors and field effect transistor are studied. The time and frequency response of single stage BJT and FET amplifiers is examined. Lab work includes analysis, computer simulation and actual measurements. Prerequisites: 10-662-112 and 10-605-115.

Career Potential:

- **Engineering Assistant**
- **Electronic Development Technician**
- **Electronic Technician**
- **Electronic Maintenance Technician**
- **Electronic Test Technician**
- **Field Service Technician**

With additional education and/or work experience, graduates may find employment as:

- **Electrical Engineer**
- **Electronic Engineer**
- **Computer Engineer**
- **Electronic Production Supervisor**
- **Electronic Maintenance Supervisor**
- **Field Service Engineer**
- **Network Engineer**

Note: Students wishing to transfer to the UW system or other 4-year college should contact a program advisor and the receiving college or university about transferring credits.

Note: During the open enrollment period, continuing education students can enroll in almost any Electrical Engineering Technology classes, space permitting, based on their professional experience with consent of instructor.

Note: Courses from the Liberal Studies Program-College Transfer Option (800-series) can be used in lieu of program required liberal arts courses.

Recommended Electives:

20-605-252	Introduction to Computer Engineering	3 credits
20-605-270	AC/DC Circuit Techniques and Principles	3 credits

More detailed and updated information on this program may be available at: madisoncollege.edu. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

Madison Area Technical College provides equal opportunity in education and employment.

Electronic Assembler Certificate

Program Number: 90-605-1

Certificate

Applied Engineering Technologies Program Cluster
 Center for Applied Science, Engineering, and Technology
 Program offered at Madison Campuses

For information call:
(608) 246-6800 or (800) 322-6282 Ext. 6800

About the Certificate

The electronics industry offers a wide range of job opportunities installing and assembling electronic equipment in manufacturing, research, development, medicine and communications. Communications, computers and industrial electronics continue to expand, and there is a high demand for electronics assemblers.

Admission Requirements

To review program admission program requirements and application processing dates visit the programs website at: <http://madisoncollege.edu/program-info/electronic-assembler-certificate>.

Requirements for Completion

The certificate will be awarded upon completion of the requirements with a minimum of a 2.0 grade average and no course grade lower than a C. The certificate will be awarded when completion of all requirements is verified after the semester the last course has been completed.

Program Courses

10-605-113 Analog Circuit Techniques 3 credits

This introductory electronics course covers devices, circuits and applications. This course uses analog electronics devices — diodes, field effect and bipolar transistors and operational amplifiers to learn basic theory and use of test equipment in testing and troubleshooting. Lab procedures emphasize the use of documentation (schematics, layout diagrams, parts lists, data sheets) and troubleshooting procedures. Prerequisite: Satisfactory mathematics placement via a minimum ACT Math 17-19, or COMPASS Algebra 1-39 or COMPASS Pre-algebra 43-99 or ASSET El. Algebra 23-39 or ASSET Num. Skills 40-55, or equivalent math courses, prior coursework, or transfer credit.

10-605-118 Digital Circuit Techniques 3 credits

This introductory electronics course covers schematics, component identification, engineering notation, basic logic gates, numbering systems, component identification, and soldering techniques for through hole and surface mount components. IPC-A-610* Standard for Acceptance Criteria for Electronic Assemblies is followed for inspection of assemblies. Following the RoHS directive, lead free solder and assemblies are used in this course. *IPC certification is not automatic upon course completion. IPC certification is awarded separately from the academic credits.

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

OPTION 1: SINGLE SEMESTER

First Semester		Credits	Hrs/week Lec-Lab
10-605-113	Analog Circuit Techniques.....	3	2-3
10-605-118	Digital Circuit Techniques.....	3	2-3
Certificate Total		6	

OPTION 2: TWO SEMESTERS

First Semester		Credits	Hrs/week Lec-Lab
10-605-113	Analog Circuit Techniques.....	3	2-3
OR			
10-605-118	Digital Circuit Techniques.....	3	2-3
Semester Total		3	

Second Semester

10-605-118	Digital Circuit Techniques.....	3	2-3
OR			
10-605-113	Analog Circuit Techniques.....	3	2-3
Semester Total		3	
Certificate Total		6	

Career Potential:

- Electronic Assembler
- Electronic Installer
- Cabling Technician
- Wiring Technician

With additional education and/or work experience, graduates may find employment as:

- Electronic Maintenance Technician
- Electronic Test Technician
- Electronics Technician
- Field Service Technician
- Computer Field Service Supervisor
- Electronics Production Supervisor
- Electronics Maintenance Supervisor
- Electrical Engineer

The courses in the Electronic Assembler Certificate are a subset of the two year Associate of Applied Sciences (AAS) degree programs in Electrical Engineering Technology and Electronics Technology, counting towards graduation in both programs.

Students who attain this certificate are employable while continuing their education toward a full AAS degree.

Note: courses taken prior to fall 2009 will not count towards this certificate.

More detailed and updated information on this program may be available at: madisoncollege.edu. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

Madison Area Technical College provides equal opportunity in education and employment.



Electronics

Associate in Applied Science Degree

Applied Engineering Technologies Program Cluster
 School of Applied Science, Engineering, and Technology
 Program offered at the Madison Truax Campus

For information call:
 (608) 246-6800 or (800) 322-6282 Ext. 6800

About the Program

The electronics industry offers a wide range of job opportunities installing and maintaining electronic equipment in manufacturing, research, development, medicine and communications. Communications, computers and industrial electronics continue to expand, and there is a high demand for technicians and engineering assistants.

Admission Requirements

To review program admission requirements and application processing dates visit the programs website at: <http://madisoncollege.edu/program-info/electronics>

Math and English Placement

New program students without prior coursework in mathematics and/or English are required to complete the appropriate COMPASS test. Advisement and course placement in mathematics and English is based on test results, prior coursework or transfer credits.

Study guides, review material and sample questions for the COMPASS test are available online at madisoncollege.edu (look for COMPASS in the "A-Z Index"). Applicants are advised to view this material prior to taking the test.

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

		Credits	Hrs/week Lec-Lab
First Semester			
10-605-112	AC-DC Electronics 1.....	3.....	2-3
10-605-113	Analog Circuit Techniques.....	3.....	2-3
10-605-118	Digital Circuit Techniques.....	3.....	2-3
10-605-171	Applied Electronics Mathematics 1.....	2.....	3-3
10-605-172	Applied Electronics Mathematics 2.....	2.....	3-3
10-801-195	Written Communication.....	3.....	3-0
	Semester Total	16	
Second Semester			
10-605-114	AC-DC Electronics 2.....	3.....	2-3
10-605-115	Analog Circuit Principles.....	3.....	2-3
10-605-119	Digital Circuit Principles.....	3.....	2-3
10-605-123	Embedded Device Concepts**.....	3.....	2-3
10-809-195	Economics.....	3.....	3-0
	Semester Total	15	
Third Semester			
10-605-151	Instrumentation & Troubleshooting*.....	3.....	2-3
10-605-152	Digital Systems Analysis*.....	3.....	2-3
10-801-197	Technical Reporting.....	3.....	3-0
10-806-143	College Physics 1.....	3.....	2-2
	Elective*.....	3.....	3-2
	Semester Total	15	
Fourth Semester*			
10-605-116	Advanced Circuit Techniques**.....	3.....	2-3
10-605-143	Motors and Control Systems**.....	3.....	2-3
10-605-178	Networks, Interfacing and Programming**.....	3.....	2-3
10-809-199	Psychology of Human Relations.....	3.....	2-3
10-809-166	Intro to Ethics: Theory & Applications.....	3.....	3-0
10-809-197	Contemporary American Society*** OR.....	3.....	3-0
20-809-203	Introduction to Sociology***.....	(3).....	(3-0)
	Semester Total	18	
Recommended Electives			
10-605-136	Biomedical Electronics.....	3 credits	
10-605-160	Virtual Reality and Telerobotics.....	3 credits	
10-605-173	Embedded Programming.....	3 credits	
10-605-176	Microcontrollers.....	3 credits	
20-605-252	Introduction to Computer Engineering.....	3 credits	
20-605-270	AC/DC Circuit Principles and Techniques.....	3 credits	

*Offered in the Fall Semester only

**Offered in Spring Semester only

***Substitution of Intro to Sociology, 10-809-203, for Contemporary American Society is recommended for any student who may wish to transfer into the Electrical Engineering Technology program.

Note: Students are assessed for correct placement in English or mathematics courses based on their scores on the COMPASS test, prior coursework and/or transfer credits when reading, writing, math, or critical thinking competencies are required.



Program Courses

10-605-112 AC-DC Electronics 1 3 credits

Covers basic concepts of electric circuits including: Ohm's Law; Kirchhoff's Voltage, and Current Laws; power calculations; and components such as resistors, switches, fuses, conductors, insulators, capacitors, inductors, relays, and other basic electronic components. Also covers use of test equipment. Prerequisite: COMPASS math minimum test score of 1 for Algebra, or higher; or equivalent math courses; Co-requisite: 10605171.

10-605-113 Analog Circuit Techniques 3 credits

This introductory electronics course covers devices, circuits and applications. This course uses analog electronics devices — diodes, field effect and bipolar transistors and operational amplifiers to learn basic theory and use of test equipment in testing and troubleshooting. Lab procedures emphasize the use of documentation (schematics, layout diagrams, parts lists, data sheets) and troubleshooting procedures. Prerequisite: Satisfactory mathematics COMPASS placement test score for Algebra 1 (1-39), or prior coursework, or transfer credit.

10-605-114 AC-DC Electronics 2 3 credits

This course continues to develop the concepts learned in AC/DC Electronics 1, 10605112. This course covers RL, RC, RLC circuits; transformers; filters; series and parallel resonance; bridge circuits; Thevenin and Norton theorems; wave shaping; internal resistance; motors; generators; three phase power; power factor and corrections; reactive and apparent power; wye and delta systems. Lab sessions require in-depth technical lab reports. Prerequisites: 10-605-112 and 10-605-172 (or equivalent).

10-605-115 Analog Circuit Principles 3 credits

This course continues to develop the concepts learned in Analog Circuit Techniques, 10-605-113. The theory and application of field effect and bipolar transistor amplifiers, operational amplifiers and oscillators are covered with an emphasis on circuits including gain, impedance and frequency response. Lab procedures emphasize increased proficiency with electronic test equipment. Prerequisite: 10-605-113.

10-605-116 Advanced Circuit Techniques 3 credits

This is a project based course centering on analog circuit applications. This course emphasizes hands-on skills, assembly, testing and troubleshooting, documentation, group work and presentations. Prerequisites: 10-605-115; and 10-605-123, or 10-605-173.

10-605-118 Digital Circuit Techniques 3 credits

This introductory electronics course covers schematics, component identification, engineering notation, basic logic gates, numbering systems, component identification, and soldering techniques for through hole and surface mount components. IPC-A-610* Standard for Acceptance Criteria for Electronic Assemblies is followed for inspection of assemblies. Following the RoHS directive, lead free solder and assemblies are used in this course.

10-605-119 Digital Circuit Principles 3 credits

Covers digital logic circuits including basic gates, flip-flops, decoders, counters, shift registers, multiplexing circuits, comparators and other similar devices. It also covers Boolean algebra and minimization techniques as well as Field Programmable Gate Arrays (FPGA). Lab work includes individual project design, including layout, construction, testing and documentation. Prerequisites: 10-605-113 and 10-605-118.

10-605-123 Embedded Device Concepts 3 credits

Programmed devices are covered in this course with a hardware emphasis. Algorithms, event sequencing, flow diagrams, visual programming and Embedded C programming are covered as well as compiling, downloading embedded code into target hardware and basic troubleshooting of simple embedded programs in C. This course also covers variables, memory management, conditionals, mathematical operations, functions and loops. There is considerable emphasis on troubleshooting within this course. Co-requisite: 10-605-119.

10-605-143 Motors and Control Systems 3 credits

This advanced course covers AC and DC motors, stepping motors, feedback systems, servo controllers, sensors, relays, SCRs, Triacs, MOSFETs, programmable logic controllers, industrial controllers, and applied systems and online microcomputer controls. Prerequisites: 10-605-115; and 10-605-123, or 10-605-173.

10-605-151 Instrumentation and Troubleshooting 3 credits

This advanced course covers the approach, methodology and techniques in trouble shooting electronic circuits and systems as well as the calibration, uses and limitations of common electronic test equipment. Prerequisites: 10-605-115 and 10-605-119.

10-605-152 Digital Systems Analysis 3 credits

This is a project based advanced course focusing on digital circuits, embedded controllers and interfacing. The course emphasizes hands-on skills, assembly, testing and troubleshooting, documentation, working in groups and presentations. Prerequisites: 10-605-119, and 10-605-123.

10-605-171 Applied Electronics Mathematics 1 2 credits

This course is the first of a two-part applied electronics mathematics sequence. This course focuses on mathematic concepts most needed by technicians and is closely tied to the other first-semester electronics courses. Laboratory sessions focus on math associated with electronic applications. Course is only offered in the first 8 weeks of each semester. Prerequisite: COMPASS math minimum score of 1 for Algebra or higher, or equivalent math courses

10-605-172 Applied Electronics Mathematics 2 2 credits

Continues to develop the mathematics skills needed by technicians to be successful in their field and is closely tied to the other second-semester electronics courses. Laboratory sessions continue to integrate math with electronic applications. Course is only offered in the last 8 weeks of each semester. Prerequisite: 10-605-171; or placement COMPASS test minimum score of 66 in Algebra; or prior coursework

10-605-178 Networks, Interfacing and Programming 3 credits

This advance course focuses on networking fundamentals and implementation with an emphasis on Linux. Explores Network layers and Protocols, LabView and FPGA Programming, wireless standards, and Hardware Configuration and programming of various Ethernet connected devices (computers, microcontrollers, remote sensors, control equipment and other hardware).. Co-requisite: 10-605-152 or 10-605-176.

Career Potential:

- Computer Technician
- Network Technician
- Electronic Development Technician
- Electronic Maintenance Technician
- Electronic Test Technician
- Electronics Technician
- Field Service Technician

With additional education and/or work experience, graduates may find employment as:

- Computer Field Service Supervisor
- Electronics Production Supervisor
- Electronics Maintenance Supervisor
- Electrical Engineer
- Network Manager

Alternate Math Selections

20-804-213	Trigonometry	3 credits
10-605-131	Technical Calculus 1	4 credits
10-605-132	Technical Calculus 2	4 credits

Note: Students wishing to transfer to the UW system or other 4-year college should contact a program advisor and the receiving college or university about transferring credits.

Note: During the open enrollment period, continuing education students can enroll in almost any Electronics class, space permitting, based on their professional experience and with consent of instructor

Note: Courses from the Liberal Studies Program-College Transfer Option (800-series) can be used in lieu of required program liberal arts courses.

Recommended Elective:

20-605-252	Introduction to Computer Engineering	3 credits
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More detailed and updated information on this program may be available at: madisoncollege.edu. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

Madison Area Technical College provides equal opportunity in education and employment.

Electron Microscopy Post-Baccalaureate Certificate

Program Number: 90-636-1

Certificate

Biotechnology and Electron Microscopy Program Cluster
School of Applied Science, Engineering, and Technology
Program offered at Madison Campuses

For information call:
(608) 246-6800 or (800) 322-6282 Ext. 6800

About the Program

This certificate is designed to provide individuals who have obtained a BS in a biological science with an opportunity to gain the technical skills needed to be employed as an electron microscopy technician.

Individuals will be instructed in the theory and hands-on operation of transmission and scanning electron microscopes, image processing, electron optics, chemical processing and ultramicrotomy of biological tissues.

Admission Requirements

To review program admission requirements and application processing dates visit the programs website at: <http://madisoncollege.edu/program-info/electron-microscopy-post-baccalaureate-certificate>.

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

First Semester		Credits	Hrs/week Lec-Lab
10-636-111	Scanning Electron Microscopy	3	2-3
10-636-112	Transmission Electron and Atomic Force Microscopy	4	3-3
10-636-113	EM Image Processing 1	2	1-2
10-636-115	EM Photography & Lab Safety	2	2-0
Second Semester			
10-636-121	EM Biological Sample Preparation.....	3	2-2
10-636-123	EM Image Processing 2	2	1-2
10-636-126	Fluorescence and Related Microscopies	2	1-2
10-804-189	Introductory Statistics OR	3	3-0
20-804-240	Basic Statistics	(4)	(4-0)
10-806-182	Forces, Fields & Energy	3	2-2
Semester Total		13	

Note: Students are assessed for correct placement in English or mathematics courses based on their scores on the COMPASS test or on completion of the appropriate prerequisite(s). Additionally, there may be courses in other subject areas that may use COMPASS scores as prerequisites when reading, writing, math, or



Madison Area Technical College
Electron Microscopy Post-Baccalaureate Certificate
Program Courses

Program Number: 90-636-1

10-636-111 Scanning Electron Microscopy 3 credits

Provides extensive laboratory work in which students become proficient in the operation of scanning electron microscopes (SEMs). Students learn electron-specimen interactions, image processing, effects of microscope variables on the image and the use of various microscope accessories and outputs. Microscope optics also is introduced.

10-636-112 Transmission Electron and Atomic Force Microscopy 4 credits

Students become proficient in the alignment procedures, operation and theory of transmission electron microscopes (TEMs). Introduction to basic theory and operation of atomic force microscopes (AFMs). X-ray microanalysis will also be introduced.

10-636-113 EM Image Processing 1 2 credits

This course studies the theory and application of digital image acquisition from microscopes. Students will learn how to import these images into a PC for incorporation into scientific documents. Additionally, the course will address issues of resolution, archiving, the differences between available image file formats and compression methods, and differences between various input and output sources.

10-636-115 EM Photography Techniques and Lab Safety 2 credits

Students examine safety concerns and procedures encountered in an EM laboratory. The theory of optics and the practical application of light microscopy in science are studied. Principles of digital photography are also discussed.

10-636-121 Biological Sample Prep EM 3 credits

Lecture-lab course covering biological sample preparation for both TEM and SEM. Includes chemical and cryo fixation, embedment, ultramicrotomy and staining methods. Solution preparation and laboratory techniques are also performed. Prerequisites: grade of C or better in 10-636-111 and 10-636-112, or consent of the instructor.

10-636-123 EM Image Processing 2 2 credits

Advanced development of digital processing by enhancement and manipulation of images from various types of microscopes. Students will be introduced to sampling techniques, stereology, Fourier Transform analysis, scientific filtering protocols, digital imaging ethics in the scientific community, convolution masks, counting and measurement, and colorizing techniques. Also included are modules on scientific interpretation, analysis, and output media. Students will develop cross-platform computer skills with programs including: Adobe PhotoShop, ImageJ, ImagePro Plus, and AnalySIS. This course also explores in depth relationships between image quality at the microscope and output to various media. Prerequisite: grade of C or better in 10-636-113.

10-636-126 Fluorescence and Related Microscopies 2 credits

Covers basics of fluorescence imaging of biological tissues: the hardware, labeling, imaging and image processing used. An introduction to Biotechnology, with the fluorescent labeling and imaging of STEM cells; the physical and chemical processing, mounting, and imaging of plant and animal specimens for SEM analysis.

20-804-240 Basic Statistics 4 credits

In Basic Statistics appropriate statistical techniques are studied for the systematic collection, presentation, analysis and interpretation of experimental results, including surveys and quality control. The focus is on understanding the techniques of statistical inference (confidence intervals and hypothesis testing) and interpreting results as found in articles and reports. It emphasizes the inherent uncertainty when decisions are made on the basis of sample data. Includes descriptive statistics, basic probability theory, sampling distributions and the Central Limit Theorem; the binomial, normal, Student t, chi-square, and F distributions; and techniques of 1- and 2-sample tests, linear regression, correlation, an introduction to analysis of variance and selected nonparametric procedures. Prerequisites: Intermediate Algebra, 20-804-201 with a grade of C or better, or Intermediate Algebra Parts 1, 20-804-202 and 2, 20-804-203, with a grade of C or better in both Parts 1 and 2, or appropriate placement score.

10-806-182 Forces, Fields, and Magnetism 3 credits

This course offers an in-depth study of electricity and magnetism, including electrostatics, electric and magnetic field theory, electric circuits and electronics. The course also includes a brief introduction to kinematics, dynamics, work and energy so that they can be applied to electric and magnetic systems. The course concludes with an introduction to wave optics and the wave/particle duality of light and subatomic particles.

Career Potential:

- **Bio/Nano Materials Research Microscopist:**
Analyze metals, ceramics, polymers, and nano materials for incorporation into biological systems.
- **Biological Research Electron Microscopy Technicians**
Prepare and examine plants and tissues for ultrastructural analysis.
- **Diagnostic Pathology Electron Microscopists**
Produce micrographs for ultimate clinical diagnosis for a variety of diseases.
- **Materials Research Electron Microscopy Technicians**
Evaluate metals, ceramics, plastics and geologic samples by Electron Microscopy and X-ray analysis.
- **Sales and/or Applications Representatives**
Employment with microscope manufacturers, selling or demonstrating equipment, or instructing customers on equipment use.

More detailed and updated information on this program may be available at: madisoncollege.edu. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

Madison Area Technical College provides equal opportunity in education and employment.

Electron Microscopy

Program Number: 10-636-1

Associate in Applied Science Degree

Biotechnology and Electron Microscopy Program Cluster

School of Applied Science, Engineering, and Technology

Program offered at Madison Campuses

For information call:

(608) 246-6800 or (800) 322-6282 Ext. 6800

About the Program

The Electron Microscopy program is a two-year program in which students learn to operate electron microscopes and related equipment, both scanning (SEM) and transmission (TEM). The preparation of biological and material samples for observation by TEM or SEM is an important part of the program. Interpretation of sample observations, including metallurgical structures and biological ultrastructure, is included.

Considerable emphasis is placed on communication skills, computer-image processing, X-ray microanalysis and maintenance of electron microscopes and related equipment. The entire program stresses a laboratory, hands-on approach to provide a graduating student with confident and proficient job-entry performance.

Admission Requirements

To review program admission requirements and application processing dates visit the programs website at: <http://madisoncollege.edu/program-info/electron-microscopy-technician>.

The Electron Microscopy Program participates in MAAP (Mandatory Assessment, Advising and Placement). This requires new students to complete the COMPASS or ASSET test. Advisement and course placement in English and math (and some science courses) are done based on test results. Testing should be completed prior to admission.

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

FIRST YEAR

First Semester	Credits	Hrs/week Lec-Lab
10-636-111 Scanning Electron Microscopy	3	2-3
10-636-112 Transmission Electron and Atomic Force Microscopy	4	3-3
10-636-113 EM Image Processing 1	2	1-2
10-636-115 EM Photography & Lab Safety	2	2-0
10-804-118 Intermediate Algebra with Applications OR	3	2-2
20-804-201 Intermediate Algebra	(4)	(4-0)
10-806-134 General Chemistry OR	4	3-2
20-806-201 General Organic and Biological Chemistry	(5)	(4-2)
Semester Total	18	

Second Semester

10-636-121 EM Biological Sample Preparation	3	2-2
10-636-122 EM Physical Preparation and FIB	4	3-3
10-636-123 EM Image Processing 2	2	1-2
10-801-195 Written Communication	3	3-0
10-804-189 Introductory Statistics OR	3	3-0
20-804-240 Basic Statistics	(4)	(4-0)
10-806-182 Forces, Fields & Energy	3	2-2
Semester Total	18	

SECOND YEAR

First Semester

10-636-131 Advanced Biological Techniques and Ultrastructure Studies	3	2-2
10-636-132 Diffraction and Materials	4	3-3
10-636-133 EM Image Processing 3: Presentation	2	1-2
10-636-135 Laboratory and Microscope Maintenance	3	2-2
10-801-197 Technical Reporting	3	3-0
Semester Total	15	

Second Semester

10-636-141 X-Ray Microanalysis	4	3-3
10-636-143 Special EM Techniques and Spectroscopy	3	2-3
10-636-147 Electron Microscopy Special Project	2	0-6
10-809-197 Contemporary American Society	3	3-0
10-809-199 Psychology of Human Relations	3	3-0
Semester Total	15	

Note: Students are assessed for correct placement in English or mathematics courses based on their scores on the COMPASS test or on completion of the appropriate prerequisite(s). Additionally, there may be courses in other subject areas that may use COMPASS scores as prerequisites when reading, writing, math, or critical thinking competencies are required.



Madison Area Technical College
Electron Microscopy
Program Courses

Program Number: 10-636-1

10-636-111 Scanning Electron Microscopy 3 credits

Provides extensive laboratory work in which students become proficient in the operation of scanning electron microscopes (SEMs). Students learn electron-specimen interactions, image processing, effects of microscope variables on the image and the use of various microscope accessories and outputs. Microscope optics also is introduced.

10-636-112 Transmission Electron and Atomic Force Microscopy 4 credits

Students become proficient in the alignment procedures, operation and theory of transmission electron microscopes (TEMs). Introduction to basic theory and operation of atomic force microscopes (AFMs). X-ray microanalysis will also be introduced.

10-636-113 EM Image Processing 1 2 credits

This course studies the theory and application of digital image acquisition from microscopes. Students will learn how to import these images into a PC for incorporation into scientific documents. Additionally, the course will address issues of resolution, archiving, the differences between available image file formats and compression methods, and differences between various input and output sources.

10-636-115 EM Photography Techniques and Lab Safety 2 credits

Students examine safety concerns and procedures encountered in an EM laboratory. The theory of optics and the practical application of light microscopy in science are studied. Principles of digital photography are also discussed.

10-636-121 Biological Sample Prep EM 3 credits

Lecture-lab course covering biological sample preparation for both TEM and SEM. Includes chemical and cryo fixation, embedment, ultramicrotomy and staining methods. Solution preparation and laboratory techniques are also performed. Prerequisite: grade of C or better in 10-636-111 and 10-636-112, or consent of the instructor.

10-636-122 EM Physical Preparation and FIB 4 credits

Lecture-lab course covering specimen preparation for both SEM and TEM. Topics include replica preparation, ion milling, polishing and thinning methods. Material studies consider identification of metallurgical structures, fracture types, dislocation analysis and microstructures of geologic samples, plastics and ceramics. Prerequisite: grade of C or better in 10-636-111 and 10-636-112, or consent of the instructor.

10-636-123 EM Image Processing 2 2 credits

Advanced development of digital processing by enhancement and manipulation of images from various types of microscopes. Students will be introduced to sampling techniques, stereology, Fourier Transform analysis, scientific filtering protocols, digital imaging ethics in the scientific community, convolution masks, counting and measurement, and colorizing techniques. Also included are modules on scientific interpretation, analysis, and output media. Students will develop cross-platform computer skills with programs including: Adobe PhotoShop, ImageJ, ImagePro Plus, and AnalySIS. This course also explores in depth relationships between image quality at the microscope and output to various media. Prerequisite: grade of C or better in 10-636-113.

10-636-131 Advanced Biological Techniques and Ultrastructure Studies 3 credits

Students prepare biological samples for both SEM and TEM using methods not previously presented, such as Cryo preparation. Includes ultrastructure studies enabling students to identify features encountered in micrographs for interpretation and analysis. Prerequisite: grade of C or better in 10-636-121 and 10-636-122, or consent of instructor.

10-636-132 Diffraction and Materials 4 credits

Interpretation and analysis is made for crystals using electron diffraction methods. Powder diffraction is introduced allowing compounds to be identified. Concepts of reciprocal lattice space and crystal structures are included. Prerequisite: grade of C or better in 10-636-121 and 10-636-122, or consent of the instructor.

10-636-133 EM Image Processing 3: Presentation 2 credits

This class synthesizes the techniques learned in EM Image Processing 1 and 2 by incorporating the scientific image into industry-standard presentation formats such as PowerPoint and InDesign. Students will learn design attributes and speech writing skills in order to produce scientific slide presentations and posters. This class will also coordinate the learning of these skills with the production of assignments as required by concurrent and subsequent classes within the program. Students will also begin production of their own image portfolio and resume. Prerequisite: grade of C or better in 10-636-123; Co-requisite: 10-636-131.

10-636-135 Laboratory and Microscope Maintenance 3 credits

Students use oscilloscopes, vacuum leak checkers and other metrology equipment used for troubleshooting methods for the EM lab. Hands-on diagnostics, repairs and routine maintenance are made by students in EM lab setting.

10-636-141 X-Ray Microanalysis 4 credits

Students perform elemental analysis with energy dispersive X-ray systems on both TEM and SEMs. The use of matrix corrections, qualitative and quantitative computer analysis routine will constitute a major part of this course. Prerequisite: grade of C or better in both 10-636-131 and 10-636-132, or consent of the instructor.

10-636-143 Special EM Techniques and Spectroscopy 3 credits

Laboratory course in which students perform tasks including voltage contrast, electron beam induced current (EBIC) and electron channeling. Presents other microscopy methods, such as secondary ion mass spectroscopy (SIMS), focus ion beam (FIB) and Auger microscopes. Prerequisite: grade of C or better in both 10-636-131 and 10-636-132.

10-636-147 Electron Microscopy Special Project 2 credits

Students choose an independent project resulting in a final report that will include micrographs from both TEMs and SEMs and x-ray analysis. Prerequisite: grade of C or better in Electron Microscopy Program sequence to date, or consent of instructor.

Career Potential:

- **Integrated Circuit Microscopic and Failure Analysts**
Perform TEM, SEM, FIB, X-ray and AFM analysis to characterize micro-electronic components.
- **Biological Research Electron Microscopy Technicians**
Prepare and examine plants and tissues for ultrastructural analysis.
- **Diagnostic Pathology Electron Microscopists**
Produce micrographs for ultimate clinical diagnosis for a variety of diseases.
- **Materials Research Electron Microscopy Technicians**
Evaluate metals, ceramics, plastics and geologic samples by Electron Microscopy and X-ray analysis.
- **Sales and/or Applications Representatives**
Employment with microscope manufacturers, selling or demonstrating equipment, or instructing customers on equipment use.

More detailed and updated information on this program may be available at: madisoncollege.edu. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

Madison Area Technical College provides equal opportunity in education and employment.

Emergency Medical Technician

EMT Advanced EMT

Program Numbers: 30-531-3 / 30-531-6

Less-Than-One-Year Diploma

Emergency Medical Services Program Cluster

School of Human and Protective Services

Program offered at Truax Campus

For information call: (608) 246-5250 or
(800) 322-6282 Ext. 5250

Admission Requirements

To review program admission program requirements and application processing dates, visit the program's website at: <http://madisoncollege.edu/program-info/emergency-medical-technician>.

Emergency Medical Technician (EMT) Less-Than-One-Year Diploma

This is an entry-level course and meets requirements for licensure in Wisconsin and certification with the National Registry of Emergency Medical Technicians. This course is offered throughout the district. Prerequisite: CPR certification at a professional level and a COMPASS Reading score of 80 or higher or proof of a grade of C or better in a college level English. Students must be at least 18 years old. For additional EMT course information and application/registration materials, go to: <http://madisoncollege.edu/program-info/emergency-medical-technician-basic> and click on the Admissions tab.

Program Courses

10-531-102 Emergency Medical Technician 1 2 credits

Based upon the State of Wisconsin/U.S. Department of Transportation/National Highway Transportation Safety Administration curriculum, this approximately 54 hour course covers modules 1-3 and includes classroom instruction, lectures, discussion, demonstrations, skill practice on the roles and responsibilities of being an Emergency Medical Services Provider, as well as basic communication and documentation skills, anatomy and physiology, performing a patient assessment, critical thinking, and basic airway management. This course is a co-requisite of the EMT 2 course.

10-531-103 Emergency Medical Technician 2 3 credits

This course is a co-requisite of the EMT 1 course and continues the State of Wisconsin/U.S. Department of Transportation/National Highway Transportation Safety Administration curriculum. This approximately 130 hour course covers modules 4-8 and includes classroom instruction, lectures, discussion, demonstrations, online assignments, and skill practice on emergent medical and traumatic encounters, dealing with special populations, and EMS Operations. Ten real-life or high-fidelity patient care experiences are required. Successful completion of EMT 1 and EMT 2 prepares students to obtain licensure as an EMT Basic in the State of Wisconsin. This course is a co-requisite of the EMT 1 course.

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

Note: Copies of the essential functions necessary to successfully complete these programs of study are available upon request from the division office.

Course	Hrs/week	
	Credits	Lec-Lab-Clinic
Emergency Medical Technician (EMT)		
10-531-102 Emergency Medical Technician 1.....	2	7-4-0
10-531-103 Emergency Medical Technician 2.....	3	7-4-0
Advanced EMT (AEMT)		
30-531-360 Advanced EMT	4	4-2-3



Entrepreneurship Certificate

Program Number: 90-145-2

Certificate

Business and Marketing Program Cluster

School of Business and Applied Arts

Certificate offered at Madison Campuses

For information call:

(608) 246-6003 or (800) 322-6282 Ext. 6003

About the Certificate

The Entrepreneurship Certificate includes the two small business planning courses, which are focused on creation of the marketing and financial plans for a small business venture, along with a small business operations course, and customer service. An intro to entrepreneurship course or internship course is also required. There are no prerequisite courses for this certificate. Students are required to have basic computer skills.

Admission Requirements

To review program admission requirements and application processing dates visit the programs website at:

<http://madisoncollege.edu/program-info/entrepreneureship-certificate>.

Requirements for Completion

The certificate will be awarded upon completion of the requirements with a minimum of a 2.0 grade average and no course grade lower than a C. The certificate will be awarded when completion of all requirements is verified after the semester the last course has been completed.

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

Courses	Credits	Hrs/week	
		Lec	On the Job
10-145-102 Small Business Development.....	3		3-0
10-145-105 Operations Management.....	3		3-0
10-145-106 Small Business Marketing	3		3-0
10-145-108 Field Experience Seminar OR	2		1-12
10-145-117 <i>Introduction to Entrepreneurship</i>	(3)		3-0
10-145-185 Customer Service Management.....	3		3-0
Total	14-15		



Courses

10-145-102 Small Business Development 3 credits

Provides an introduction to prospective small business owners to principles involved in planning and operation. Attention is given to small business appraisal and opportunities. Emphasis will be placed on factors that contribute to a successful business operation.

10-145-105 Operations Management 3 credits

Small business management strategies are applied to policies and operations. Included are applications to budgeting, marketing potentials, forecasting, layout, staffing, work flow, scheduling, and general business decisions. E-commerce is also explored.

10-145-106 Small Business Marketing 3 credits

Developing and refining the marketing and promotion plans for a small business. Topics for discussion include merchandise/service resources, budgeting, study of competition, market segmentation, pricing, promotion, non-media ways to get customers to come to your business, and strategic planning.

10-145-108 Field Experience Seminar 2 credits

Employment in an approved occupation related to the student's future business plans is a prerequisite. Reports and discussion in class are coordinated with student employment. Employee appraisal, evaluation and harmony on the job will also be topics of discussion. The course requires a minimum of 144 hours of employment.

10-145-117 Introduction to Entrepreneurship 3 credits

Dreaming of starting your own business? This course is designed to inspire and nurture the entrepreneurial spirit. Students will examine the entrepreneurial process and characteristics of successful entrepreneurs, how to identify and evaluate entrepreneurial opportunities, and the critical elements of an effective business plan -- including management, marketing, and financial data. So whether you dream of a new business, or have a plan that needs further development, this course can help you reach your goals.

10-145-185 Customer Service Management 3 credits

This course examines the general state of customer service in organizations for both internal & external customers. Explores how a business can enhance their competitive position by adopting and implementing a variety of service initiatives. Topic areas range from practicing necessary customer service skills, such as communication, listening and conflict management to discussing service strategies used by top companies.

More detailed and updated information on this program may be available at: madisoncollege.edu. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

Madison Area Technical College provides equal opportunity in education and employment.

Rev. 04/15

Ethnic Studies Certificate

Program Number: 90-809-1

Certificate

School of Arts and Sciences

Program offered at Madison Campus

**For information call: (608) 246-6246
(800) 322-6282 Ext. 6246**

About the Certificate

Ethnic studies courses explore the position of ethnic and racial minorities in the history, culture, and society of the United States. These courses develop philosophical insights and theoretical tools that encourage further exploration of the entire spectrum of society and culture in the U.S.

Why Should I Take An Ethnic Studies Course:

People of color have contributed significantly to the making of America, but often they are not given their full due. In the past, the voices of racial and ethnic minorities have been silenced. Consequently, their faces are relegated to the shadows; they have been ignored and forgotten.

Ethnic Studies courses are designed to nurture appreciation of those often silenced voices and forgotten lives. An ethnic studies course may be your opportunity to begin your own exploration of the vitally important contributions that people of color have made to American history, culture, and society.

These courses also provide an opportunity to examine critically the phenomena of race and ethnicity. What do we mean by race and ethnicity? Why do Americans expend so much energy and effort creating and maintaining the social divisions that we call race and ethnicity? And further, how have history, culture, and society been shaped by—and simultaneously been shapers of—our ideas about race and ethnicity?

Certificate Outcomes

Interact in the workplace with sensitivity to issues arising from political, economical, and cultural differences.

Critically interpret and value cultural traditions, art, and issues throughout your life.

Advocate for social justice in community and service groups.

Promote respect and equity in society by applying what you have learned while earning this certificate.

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

Students must complete at least one course from each of these three academic areas:

		Hrs/week	
		Credits	Lec-Lab
Literature Courses:			
20-801-207	World Indigenous Literatures.....	3	3-0
20-801-212	Ethnic Literature.....	3	3-0
20-801-213	Native American Literature.....	3	3-0
20-801-214	African American Literature.....	3	3-0
20-801-222	U.S. Latino Literature.....	3	3-0

History Courses:

20-803-214	Native American History.....	3	3-0
20-803-240	Afro-American History.....	3	3-0

Social Sciences Courses:

10-809-172	Introduction to Diversity Studies.....	3	3-0
20-809-252	Race and Ethnicity in the U.S.....	3	3-0
20-809-283	Cultural Anthropology & Human		
20-809-286	The Anthropology of Globalization		

Prior to applying for this certificate, contact the Ethnic Studies Director, John Luke Matthews at (608) 258-2438 or email at JMatthews@madisoncollege.edu to discuss your course path and independent research project.

Admission Requirements

To review program admission requirements and application processing dates visit the programs website at: <http://madisoncollege.edu/program-info/ethnic-studies-certificate>.

Requirements for Completion

The certificate will be awarded upon completion of the requirements with a minimum of a 2.0 grade average and no course grade lower than a C. The certificate will be awarded when completion of all requirements is verified after the semester the last course has been completed.



Courses

10-809-172 Introduction to Diversity Studies 3 credits
Introduces learners to the study of diversity from a local to a global environment using a holistic, interdisciplinary approach. Encourages self-exploration and prepares the learner to work in a diverse environment. In addition to an analysis of majority/minority relations in a multicultural context, the primary topics of race, ethnicity, age, gender, class, sexual orientation, disability, religion are explored. Prerequisite: Academic Reading 5&6 77-858-752 with a C or better or ACT Reading 14-36 or COMPASS Reading 65-99 or ASSET Reading 36-53.

20-801-207 World Indigenous Literatures 3 credits
World Indigenous Literatures studies indigenous issues in an international context by comparing literature and film produced by Native American and other indigenous writers and filmmakers in the U.S., Canada, New Zealand, Australia, and the Indigenous Pacific. The selection of authors represents indigenous people who have remained in their homelands as minority nations within First World countries. Prerequisite: English 1, 20-801-201; OR the equivalent at another college with a grade of "C" or better OR with instructor consent.

20-801-212 Ethnic Literature 3 credits
Special Topics in Ethnic Literature explores questions of identity within various cultural contexts. Writers represent one or more ethnic groups working in one or more genres of literature with emphasis on developments in voice, genre, and style over chronological and geographical periods. Individual sections may vary in particular emphasis. Prerequisite: English 1, 20-801-201 or English 2, 20-801-202 or Intro to Literature, 20-801-204 or with instructor's permission.

20-801-213 Native American Literature 3 credits
Native American Literature introduces students to rich, complex and varied literary traditions reflected in the works of contemporary Native American storytellers in fiction, poetry, drama, and film. Issues of language, cultural identity, historical witness, and current social and political experiences are reflected in these genres. The works are discussed in terms of specific cultural and universal themes, and their place in the emerging Native American literary canon. Prerequisite: English 1, 20-801-201 or English 2, 20-801-202 or Intro to Literature, 20-801-204 or with instructor's permission.

20-801-214 African American Literature 3 credits
African American Literature introduces students to the rich, complex and varied literary traditions reflected in the works of African American writers. Studies developments and achievements in voice, genre, and style and explores issues of language, cultural identity, historical witness, and social and political experience. Individual sections may focus on a particular theme, genre, or period for emphasis. Prerequisite: English 1, 20-801-201 or English 2, 20-801-202 or Intro to Literature, 20-801-204 or with instructor's permission.

20-801-222 U.S. Latino Literature 3 credits
This course explores U.S. Latino texts, including poetry, fiction, drama, and autobiography by Mexican-American, Puerto-Rican American, Cuban-American and Dominican-American writers. Writers from other Latino groups may also be included. Class discussion examines the rich and varied literary traditions of Latino communities in the United States. Students analyze issues of theme, genre, language, cultural identity and social and political experiences, as reflected in the texts chosen for the course. Classes are conducted in English. All required texts were originally written in English or are offered in English translation. Prerequisite: English 1, 20-801-201 or English 2, 20-801-202 or Intro to Literature, 20-801-204 or with instructor's permission.

20-803-214 Native American History 3 credits
Native American History is a survey course focusing on Native American cultures and histories from early times to the present. Particular attention is placed on the variety of lifestyles of native peoples, their early reactions to Euro-Americans, outstanding native leaders, assimilation efforts and relations with the U.S. government. Completion of 20-803-211, American History 1607-1865; or 20-803-212, American History 1865 to Present, is recommended. Prerequisite: English 1, 20-801-201; or Comm. Skills 1, 10-801-151; or College Reading Strategies, 10-808-101; with a C or better, or appropriate reading placement scores.

20-803-240 Afro-American History 3 credits
Broad introductory survey of significant experiences that have shaped U.S. race relations, beginning with the west coast of Africa during the Middle Ages and moving through the last 30 years of this century in the United States. Special attention is given to slavery, family, politics, education and civil rights. Prerequisite: English 1, 20-801-201; or Comm. Skills 1, 10-801-151; or College Reading Strategies, 10-808-101; with a C or better, or appropriate reading placement scores.

20-809-252 Race and Ethnicity in the U.S. 3 credits
Explores how the social constructions of race and ethnicity shape U.S. society and examines structural inequalities and majority-minority group relations. Emphasizes explanations of forms of racism, ethnic and racial prejudice and discrimination; historical background; and forms of cultural resistance and common experiences of African Americans, Indian Americans, Latinos, Asian Americans and other marginalized racial and ethnic groups. Considers employment, housing, political, legal, educational, and familial and health consequences of unequal power. Discusses current policy debates and proposed solutions to inequalities. Prerequisite: COMPASS Reading score 65 or greater, OR Academic Reading 5/6, 77858752 with a grade of B/C or higher.

20-809-283 Cultural Anthropology & Human Diversity 3 credits
This course focuses on exploring the range of modern human cultural diversity across the world. The class will examine the cultural practices and historical ties that constitute commonalities across cultures. Particular attention will be paid to the cultural complexity of modern urbanized societies such as that of the United States.

20-809-286 The Anthropology of Globalization & Multiculturalism 3 credits
This course explores the ways that our societies, cultures and experiences have been transformed, in both positive and negative ways, by the political, technological and economic changes brought about by the collapse of the old colonial systems and the continuing growth of all pervasive capitalism, consumerism and militarism.

More detailed and updated information on this program may be available at: madisoncollege.edu. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

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Facilities Management Certificate

Program Number: 90-462-5

Certificate

School of Business and Applied Arts

School of Applied Science, Engineering, and Technology

Program offered at Madison Campuses

For information call:

(608) 246-6003 or (800) 322-6282 Ext. 6003

About the Certificate

The Facilities Management Certificate has been developed to meet the specific needs of the International Facility Management Association and its local chapter members in Madison Wisconsin. The certificate draws on courses from the School of Business, and also the School of Applied Technologies to form an integrated sequence.

The Facilities Management Certificate provides foundational knowledge in project management, safety, maintenance, and in building management including energy efficiency and is an ideal program of study for the current or aspiring Facility Management Professional.

Individuals who complete the certificate will be well positioned for employment as Facility Managers or in occupations relating to the Facility Management field.

Admission Requirements

To review program admission requirements and application processing dates visit the programs website at: <http://madisoncollege.edu/program-info/facilities-management>.

Requirements for Completion

The certificate will be awarded upon completion of the requirements with a minimum of a 2.0 grade average and no course grade lower than a C. The certificate will be awarded when completion of all requirements is verified after the semester the last course has been completed.

More detailed and updated information on this program may be available at: madisoncollege.edu. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

Madison Area Technical College provides equal opportunity in education and employment.

Rev. 04/15

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

Courses	Hrs/week	
	Credits	Lec
10-102-135 Project Management-Fundamentals.....	3	3-0
10-196-136 Safety in the Workplace.....	3	3-0
32-462-313 Maintenance Management*	2	2-0
32-401-315 <u>Building Management Systems**</u>	3	3-0
Total	11	

Notes:

*Pre-requisite to Maintenance Management, 32-462-313, is Machine Tool Math, College Math, or COMPASS Algebra score of 40 or higher.

**Pre-requisite to Building Management Systems, 32-401-315, is Heating and Air Conditioning 1. Please consult with instructor prior to enrolling.

Courses

10-102-135 Project Management-Fundamentals 3 credits
 Fundamentals of Project Management is an elective course in the Business Mid-Management program that will orient the student to the fundamentals of project management; defining projects; planning projects; scheduling projects; controlling projects; and leading projects. Emphasis will be placed on applying these fundamentals, as both a participant and project leader, in case studies and group projects, using worksheets and Microsoft Project software.

10-196-136 Safety in the Workplace 3 credits
 The learner applies the skills and tools necessary to provide a safe and secure work environment. Each learner will demonstrate the application of strategies regarding safety awareness, compliance, investigation and documentation. Other topics include: safety orientation, chemical safety, right-to-know, inspections, risk analysis, work place violence, substance abuse, first aid, fire and electrical safety, emergency preparedness and liaison with external agencies.

31-462-313 Maintenance Management 2 credits
 Emphasizes maintenance management and quality control techniques to give maintenance students an understanding of their role in an organization. Covers maintenance record keeping, parts ordering and shop operation. Prerequisite: 31-804-381 or COMPASS Algebra score of 40 or higher.

32-401-315 Building Management Systems 3 credits
 Studies computer-based energy and building control systems in detail. Includes sensing devices, pneumatic and otherwise, as well as basic energy efficiency calculating. Also presents and discusses cost and energy saving ideas and plans. Prerequisite: 32-462-308.



Fashion Marketing

Program Number: 10-104-4

Associate in Applied Science Degree

Business and Marketing Program Cluster

School of Business and Applied Arts

Program offered at Madison Campuses

For information call: (608) 246-6486 or
(800) 322-6282 Ext. 6486

About the Program

Fashion Marketing is a two-year associate degree program designed for people with a creative flair and an interest in business and fashion. The program presents exciting career opportunities for people who have the ability and interest to create, develop and promote new fashion products and services. Opportunities in retail, wholesale, manufacturing and related marketing fields are available to graduates of the program. Professional courses stress an understanding of marketing activities and knowledge of fashion products and practices. Study tours to markets and fashion centers such as Italy, New York and Chicago as well as guest lecturers and seminars in and out of scheduled class time enrich class studies and enable students to explore career opportunities. Students experience several real business projects to gain supervised work experience. Fashion students are also mentored by industry professionals.

Students take a variety of courses in Fashion Marketing, General Marketing, and Arts and Sciences. Sixty-eight (68) credits are required for graduation. The program offers articulation agreements with many local high schools and transferability with some four-year colleges.

The Fashion Marketing Program is directed by an Advisory Committee of people from area businesses, including but not exclusive to Boston Store, Buckle, Old Navy, Lands End, TJX Companies, Victoria's Secret, Macy's, Upshift and Terese Zache Designs. These companies employ many program graduates and often offer internships to Madison College students.

A **Retail Management Certificate** is also available. See the website (<http://madisoncollege.edu/program-info/retail-management-certificate>) for more information.

Admissions Requirements

To review admissions program requirements and application processing dates visit the programs website at: <http://madisoncollege.edu/program-info/fashion-marketing>.

Graduation Requirements

A minimum grade of "C" is required for all technical studies in order to graduate.

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2014-2015 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

		Credits	Hrs/week Lec-Lab
First Semester			
10-103-133	Excel-Beginning	1	0.25-1.5
10-103-137	Word-Beginning	1	0.25-1.5
10-103-143	PowerPoint-Beginning	1	0.25-1.5
10-104-102	Marketing Principles.....	3	3-0
10-104-195	Fashion Analysis.....	2	3-0
10-104-197	Apparel Marketing.....	3	3-0
10-104-198	Fashion CAD***	1	1-0
10-801-195	Written Communication	3	3-0
10-809-199	Psychology of Human Relations.....	3	3-0
Semester Total		18	
Second Semester			
10-104-104	Selling Principles.....	3	3-0
10-104-125	Principles of Advertising	3	3-0
10-104-194	Visual Merchandising*	3	3-0
10-104-196	Textiles*	2	2-0
10-804-123	Math with Business Applications	3	3-0
Semester Total		14	
Third Semester (summer)			
10-104-157	Fashion Internship	3	3-0
Fourth Semester			
10-104-113	LEAD (Leadership, Ethics, & Development)	3	3-0
10-104-118	Store Operations*	3	1-6
10-104-123	Merchandise Planning and Control*	3	3-0
10-801-198	Speech	3	3-0
10-801-195	Economics.....	3	3-0
Semester Total		15	
Fifth Semester			
10-104-103	Marketing Research.....	3	3-0
10-104-117	Store Management*	3	1-6
10-104-182	Portfolio Presentation/Job Shop	3	3-0
20-809-276	Business Ethics**.....	3	3-0
10-809-197	Contemporary American Society.....	3	3-0
	Elective.....	3	3-0
Semester Total		18	

* Courses offered in semester shown only.

** Other course options are available. See Academic Requirements (Advising Report) in your student center (MyMadisonCollege) for specifics.

***Those students interested in more of a design focus can take 10-104-122, Adobe Illustrator for Fashion (3 credits) in lieu of 10-104-198, Fashion CAD.



Program Courses

10-104-102 Marketing Principles 3 credits

This foundation course introduces students to the marketing process and how it operates in today's dynamic organizations. The entire marketing mix is examined on a broad scale. Topics include: market segmentation and targeting strategies, market research, consumer behavior, product development, pricing policies, distribution and an overview of promotion. Provides a comprehensive overview of the exciting world of marketing.

10-104-103 Marketing Research 3 credits

Businesses today need current, accurate information upon which to base their decisions. In this class, students learn not only how to gather marketing information from primary and secondary sources using online and other sources, but also how to apply that information to make better marketing decisions. Prerequisites: 10-104-102, 10-103-133, 10-103-137, and 10-103-143.

10-104-104 Selling Principles 3 credits

Acquaints students with the basic principles and applications of the sales process as they apply to industrial, wholesale and retail selling situations. Includes prospecting and qualifying, planning and pre-approaching, approaching the customer, the sales presentation/demonstration, handling objections, closing the sale and post-sale service and follow-up.

10-104-113 LEAD (Leadership, Ethics, and Development) 3 credits

Whether you are currently in a leadership position or preparing to be a leader in your professional or personal life, the ability to influence people is critical to your success. Today's marketers face rapid advancements in digital technologies and its applications, which require critical ethical considerations. This class will explore leadership principles, practices, and contemporary ethical implications to develop the leader within you.

10-104-117 Store Management 3 credits

Students in this course are responsible for managing Olivia's Gifts, a gift shop located on campus. Training in all aspects of store management with special emphasis in customer service, merchandising, financial planning and control, personnel, promotion, security, selling and sales management, and store layout and housekeeping.

10-104-118 Store Operations 3 credits

Students in this course are responsible for the operation of Olivia's Gifts. Training in all aspects of store operation with special emphasis on selling, merchandising, pricing, loss prevention and visual presentation is stressed. Students are required to attend at least one trade show during the semester to help select merchandise for the store.

10-104-123 Merchandise Planning and Control 3 credits

Students analyze the buying and merchandising functions in various types of organizations. The principles, procedures and techniques practiced by merchandisers are studied. Students may have the opportunity to interview a buyer, visit a market, participate in a floor move in a local business, compile a resource folder of relevant tools for buyers, and/or complete a computer simulation. Prerequisites: 10-104-194, 10-104-195, 10-104-196, 10-104-197, or instructor consent.

10-104-125 Principles of Advertising 3 credits

Students are introduced to the theory and practice of integrated marketing communications. All elements in the promotions mix are summarized but the major emphasis is on advertising. Students examine the characteristics of major media alternatives including radio, television, newspapers, magazines, outdoor, direct response and alternative media. Advertising research, planning and creativity are also explored and practiced. Prerequisite: 10-104-102.

10-104-157 Fashion Internship 3 credits

Internship offers practical work experience to third and fourth semester students in the Fashion area. Experiences that cannot be acquired in the classroom environment provide the student with the opportunity to blend theory with practice in an approved work setting, offered in the summer semester.

10-104-182 Portfolio Presentation 3 credits

This course includes an overview of methods to searching for a position in the Fashion Marketing field. We explore on- and off-line methods of personal and academic assessment. Mock interviews, including a viewing of your portfolio work, will be video taped. Resume writing and personal correspondence are included in a personalized approach.

10-104-194 Visual Merchandising 3 credits

The principles and elements of design are incorporated into interior and exterior merchandise presentation. Coordination of the total sales promotion effort is emphasized. Students are required to build many types of displays.

10-104-195 Fashion Analysis 2 credits

Students work with the elements and principles of design as they relate to fashion promotion and products. Forecasting, creativity and a grasp of the influences and sources of design are major components of the course. Computer-aided design is used to enhance the course. Co-requisite: 10-104-198.

10-104-196 Textiles 2 credits

Focuses on the technical information regarding fabrics and fibers required by apparel managers and merchandisers, and its application to merchandise buying and sales staff training.

10-104-197 Apparel Marketing 3 credits

Students study the types of business enterprises, activities, operations, interrelationships and practices in the fashion industry. Careers in each of these areas are explored. This is a survey course with emphasis on terminology and key sources of information in the industry.

10-104-198 Fashion CAD 1 credit

This class is a hands-on computer class using the Computer Aided Design program s, Adobe CS5, Microsoft Office as well as other current computer applications.

Recommended Electives

Design Track

10-104-120	Adobe Photoshop Fashion Design	3 credits
10-104-122	Adobe Illustrator Fashion Design	3 credits
10-104-186	History of Costume	3 credits

Retail Management Track

10-104-124	Retail Management	3 credits
10-104-160	Sales Management	3 credits
10-196-191	Principles of Supervision	3 credits

Marketing Track

10-104-110	Supervision Principles	3 credits
10-104-111	Innovative Trends in Marketing	3 credits
10-104-112	Marketing Design Strategies	3 credits
10-104-114	Social Media Principles	3 credits
10-104-162	Mobile Marketing (Social Media)	3 credits
10-104-185	Customer Service Management	3 credits
10-201-198	Social Media/Web Design Strategies	3 credits

Career Potential:

- Buyer Marketing
- Merchandising
- Planning and Distribution
- Product Development
- Production
- Public Relations
- Sales Representative
- Personal Stylist
- Store Owner
- Store Management
- Stylist
- Visual Merchandising

More detailed and updated information on this program may be available at: madisoncollege.edu. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

Madison Area Technical College provides equal opportunity in education and employment.

Rev. 03/15

Finance

Program Number: 10-114-2

Associate in Applied Science Degree

Accounting and Finance Program Cluster

School of Business and Applied Arts

Program offered at Madison Campuses

First-year or limited courses offered at Fort Atkinson, Portage, Reedsburg and Watertown Campuses

For information call:

(608) 246-6003 or (800) 322-6282 Ext. 6003

About the Program

The Finance program provides the educational background and training required for entry positions in banks, savings and loan associations, finance companies, credit unions, real estate, insurance, financial planning, government, or mercantile and manufacturing enterprises. Job experience and continuing education provide the qualifications necessary for advancement. Finance relates to the management of, not necessarily the accounting for, monetary affairs.

Admissions Requirements

To review admissions program requirements and application processing dates visit the programs website at: <http://madisoncollege.edu/program-info/finance>.

Graduation Requirement

Please note: A minimum grade of C is required for all technical studies courses in order to graduate.

Program Courses

10-101-111 Accounting 1–Principles 4 credits
Introduction to the field of accounting. The accounting cycle of journalizing transactions, posting, adjusting and closing entries, as well as the preparation of accounting statements is emphasized for service industries and merchandising concerns. Details of accounting for cash and receivables are studied. An introduction to a computerized accounting system is also included. Prerequisite: strongly recommended completion of or concurrent enrollment in Math of Finance, 10-804-144; otherwise, completion of Elementary Algebra, 10-834-110 or Basic Algebra, 74-854-793, or Math Concepts, 74-854-747 (or sufficient score on the COMPASS test).

10-101-113 Accounting 2–Principles 4 credits
Procedures of accounting for partnerships and corporations. Additional topics include fixed assets, current liabilities and payroll, long-term liabilities, investments, statement of cash flows, analysis of financial statements, and an introduction to cost accounting. Prerequisite: grade of C or better in 10-101-111 and completion of or concurrent enrollment in 10-804-144.

10-101-118 Management Accounting 4 credits
Emphasizes the managerial use of accounting reports, the problem-solving functions of accounting in relation to current planning and control, performance evaluation, long-range planning, budgets and cost-volume-profit relationships. Prerequisite: 10-101-111.

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

		Credits	Hrs/week Lec-Lab
First Semester			
10-101-111	Accounting 1-Principles.....	4	4-0
10-114-130	Personal Finance.....	3	3-0
10-103-133	Excel–Beginning.....	1	0.25-1.5
10-103-139	Excel–Intermediate.....	1	0.25-1.5
10-801-195	Written Communication* OR	3	3-0
20-801-201	English 1	(3)	3-0
10-804-144	Math of Finance.....	3	3-0
Semester Total		15	

Second Semester			
10-101-113	Accounting 2-Principles.....	4	4-0
10-102-104	Business Statistics.....	3	3-0
10-103-145	Access-Beginning.....	1	0.25-1.5
10-114-128	Financial Institutions.....	3	3-0
10-102-160	Business Law 1 OR	3	3-0
10-194-182	Real Estate Law	(4)	4-0
10-809-195	Economics* OR	3	3-0
20-809-211	Macro Economics*.....	(3)	3-0
Semester Total		17 (18)	

Third Semester			
10-101-118	Management Accounting.....	4	4-0
10-114-126	Corporate Finance.....	3	3-0
10-162-126	Introduction to Loss Investigation.....	3	3-0
10-809-199	Psychology of Human Relations* OR	3	3-0
20-809-231	Intro to Psychology.....	(3)	3-0
20-810-205	Small Group & Interpersonal Communication**.....	3	3-0
Semester Total		16	

Fourth Semester			
10-114-127	Financial Analysis.....	3	3-0
10-114-140	Investments	3	3-0
10-102-143	Management Techniques.....	3	3-0
10-801-197	Technical Reporting* OR.....	3	3-0
20-801-202	English 2	(3)	3-0
10-801-198	Speech*	3	3-0
	Elective	3	E
Semester Total		18	

IMPORTANT: Students are encouraged to complete courses in the above semester order. **Financial Analysis course offered spring semester only. Other Finance courses rotate between day and evening sections every other semester.** Check timetable carefully or discuss with Finance instructor.

Electives must be associate degree (100-level) or college transfer (200-level) courses.

College Transfer Options:

*For the Associate Degree general education courses, **college transfer equivalents** are available. Please see program faculty or an advisor for complete details. Each student is advised to plan for college transfer possibilities **in advance** of starting the program. For the most accurate transfer information, directly contact the Admissions Office of the transfer school.

**Other courses may fulfill this requirement. See your Academic Requirements (Advising Report) for a list of acceptable courses.

Note: Students are placed in English or mathematics courses based on their scores on the COMPASS or ASSET test or on completion of the appropriate prerequisite.

See next page for courses related to business that may be taken in addition to requirements for increased business knowledge and marketability.



Program Courses cont'd

10-102-104 Business Statistics 3 credits
 Introduces the theory of and application to basic statistical methods. Emphasizes solving practical business problems. Topics include basic measures, probability, sampling and time series analysis. Prerequisite: 10804144 (recommended with grade of C or better) OR 20804201; and co-req of 10103139.

10-102-143 Management Techniques 3 credits
 Covers problems facing management and workers with special emphasis on supervisory personnel and their challenges. Management principles are applied to such topics as the relationship of management to the business, its employees, the owner, other customers and the community. Problem solving at the supervisory level is emphasized.

10-102-160 Business Law 1 3 credits
 Introductory survey course covering legal principles used in the business world. Emphasizes contracts, sales, bailments, agency, employment, property law, torts, criminal law, marital property and bankruptcy. Federal, state and case law serve as the basis of study.

10-114-120 Financial Planning 3 credits
 This is a comprehensive course incorporating the review of investment statements, tax documents, insurance policies and other inputs to a well-rounded financial program. Cash flow analysis and Goal Based Planning are compared through specific examples and projects that an Investment Advisor/Financial Planner would deal with on a regular basis. An understanding of personal finance and investments are recommended. This course assumes the student understands the time value of money.

10-114-126 Corporate Finance 3 credits
 This intermediate-level course views finance from the perspective of the financial manager. Topics include techniques of financial analysis, forecasting and budgeting, operating and financial leverage, working capital management, the time value of money, cost of capital, long-term debt and stock financing, dividends and retained earnings. Students are expected to apply both principles of accounting and finance. Prerequisites: grade of C or better in 10-101-111 and 10-804-144.
Note: Finance students are encouraged to complete 10-101-113 before taking Corporate Finance, 10-114-126.

10-114-127 Financial Analysis 3 credits
 A capstone course for the Finance program. Students work in teams to analyze an industry and work individually to analyze a specific company. The project familiarizes students with common sources of business and financial information and develops their analytical skills. A final oral and written report is required. Prerequisites: 10-103-133, and grade of C or better in 10-101-118 or 10-101-125. **Offered Spring Semester Only.**

10-114-128 Financial Institutions 3 credits
 Introductory-level course which considers the role of financial institutions in the economy. Topics include financial intermediation, the Federal Reserve System, financial markets and instruments, and non-bank financial institutions, including savings and loan associations, credit unions, finance companies, insurance companies, pension funds, mutual funds and governmental financial institutions. Prerequisite: grade of C or better in 10-804-144.

10-114-130 Personal Finance 3 credits
 This introductory course considers finance from the point of view of the individual or family unit. Topics include budgets, insurance, housing, borrowing, saving, investing and estate planning. Students complete personal finance projects applying the material learned.

10-114-140 Investments 3 credits
 This advanced course considers alternative investment media and markets. Topics include the investment environment, fundamental and technical analysis, timing, selectivity and diversification, and computer-based investment management. Investment analysis will make use of a student-developed spreadsheet platform. Prerequisites: grade of C or better in 10-114-130 and 10-804-144.

10-162-126 Introduction to Loss Investigation (AIC 33) 3 credits
 The claim function, factors influencing claims, the steps involved in analyzing, negotiating, and litigating first and third party claims, and the basics of property and liability losses will be covered in this class.

10-194-182 Real Estate Law 4 credits
 Designed to acquaint students with the field of real estate as well as with Wisconsin real estate law and to prepare them for the Wisconsin Real Estate Salesperson's Examination. It covers topics such as the law of agency, legal descriptions, real estate contracts, mortgages, land contracts, consumer-protection laws, landlord-tenant laws, fair-housing ordinances and various other subjects related to the real estate profession. It is particularly oriented toward Wisconsin laws. Also available in CD-ROM format.

Finance Recommended Electives and Concentration Areas
 Finance students, while successfully completing the core curriculum, may wish to enhance their knowledge and employability further by choosing one or more electives in a related concentration area. Although not specifically required, these courses would count towards the elective credits in the program. (Note: only 3 credits of electives are required in the program and are not limited to these specific courses.)

Concentrations:

Financial Planning:

10-104-104	Selling Principles	3 credits
10-114-120	Financial Planning	3 credits
10-162-131	Intro to Employee Benefits	3 credits

Insurance (certificate also available):

Any approved six insurance credits. May include:

10-162-125	Commercial Insurance	3 credits
10-162-126	Introductions to Claims	3 credits
10-162-133	Assessing and Managing Risk	3 credits
10-162-135	Detecting Employee Fraud	3 credits

Small Business:

10-145-102	Small Business Development & Planning	3 credits
10-145-106	Small Business Marketing & Promotion Tech	3 credits

Accounting:

10-101-138	Accounting & Payroll Systems	3 credits
10-101-123	Tax 1	4 credits

Management:

10-102-134	Business Organization and Management	3 credits
10-116-145	Introduction to Human Resources	3 credits

Other recommendations:

10-101-140	Accounting/Business Internship	3 credits
10-162-140	Risk Management and Insurance Internship	3 credits

Career Potential:

- Personal Banker/Consumer Lender
- Teller
- Paraplanner
- Customer Service Representative
- Finance Training
- Financial Planning Assistant
- Loan Coordinator
- Trust Assistant

With additional education and/or work experience, graduates may find employment as a:

- Financial Planner
- Stockbroker
- Financial Institution Manager

More detailed and updated information on this program may be available at: madisoncollege.edu. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

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Rev. 04/15

Fire Protection Technician Fire Service Certification

Program Number: 10-503-2

Program Number: 30-503-2

Protective Services Program Cluster

School of Human and Protective Services

Program offered at Truax Campus

For information call:
(608) 246-6911 or (800) 322-6282 Ext. 6911

Fire Protection Technician

Associate in Applied Science Degree

The constant changes and growing complexities of modern living and the environment are creating a demand for college-trained people in the fire-service field.

Opportunities for graduates exist with municipal fire departments, insurance and government agencies, and in the field of industrial safety. This program of study is designed to meet the needs of personnel currently employed in fire service positions and those desiring preparation for employment. Classes should be taken in the sequence listed.

It is recommended that students have one year of high school algebra and one year of high school science. A COMPASS Reading score of 80 or higher is required for the Fire Recruit Academy 10-503-100 course and for the EMT 1 10-531-102 course. CPR certification at a professional level is also required for EMT.

Admission Requirements

To review program admissions program requirements and application processing dates, visit the program's website at: <http://madisoncollege.edu/program-info/fire-protection-technician>.

Requirements for Graduation

Students must achieve at least a 2.0 (C) grade in all program core courses and an overall 2.0 (C) grade point average.

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

Fire Protection Technician

		Credits	Hrs/week Lec-Lab-Clinic
First Semester			
10-503-143	Building Construction	3	3-0
10-503-144	OSHA for the Fire Service	3	3-0
10-503-191	Principles of Emergency Services	2	2-0
10-531-102	Emergency Medical Technician part 1 AND	2	7-4
10-531-103	Emergency Medical Technician part 2	3	7-4
10-801-195	Written Communication OR	3	3-0
20-801-201	English 1*	(3)	(3-0)
10-804-107	College Mathematics OR	3	4-0
20-804-201	Intermediate Algebra*	(3)	(3-0)
Semester Total		19	

Second Semester

10-503-141	Firefighter 2/Hazardous Materials Operations AND	1	1-0
10-503-142	Fire Fighting Principles OR	4	4-0
10-503-100 Δ	(5)	(2-0-10)
10-503-154	Hazardous Materials Chemistry	2	2-0
10-801-196	Oral/Interpersonal Communication OR	3	3-0
20-810-205	Small Group and Interpersonal Communication*	(3)	(3-0)
10-806-134	General Chemistry	4	3-2
10-809-199	Psychology of Human Relations OR	3	3-0
20-809-231	Introduction to Psychology*	(3)	(3-0)
Semester Total		17	

Third Semester

10-503-148	Principles of Fire and Emergency Service mini tration	4	4-0
10-503-151	Fire Prevention	4	4-0
10-503-195	Fire Behavior and Combustion	3	3-0
10-801-197	Technical Reporting OR	3	3-0
20-801-202	English 2*	(3)	(3-0)
10-809-197	Contemporary American Society OR	3	3-0
20-809-203	Intro to Sociology*	(3)	(3-0)
Semester Total		17	

Fourth Semester

10-503-156	strategie a ti In i ent Management	4	4-0
10-503-157	ire In e tigation	3	3-0
10-503-192	Principles of Emergency Services/Survival	3	2-2
10-503-193	Fire Protection System	3	3-0
10-503-194	ire rote tion y rauli	3	3-0
	Elective	1	E
Semester Total		17	

*College transfer equivalent courses

Prerequisite required; consult department office

Note: Students are placed in English or mathematics courses based on their scores on the COMPASS test or on completion of the appropriate prerequisite/s.

Fire Service Certification

30-503-300	Fire Recruit Academy OR	5	6-4
10-503-100	Fire Recruit Academy Δ	(5)	(2-0-10)
10-531-102			
10-531-103			
Total		10	



Program Courses

Fire Protection Technician Associate in Applied Science Degree

10-503-139 Principles of Emergency Services 3 credits

Provides an overview to fire protection; career opportunities in the fire protection and related fields; philosophy and history of fire protection/service; fire loss analysis; organization and function of public and private fire protection services; fire departments as part of local government; laws and regulations affecting the fire service; and fire service nomenclature.

10-503-141 Firefighter 2/Hazardous Materials Operations 1 credit

This course meets the NFPA requirements for firefighters. Provides the first responders with the awareness and knowledge to identify hazardous materials and to safely respond to hazardous materials (hazmat) emergencies

10-503-142 Fire Fighting Principles 4 credits

Describes basic fire behavior, and techniques used to control structural and related fire emergencies, and life safety practices. Students perform all practical evolutions necessary to control and extinguish fires and otherwise meet all requirements for Firefighter 1 certification with the State of Wisconsin.

10-503-143 Building Construction 3 credits

Covers the basic principles of construction and specific classifications of construction as they relate to fire prevention, fire resistance, fire and smoke containment, and performance under fire conditions. Specific building styles, including high-rise and multi-family dwelling units, are also studied.

10-503-144 OSHA for the Fire Service 3 credits

This course introduces the basic concepts of occupational health and safety as it relates to emergency service organizations. Topics include risk evaluation and control procedures for fire stations, training sties, emergency vehicles and emergency situations involving fire, EMS, hazardous materials and technical rescue. Upon completion of this course, students should be able to establish and manage a safety program in an emergency service organization.

10-503-148 Principles of Fire and Emergency Service Administration 4 credits

This course introduces the student to the organization and management of a fire department and the relationship of government agencies to the fire service. Emphasis on fire service leadership from the perspective of the company officer. Prerequisites: 10-503-191, 10-503-143, 10-503-144, 10-503-100, and 10-503-154.

10-503-151 Fire Prevention 4 credits

Provides functional information regarding the history and philosophy of fire prevention, organization and operation of a fire prevention bureau, use of fire codes, and identification and correction of fire hazards. Meets all requirements for Fire Inspector 1 certification with the State of Wisconsin.

10-503-154 Hazardous Materials Chemistry 2 credits

This course provides basic chemistry relating to the categories of hazardous materials including recognition, identification, reactivity, and health hazards encountered by emergency services.

10-503-156 Strategies, Tactics and Incident Management 4 credits

Provides an in-depth analysis of the principles of emergency response through utilization of an incident management system. Prepares students to pursue current national ICS training requirements. Prerequisites: 10-503-191, 10-503-143, 10-503-144, 10-503-100, 10-503-154, 10-503-151, 10-503-148, and 10-503-195.

10-503-157 Fire Investigation 3 credits

Provides learners with the fundamentals and technical knowledge needed for proper fire scene investigation. Prerequisites: 10-503-191, 10-503-143, 10-503-144, 10-503-100, 10-503-154, 10-503-151, 10-503-148, and 10-503-195.

10-503-192 Principles of Emergency Services/Survival 3 credits

This course introduces the basic principles and history related to the national firefighter life safety initiatives, focusing on the need for cultural and behavior change throughout the emergency services. Prerequisites: 10-503-191, 10-503-143, 10-503-144, 10-503-100, 10-503-154, 10-503-151, 10-503-148, 10-503-195.

10-503-193 Fire Protection Systems 3 credits

Provides information relating to the features of design and operation of fire detection and suppression systems. Prerequisites: 10-503-191, 10-503-143, 10-503-144, 10-503-100, 10-503-154, 10-503-151, 10-503-148, and 10-503-195.

10-503-194 Fire Protection Hydraulics 3 credits

This course provides a foundation of theoretical knowledge in order to understand the principles of the use of water in fire protection and to apply hydraulic principles to analyze and to solve water supply problems. Prerequisites: 10-503-191, 10-503-143, 10-503-144, 10-503-100, 10-503-154, 10-503-151, 10-503-148, and 10-503-195.

10-503-195 Fire Behavior and Combustion 3 credits

This course explores the theories and fundamentals of how and why fires start, spread and are controlled. Prerequisites: 10-503-191, 10-503-143, 10-503-144, 10-503-100, 10-503-154.

Recommended Electives:

10-503-101 Intro to Protective Services 3 credits

****One (1) elective credit is required for the program and can be any associate degree or college transfer course of your choice.**

Fire Service Certification Less-Than-One-Year Diploma

10-503-100 Fire Recruit Academy 5 credits

200 hours of firefighting training prepares students for the State of Wisconsin Firefighter 1 and Firefighter 2 certification examinations. Completion of the EMT Basic Course also will provide the student with a diploma in Fire Service Certification.

Prerequisite: Reading score of 80+, OR have transcripts on file showing a college level English course with a grade of C or better.

Note: The Fire Recruit Academy is accredited by the International Fire Service Accreditation Congress.

10-531-102 Emergency Medical Technician 1 2 credits

Based upon the State of Wisconsin/U.S. Department of Transportation/National Highway Transportation Safety Administration curriculum, this approximately 54 hour course covers modules 1-3 and includes classroom instruction, lectures, discussion, demonstrations, skill practice on the roles and responsibilities of being an Emergency Medical Services Provider, as well as basic communication and documentation skills, anatomy and physiology, performing a patient assessment, critical thinking, and basic airway management. This course is a co-requisite of the EMT 2 course. Prerequisite: Reading score of 80+ OR have transcripts on file showing a college level English course with a grade of C or better. CPR certification at a professional level is also required.

10-531-101 Emergency Medical Technician 2 3 credits

This course is a co-requisite of the EMT 1 course and continues the State of Wisconsin/U.S. Department of Transportation/National Highway Transportation Safety Administration curriculum. This approximately 130 hour course covers modules 4-8 and includes classroom instruction, lectures, discussion, demonstrations, online assignments, and skill practice on emergent medical and traumatic encounters, dealing with special populations, and EMS Operations. Ten real-life or high-fidelity patient care experiences are required. Successful completion of EMT 1 and EMT 2 prepares students to obtain licensure as an EMT Basic in the State of Wisconsin. This course is a co-requisite of the EMT 1 course. Prerequisite: Reading score of 80+, OR have transcripts on file showing a college level English course with a grade of C or better.

Career Potential:

- Firefighter
- Fire Protection Technician
- Fire Protection Systems Installer
- Industrial Safety Technician
- Property Risk Management Specialist

With additional education and/or work experience, graduates may find employment as:

- Fire Protection Consultant
- Fire Protection Equipment Sales Manager
- Industrial Safety Manager
- Municipal Safety Manager
- Property Loss/Risk Management Supervisor
- Fire Investigator
- Fire Marshal
- Fire Inspector
- Fire Officer

More detailed and updated information on this program may be available at: madisoncollege.edu. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

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Fire Protection Technician Fire Service Certification

Program Number: 10-503-2

Program Number: 30-503-2

Protective Services Program Cluster

School of Human and Protective Services

Program offered at Truax Campus

For information call:
(608) 246-6911 or (800) 322-6282 Ext. 6911

Fire Protection Technician

Associate in Applied Science Degree

The constant changes and growing complexities of modern living and the environment are creating a demand for college-trained people in the fire-service field.

Opportunities for graduates exist with municipal fire departments, insurance and government agencies, and in the field of industrial safety. This program of study is designed to meet the needs of personnel currently employed in fire service positions and those desiring preparation for employment. Classes should be taken in the sequence listed.

It is recommended that students have one year of high school algebra and one year of high school science. A COMPASS Reading score of 80 or higher is required for the Fire Recruit Academy 10-503-100 course and for the EMT 1 10-531-102 course. CPR certification at a professional level is also required for EMT.

Admission Requirements

To review program admissions program requirements and application processing dates, visit the program's website at: <http://madisoncollege.edu/program-info/fire-protection-technician>.

Requirements for Graduation

Students must achieve at least a 2.0 (C) grade in all program core courses and an overall 2.0 (C) grade point average.

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

Fire Protection Technician

First Semester	Credits	Hrs/week	
		Lec	Lab-Clinic
10-503-143 Building Construction	3		3-0
10-503-144 OSHA for the Fire Service	3		3-0
10-503-191 Principles of Emergency Services	2		2-0
10-531-102 Emergency Medical Technician 1	2		7-4
10-531-103 Emergency Medical Technician 2	3		7-4
10-801-195 Written Communication OR	3		3-0
20-801-201 English 1*	(3)		(3-0)
10-804-107 College Mathematics OR	3		4-0
20-804-201 Intermediate Algebra*	(3)		(3-0)
Semester Total	19		

Second Semester

10-503-141 Firefighter 2/Hazardous Materials Operations AND ...	1		1-0
10-503-142 Fire Fighting Principles OR	4		4-0
10-503-100 Fire e recruit a emy	(5)		(2-0-10)
10-503-154 Hazardous Materials Chemistry.....	2		2-0
10-801-196 Oral/Interpersonal Communication OR	3		3-0
20-810-205 Small Group and Interpersonal Communication*	(3)		(3-0)
10-806-134 General Chemistry	4		3-2
10-809-199 Psychology of Human Relations OR	3		3-0
20-809-231 Introduction to Psychology*	(3)		(3-0)
Semester Total	17		

Third Semester

10-503-148 Principles of Fire and Emergency Service mini tration	4		4-0
10-503-151 Fire Prevention.....	4		4-0
10-503-195 Fire Behavior and Combustion	3		3-0
10-801-197 Technical Reporting OR	3		3-0
20-801-202 English 2*	(3)		(3-0)
10-809-197 Contemporary American Society OR	3		3-0
20-809-203 Intro to Sociology*	(3)		(3-0)
Semester Total	17		

Fourth Semester

10-503-156 Strategie a ti In i ent Management	4		4-0
10-503-157 Fire In e tigation	3		3-0
10-503-192 Principles of Emergency Services/Survival	3		2-2
10-503-193 Fire rote tion y tem	3		3-0
10-503-194 Fire rote tion y rauli	3		3-0
Elective.....	1		E
Semester Total	17		

*College transfer equivalent courses

Prerequisite required; consult department office

Note: Students are placed in English or mathematics courses based on their scores on the COMPASS test or on completion of the appropriate prerequisite/s.

Fire Service Certification

30-503-300 Fire Recruit Academy OR	5		6-4
10-503-100 Fire Recruit AcademyΔ.....	(5)		(2-0-10)
10-531-102 Emergency Medical Technician 1	2		7-4
10-531-103 Emergency Medical Technician 2	3		7-4
Total	10		



Program Courses

Fire Protection Technician Associate in Applied Science Degree

10-503-139 Principles of Emergency Services 3 credits

Provides an overview to fire protection; career opportunities in the fire protection and related fields; philosophy and history of fire protection/service; fire loss analysis; organization and function of public and private fire protection services; fire departments as part of local government; laws and regulations affecting the fire service; and fire service nomenclature.

10-503-141 Firefighter 2/Hazardous Materials Operations 1 credit

This course meets the NFPA requirements for firefighters. Provides the first responders with the awareness and knowledge to identify hazardous materials and to safely respond to hazardous materials (hazmat) emergencies

10-503-142 Fire Fighting Principles 4 credits

Describes basic fire behavior, and techniques used to control structural and related fire emergencies, and life safety practices. Students perform all practical evolutions necessary to control and extinguish fires and otherwise meet all requirements for Firefighter 1 certification with the State of Wisconsin.

10-503-143 Building Construction 3 credits

Covers the basic principles of construction and specific classifications of construction as they relate to fire prevention, fire resistance, fire and smoke containment, and performance under fire conditions. Specific building styles, including high-rise and multi-family dwelling units, are also studied.

10-503-144 OSHA for the Fire Service 3 credits

This course introduces the basic concepts of occupational health and safety as it relates to emergency service organizations. Topics include risk evaluation and control procedures for fire stations, training sties, emergency vehicles and emergency situations involving fire, EMS, hazardous materials and technical rescue. Upon completion of this course, students should be able to establish and manage a safety program in an emergency service organization.

10-503-148 Principles of Fire and Emergency Service Administration 3 credits

This course introduces the student to the organization and management of a fire department and the relationship of government agencies to the fire service. Emphasis on fire service leadership from the perspective of the company officer. Prerequisites: 10-503-191, 10-503-143, 10-503-144, 10-503-100, and 10-503-154.

10-503-151 Fire Prevention 4 credits

Provides functional information regarding the history and philosophy of fire prevention, organization and operation of a fire prevention bureau, use of fire codes, and identification and correction of fire hazards. Meets all requirements for Fire Inspector 1 certification with the State of Wisconsin.

10-503-154 Hazardous Materials Chemistry 2 credits

This course provides basic chemistry relating to the categories of hazardous materials including recognition, identification, reactivity, and health hazards encountered by emergency services.

10-503-156 Strategies, Tactics and Incident Management 4 credits

Provides an in-depth analysis of the principles of emergency response through utilization of an incident management system. Prepares students to pursue current national ICS training requirements. Prerequisites: 10-503-191, 10-503-143, 10-503-144, 10-503-100, 10-503-154, 10-503-151, 10-503-148, and 10-503-195.

10-503-157 Fire Investigation 3 credits

Provides learners with the fundamentals and technical knowledge needed for proper fire scene investigation. Prerequisites: 10-503-191, 10-503-143, 10-503-144, 10-503-100, 10-503-154, 10-503-151, 10-503-148, and 10-503-195.

10-503-192 Principles of Emergency Services/Survival 3 credits

This course introduces the basic principles and history related to the national firefighter life safety initiatives, focusing on the need for cultural and behavior change throughout the emergency services. Prerequisites: 10-503-191, 10-503-143, 10-503-144, 10-503-100, 10-503-154, 10-503-151, 10-503-148, 10-503-195.

10-503-193 Fire Protection Systems 3 credits

Provides information relating to the features of design and operation of fire detection and suppression systems. Prerequisites: 10-503-191, 10-503-143, 10-503-144, 10-503-100, 10-503-154, 10-503-151, 10-503-148, and 10-503-195.

10-503-194 Fire Protection Hydraulics 3 credits

This course provides a foundation of theoretical knowledge in order to understand the principles of the use of water in fire protection and to apply hydraulic principles to analyze and to solve water supply problems. Prerequisites: 10-503-191, 10-503-143, 10-503-144, 10-503-100, 10-503-154, 10-503-151, 10-503-148, and 10-503-195.

10-503-195 Fire Behavior and Combustion 3 credits

This course explores the theories and fundamentals of how and why fires start, spread and are controlled. Prerequisites: 10-503-191, 10-503-143, 10-503-144, 10-503-100, 10-503-154.

Recommended Electives:

10-503-101 Intro to Protective Services 3 credits

****1 elective credit is required for the program and can be any associate degree or college transfer credits of your choice.**

Fire Service Certification Less-Than-One-Year Diploma

10-503-100 Fire Recruit Academy 5 credits

200 hours of firefighting training prepares students for the State of Wisconsin Firefighter I and Firefighter 2 certification examinations. Completion of the EMT Basic Course also will provide the student with a diploma in Fire Service Certification. Prerequisite: Reading score of 80+, OR have transcripts on file showing a college level English course with a grade of C or better.

Note: The Fire Recruit Academy is accredited by the International Fire Service Accreditation Congress.

10-531-102 Emergency Medical Technician 1 2 credits

Based upon the State of Wisconsin/U.S. Department of Transportation/National Highway Transportation Safety Administration curriculum, this approximately 54 hour course covers modules 1-3 and includes classroom instruction, lectures, discussion, demonstrations, skill practice on the roles and responsibilities of being an Emergency Medical Services Provider, as well as basic communication and documentation skills, anatomy and physiology, performing a patient assessment, critical thinking, and basic airway management. This course is a co-requisite of the EMT 2 course. Prerequisite: Reading score of 80+ OR have transcripts on file showing a college level English course with a grade of C or better. CPR certification at a professional level is also required.

10-531-101 Emergency Medical Technician 2 3 credits

This course is a co-requisite of the EMT 1 course and continues the State of Wisconsin/U.S. Department of Transportation/National Highway Transportation Safety Administration curriculum. This approximately 130 hour course covers modules 4-8 and includes classroom instruction, lectures, discussion, demonstrations, online assignments, and skill practice on emergent medical and traumatic encounters, dealing with special populations, and EMS Operations. Ten real-life or high-fidelity patient care experiences are required. Successful completion of EMT 1 and EMT 2 prepares students to obtain licensure as an EMT Basic in the State of Wisconsin. This course is a co-requisite of the EMT 1 course. Prerequisite: Reading score of 80+, OR have transcripts on file showing a college level English course with a grade of C or better.

Career Potential:

- Firefighter
- Fire Protection Technician
- Fire Protection Systems Installer
- Industrial Safety Technician
- Property Risk Management Specialist

With additional education and/or work experience, graduates may find employment as:

- Fire Protection Consultant
- Fire Protection Equipment Sales Manager
- Industrial Safety Manager
- Municipal Safety Manager
- Property Loss/Risk Management Supervisor
- Fire Investigator
- Fire Marshal
- Fire Inspector
- Fire Officer

More detailed and updated information on this program may be available at: madisoncollege.edu. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

Madison Area Technical College provides equal opportunity in education and employment.

Certificate

Hospitality Program Cluster

School of Business and Applied Arts

Certificate courses offered at Madison Campuses

For information call: (608) 246-6003 or
 (800) 322-6282 Ext. 6003

About the Certificate

The Fitness/Health Club Specialist Certificate qualifies people for employment as personal trainers, fitness instructors and activity directors in health clubs and recreational centers. The certificate requires one-year for completion and consists of 17 credits. Students are prepared to take certifications for the American Council on Exercise (ACE) upon completion of this certificate.

This certificate compliments the material covered in the Recreation Management Program and is open to students enrolled in that program as well as Liberal Studies/Transfer students wishing to pursue degrees and/or careers in sports medicine, physical therapy or related fields. For further information, please contact: Tracie Bowers, lead instructor, 608-246-6057 or tdbowers@madisoncollege.edu.

Students register for individual courses during the open registration period each semester. Due to popularity of these courses, it is recommended that potential students apply for the Recreation Management-Activity Fitness Leader program to improve their chances of registering for desired classes.

Admissions Requirements

To review admissions program requirements and application processing dates visit the programs website at: <http://madisoncollege.edu/program-info/fitnesshealth-club-specialist>.

Unique Requirements for Completion

The certificate will be awarded upon completion of the requirements with a minimum of a 2.0 grade average and no course grade lower than a C. The certificate will be awarded when completion of all requirements is verified after the semester the last course has been completed.

Courses

10-109-138 Health Club Operations and Management 3 credits
 Covers a wide range of topics about the fitness industry. Topics include: industry statistics, history, facility classifications, marketing, membership sales, equipment purchasing, maintenance, hiring, staffing, trade organizations and more. Upon completion, the student will have a solid understanding of how the fitness industry functions.

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

		Credits	Hrs/week Lec-Lab
First Semester (Fall)			
10-109-138	Health Club Operations and Management*	3	3-0
10-109-195	Recreation Industry Budget and Financial Mgmt	3	3-0
10-807-160	Anatomy and Physiology for Exercise	3	3-0
Total		9	
Second Semester (Spring)			
10-109-173	Group Exercise Leadership * **	3	1-4
10-109-176	Personal Trainer Development**	3	1-3
20-807-255	Prevention and Care of Athletic Injuries	2	2-0
Total		8	

*Courses offered in semester shown only.

** These courses prepare students for national certification with the American Council on Exercise (ACE).

10-109-176 Personal Trainer Development 3 credits
 ACE PREP COURSE—Students are taught the skills and information on developing exercise programs for healthy adults. This course also prepares individuals to take the American Council on Exercise national personal trainer exam. A broad range of topics is covered including anatomy, exercise physiology, health screening, fitness testing and more. An observational research paper on a trainer-client relationship is required. Recommend taking 10-807-160 or equivalent.

10-109-173 Group Exercise Leadership 3 credits
 This course prepares individuals to teach group exercise and recreation for different age groups and take the American Council on Exercise National Exam. It is a comprehensive training program that covers topics such as exercise physiology, anatomy, body mechanics, and safety, choreography development, teaching methodologies, and group dynamics. Students have the option to earn Madison College Instructor Certification. Recommend taking 10-807-160 or equivalent.

10-109-195 Recreation Industry Budget and Financial Management 3 credits
 Financial methods and techniques utilized in the recreation industry. Emphasis on sources and methods of financing, forecasting cost and income, budgeting, pricing, grant seeking, sponsorship, fundraising and fiscal management.

10-807-160 Anatomy and Physiology for Exercise 3 credits
 Features lectures and activities dealing with the anatomy and physiology of the human body. Covers body systems, including the respiratory, cardiovascular, skeletal, nervous and muscular systems. Presents information on chemistry, cell structure and metabolism. Units in exercise physiology and contemporary fitness issues included.

20-807-255 Prevention and Care of Athletic Injuries 2 credits
 An introduction to the care and prevention of athletic injuries including emergency care, taping techniques, and treatment/ rehabilitation of injuries. Also useful for students interested in the field of athletic training, teaching or coaching.

More detailed and updated information on this program may be available at madisoncollege.edu. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

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Rev. 04/15



Food Service Production

Program Number: 31-303-2

One-Year Technical Diploma

Hospitality Program Cluster

School of Business and Applied Arts

Program offered at Madison Campuses

For information call:

(608) 246-6003 or (800) 322-6282 Ext. 6003

About the Program

The Food Service Production program helps students develop skills to pursue a career in the food-service industry within restaurants, bakeries, catering services, delis, hotels, resorts, health care facilities and schools.

The program incorporates comprehensive hands-on learning experiences complimented by supportive and theoretical activities to prepare students for a wide range of career opportunities in the food service industry. All of the credits for this program may be applied to the Culinary Arts Program.

Statistics show that the food service industry is America's #1 retail employer. In Wisconsin and throughout the nation, there is an increasing need for well-trained food service personnel for restaurants, catering enterprises, health care facilities and other institutional food service establishments.

Graduates of this program typically earn \$16,000 to \$20,000 per year.

This program is designed to be completed in two semesters; however, students may attend selected courses on a part-time basis if desired.

Competency in Windows, Internet and basic word processing is necessary for success in this program. Students may take Windows (10-103-134/135), Word-Beginning (10-103-137) and/or Internet Introduction (10-103-146) during the first semester if they do not meet this requirement.

Students must have appropriate competency in math, reading and writing to succeed in this program. If remedial course work is recommended, it is suggested that these courses be completed before beginning the Food Service Production program courses.

Potential students must be physically able to lift 50# on a routine basis and stand for a minimum of eight hours per day. They should also have good communication and social skills to be successful in this program.

Admissions Requirements

To review admissions program requirements and application processing dates visit the programs website at:

<http://madisoncollege.edu/program-info/food-service-production>.

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2014-2015 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

Starting fall 2015, this program will transition to the Culinary Production Specialist (31-316-2) program. The courses below align with the new program.

		Credits	Hrs/week Hrs/week Lec-Lab
FIRST YEAR			
First Semester			
10-316-101	Principles of Sanitation*	1	1-0
10-316-106	Food Theory*	2	2-0
10-316-108	Culinary Baking Fundamentals**	1	1-0
10-316-111	Professional Cooking 1*	4	0-8
10-316-115	Culinary Baking Lab**	2	0-4
10-316-140	Menu Planning**	1	1-0
10-809-166	Intro to Ethics: Theory & Application OR	3	3-0
20-809-276	Business Ethics	(3)	3-0
Semester Total		14	
Second Semester			
10-101-106	Accounting Fundamentals	3	3-0
10-316-121	Professional Cooking 2**	4	0-8
10-316-133	Garde Manger/Decorative Foods	2	1-2
10-316-139	Catering	2	1-2
10-316-152	Nutrition	1	1-0
10-801-195	Written Communication	3	3-0
Semester Total		15	
Third/Summer Semester			
10-316-194	Culinary Internship	2	0-8
Semester Total		2	

All culinary related (10-316-xxx) courses are offered only in semester shown. See prerequisite/co-requisite information listed in the course description for each course.

*Principles of Sanitation, Food Theory and Professional Cooking 1 must be taken concurrently; a grade of C or better is required to continue with second semester courses.

**Must be taken concurrently in the semester shown and require a grade of C or better to continue with the next semester culinary related courses.

**Baking Theory and Culinary Baking Lab must be taken concurrently.



Program Courses

10-101-106 Accounting Fundamentals

Surveys accounting principles and practices with an emphasis on interpretation, rather than preparation, of financial statements. Presents basic business terminology, cash basis and accrual basis accounting, ratio analysis, payroll, and budgeting. This class is not for students majoring in accounting.

10-316-101 Principles of Sanitation 1 credit

Covers food service sanitation principles and the role of food-service personnel in the prevention of contamination and food-borne illness. Certification through the Educational Foundation of the National Restaurant Association is a requirement for completion and can be used to apply for state certification. Prerequisite: appropriate Reading Placement test score or equivalent course.

10-316-106 Food Theory 2 credits

This course provides the opportunity for the learner to develop the knowledge, skills and understanding of food preparation in commercial kitchens that will enhance their careers. Co-requisite: 10-316-111; Prerequisite: appropriate Reading Placement test score or equivalent course.

10-316-108 Culinary Baking Fundamentals 1 credit

Provides a general understanding of basic baking principles and knowledge of the functions and appropriate usage of the major ingredients used in production baking. Different types of bakery products are classified according to their characteristics. Ingredient cost-outs are calculated. Prerequisite: appropriate Reading Placement test score or equivalent course and concurrent enrollment in Culinary Baking Lab.

10-316-111 Professional Cooking 1 4 credits

Students will learn the basics skill sets and foundation blocks of professional cooking in a practical environment. The class develops foundation skills that are used in every kitchen. Emphasis of the class is; sanitation, knife skills, heat transfer, protein cookery, working in teams, Mise en place, sauce production and starch cookery. Prerequisites or concurrent enrollment in 10-316-101 and appropriate Math Placement test score or equivalent course. Co-requisite: 10-316-106.

10-316-115 Culinary Baking Lab 2 credits

A chef who develops a basic understanding of the baking process will be better able to manage any kitchen situation, including the pastry department. Mastery is not the goal of this course, but rather to develop a foundation in baking principles through hands-on application in a modern baking lab using production equipment. Students will prepare a variety of standard bakery products to obtain knowledge about the many processes of baking. Prerequisites: 10-316-101 and 10-316-111. Co-requisite: 10-316-108.

10-316-121 Professional Cooking 2 4 credits

Further continuation of 316-119 lab with emphasis placed of the demands of running a kitchen and developing quality products and sticking to details. Students will elevate their skills; heat transfer, sanitation, critical thinking, team work, and sauce production. The last eight weeks of the class are devoted to fish and shellfish cookery. The final segment is interpreting menus from the students. Prerequisites: 10-316-101, 10-316-106 and 10-316-111.

10-316-133 Garde Manger/Decorative Foods 2 credits

This course is designed to give the students a fundamental working knowledge of the cold kitchen. Students will have hands on working experiences and be tested for their knowledge of Garde Manger using quizzes, a written midterm, final exam and one cold platter as a capstone group project. Students will be required to work on projects independently and in-group settings. Students will begin the class by learning the history of Garde Manger and produce products that are made every day on the cold side of our industry to include; ice carving, charcuterie, sandwiches, crackers, cheese and even pickles. We eat most of what we make so make it tasty! Prerequisites: 10-316-101 and 10-316-104.

10-316-139 Catering 2 credits

Provides an understanding of catering concepts through demonstration and hands-on experience by completing various food functions. The events vary from black tie multi-course dinners for the community to BBQ lunches. Prerequisites: 10-316-101 and 10-316-111.

10-316-140 Menu Planning 1 credit

This course provides the fundamentals of menu planning. Topics include menu trends, the market survey, nutrition, menu planning, foodservice menus, yield tests, standard recipes, recipe costing, menu development and design, sale history, merchandising, and equipment analysis. Emphasis is placed on developing the skills necessary to effectively create a professional menu. This course is offered in an online format only.

10-316-152 Nutrition 1 credit

Provides information about nutrition as it applies to the food service industry. The six classes of nutrients are covered as well as the latest guidelines set forth by governmental agencies and health organizations. Students learn about healthful cooking methods needed to modify and create menus for specific health concerns. The role of diet in disease prevention is also discussed.

10-316-194 Culinary Internship 2 credits

The internship program is designed to provide students with an opportunity to relate current educational material from the college classroom to practical experience under the direction of professionals in extended work assignments. Prerequisites: Principles of Sanitation, 10-316-101; Food Theory, 10-316-106 and Professional Cooking 1, 10-316-111; and corequisite (concurrent enrollment) or prerequisite Professional Cooking 2, 10-316-121.

Career Potential:

- **Cook**
Prepares various foods, such as meats, vegetables, soups and sauces, as directed by a chef or kitchen manager.
- **Assistant Cook**
Assists with the preparation of meats, starches and vegetables under the guidance of a chef or kitchen manager.
- **Deli Worker**
Slices meats and cheeses, cleans lettuce and assembles/prepares salads, cold and hot sandwiches and take-out entree items.
- **Bakery Helper**
Assists in the preparation of bakery products such as cookies, muffins and breads under the direction of the baker.
- **Short Order Cook**
Prepares fast food items such as hamburgers, french fries and grilled sandwiches.

More detailed and updated information on this program may be available at: madisoncollege.edu. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

Madison Area Technical College provides equal opportunity in education and employment.

Gender and Women's Studies Certificate Program Number: 90-809-3

Certificate

School of Arts and Sciences

Program offered at Madison Campus

For information call:

(608) 246-6246 or (800) 322-6282 Ext. 6246

About the Certificate

Gender and Women's Studies is an interdisciplinary certificate where students explore gender and gender relations through the varied lenses of art, literature, history, psychology, and sociology. While examining themes related to gender in cultural, historical, social, national, and global contexts, students will broaden their appreciation and knowledge of gender identities and equality. Topics covered will include new themes in gender research and women's studies, visual representations of the sexes, language use by the sexes, power dynamics, gender identities, women's movement politics, and generational changes. By understanding diverse life experiences, students not only gain perspectives relevant to their personal lives but also develop critical and employer-sought skills they can utilize in the 21st century workforce.

Admission Requirements

To review program admission requirements and application processing dates visit the program website at:

<http://madisoncollege.edu/program-info/gender-and-womens-studies>.

Requirements for Completion

The certificate will be awarded upon completion of the requirements with a minimum of a 2.0 grade average and no course grade lower than a C. The certificate will be awarded when completion of all requirements is verified after the semester the last course has been completed.

Certificate Outcomes

Transfer Pathways: Many courses offer a direct one-to-one transfer to University of Wisconsin schools. Direct transferability varies according to major and college of choice. Check with your advisor and transfer school for verification of qualified courses. This certificate also serves as a gateway to many related majors such as Women's Studies, Social Work, Psychology, and Sociology.

Academic and Professional Development: Interested students may choose to pursue opportunities for service learning, internships, conference presentations, and undergraduate publishing. Consult your instructor or certificate coordinators for more information.

Honors Program Participation: Interested students may choose to participate in the Honors Program, working one-on-one on an Honors Project in Gender and Women's Studies with a supervising faculty member who teaches one of the certificate courses.

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

Required Course List	Credits	Hrs/week	
		Lec	Lab
20-809-206 Introduction to Women's Studies.....	3	3	0

Additional Course List

Students must also complete at least/a minimum 12 credits from the following:

20-801-211 Gay and Lesbian Literature	3	3	0
20-801-250 Women in Literature	3	3	0
20-803-230 Women in History	3	3	0
20-803-233			
20-803-234			
20-809-201 Human Sexuality.....	3	3	0
20-809-204 Marriage and Family.....	3	3	0
20-809-210 Psychology of Men	3	3	0
20-809-234 Psychology of Women	3	3	0
20-809-253 Sociology of Gender	3	3	0
20-809-277 Couple Relationship.....	1	1	0
20-815-211 Art Survey: Women in Art	3	3	0

For successful completion of the certificate, it is necessary to complete one required course and 12 additional credits for a total of 15 credits. The required course, Introduction to Women's Studies, may be taken at any time.

Earn Credits toward an Associate's Degree: Credits may be used as electives for the Liberal Arts Associate Degree. The certificate includes courses across several disciplines, including art, English, history, psychology, and sociology.

Employment: With additional education and work experience, graduates may find employment in research, education, non-profit organizations, government, and consulting firms.

Addresses six out of eight of the Madison College Core Abilities: Core abilities are identified by Madison College as the critical skills graduates gain during the course of their studies and use as life-long learners on the job, at home, and in the community. The Gender and Women's Studies Certificate curriculum contributes to the following core abilities: communication, critical thinking, ethics, global and cultural perspectives, self-management, and social interaction.

Courses

20-809-206 Introduction to Women's Studies 3 credits

Women's status and roles in contemporary U.S. society are investigated by analyzing various disciplines and institutions such as the family, law, medicine, psychology, education, religion and the media as they impact upon the socialization process and the classification of people by gender.

20-801-211 Gay and Lesbian Literature 3 credits

This course examines work by representative authors in American literature written by and about lesbian and gay people from the 19th century to the present, including short stories, novels, drama, poetry and film. Works will be analyzed in regard to both specific and universal messages they have to offer, for non-gay and gay readers alike.

20-801-250 Women in Literature 3 credits

Women in Literature examines women as both subjects and writers of literature. Students read works from a number of genres and eras, studying ways female writers have contributed to, challenged and enlarged the literary tradition. Introduces readers to literary works by and about women and teaches analytical skills, especially feminist literary criticisms. The works are selected to represent varied perspectives in race, class and sexual preference.

20-803-230 Women in History 3 credits

Women in History introduces students to women's history, specifically the various roles played by and assigned to women in western societies and focusing on the question of how and why women's lives have changed during the past thirty centuries. Students will examine women's experiences and their images in the past by analyzing the lives of selected notable women as well as broad categories of women, e.g. prostitutes, peasant wives, noblewomen, feminists. The traditional historical periods covered include the Ancient (Greece and Rome), the Medieval (Europe) and the Modern (Europe and the U.S. since 1500).

**20-803-233 Gender and Women's History
in Cultural Representations 3 credits**

Introduction to gender and women's history from pre-history to the 19th century from a humanities perspective. We will develop a critical analysis by studying cultural representations of women and men within the social and historical context of race, class, gender, sexuality. Our analysis will be shaped by an intersectional approach, which means that gender will always be examined in interaction with race, class, sexuality and dis/ability to reveal how identities and systems of power are shaped by multiple forces. We will study a range of cultural representations ranging from literary and visual arts, to mass media, to material, to political to explore how gendered representations produce social, political and personal implications.

**20-803-234 Gender and Women's History
in Global Perspectives 3 credits**

Introduction to gender and women's history from the 19th century to the present with a global perspective. Students will be asked to think critically about the power relations that affect the lives of diverse women in the U.S.-diverse in terms of race, class, ability, sexuality and other markers of power-and will be asked to contemplate the positions of diverse women from around the world.

20-809-201 Human Sexuality 3 credits

Human Sexuality covers how intimate relationships develop, how to maintain warmth and closeness in relationships and how sexuality is expressed throughout the life cycle. Also covers practical information regarding sexually transmitted diseases, contraception and pregnancy.

20-809-204 Marriage and Family 3 credits

Examines the changes in the structure, function and definition of family from a social science perspective. The social, historical, cultural and economic sources of these changes are explored along with a critical examination of what these changes have meant for children, women, men, and society as a whole, especially in recent decades. Contemporary issues and debates are explored, with an emphasis on research evidence. The goal of the course is for students to evaluate their assumptions about marriage and family as they become more informed by social science research, and, on a practical level gain knowledge and insight for navigating the challenges of intimate relationships and family life.

20-809-210 Psychology of Men 3 credits

Psychology of Men examines and analyzes ways biology, culture and society shape identity and life experiences of the American male. Included in the course are historical views, socialization, manliness, competitiveness and sports, violence and war, work and success, sexuality, health, relations with other men, women and children, and alternatives for men.

20-809-234 Psychology of Women 3 credits

Review psychological theories and research on women and gender, focusing on uniquely female experiences throughout the life cycle. We will explore the diversity of women by examining the impact of social factors such as race, ethnicity, class, and sexual orientation as they relate to sexism, gender roles, sex differences, language, emotion, motivation, relationships, sexuality, employment, victimization, parenting, and health.

20-809-253 Sociology of Gender 3 credits

Sociologically examines the importance and power of gender, particularly as it pertains to the status of women and men in society. Students explore the social construction of gender and its impact on identity, roles, relationships, and life experiences. Attention is given to the gender socialization process as well as the ways in which gender impacts romantic and family relationships, division of labor, parenthood, sexuality, crime and violence, media, employment, health, education, religion, political participation, and power. Throughout the course, students reflect upon past, present, and future gender patterns, considering the cultural reinforcement of gender norms as well as the ways in which individuals and institutions challenge them.

20-809-277 Couple Relationships 1 credit

Introduces students to empirical research findings on relationship and marriage success and failure as well as to one of the most nationally recognized skills-based prevention programs for couples. Students will learn to distinguish the patterns that erode as well as protect relationships; students will gain skills and strategies that research has identified for strengthening intimate relationships.

20-815-211 Art Survey: Women in Art 3 credits

This course will present a broad survey of selected outstanding women artists from the 12th to the 20th century. The focus is on painting, sculpture and mixed media from the Medieval Era to the Modern Era, considering a variety of individual European and American artists and their works.

More detailed and updated information on this program may be available at:

madisoncollege.edu. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

Madison Area Technical College provides equal opportunity in education and employment.

Rev. 04/15

General Accountancy

Program Number: 31-101-3

One-Year Technical Diploma

Accounting and Finance Program Cluster

School of Business and Applied Arts

Program offered at Madison Truax Campus

For information call:
(608) 246-6003 or (800) 322-6282 Ext. 6003

About the Program

The General Accountancy Technical Diploma Program focuses on gaining the skills necessary for employment in the accounting field. This program includes all the technical accounting courses within the Accounting Associates Degree program but none of the general education courses. All course work can be applied towards the Associates degree should you choose to continue. Upon completion, you will receive a General Accountancy Diploma and will only need to complete the required general education coursework for your Accounting Associates Degree.

Notes:

In order to complete the program as outlined, a minimum placement COMPASS math score of algebra level 30 is needed in order to be ready/placed into Math of Finance.

Classes are available in a mix of traditional classroom, online or hybrid formats that provides the scheduling flexibility.

The program is structured in a manner that allows a student to achieve these skills while attending school on a part-time basis.

Admissions Requirements

To review admissions program requirements and application processing dates visit the programs website at:

<http://madisoncollege.edu/program-info/general-accountancy>.

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

First Semester	Credits	Hrs/week	
		Lec	Lab
10-101-111 Accounting 1-Principles.....	4	4	0
10-101-139 QuickBooks-Beginning.....	1	0.5	1
10-103-133 Excel-Beginning	1	0.25	1.5
10-804-144 Math of Finance	3		3-0
Second Semester			
10-101-113 Accounting 2-Principles.....	4	4	0
10-101-123 Tax 1	4	4	0
10-101-141 QuickBooks-Intermediate.....	1	0.5	1
10-114-130 Personal Finance	3		3-0
Third Semester			
10-101-121 Accounting 3-Intermediate	4	4	0
10-101-125 Cost Management.....	4	4	0
10-101-138 Accounting and Payroll Systems	3		1-4
Fourth Semester			
10-101-122 Accounting 4-Intermediate	4	4	0
10-101-137 Computerized Accounting Applications	2	2	0
10-101-142 Accounting Capstone	3		3-0
Semester Total	9		
Program Total	41		

Graduation Requirement

A minimum grade of C is required for all courses in order to graduate.

Note: This diploma cannot be obtained after receiving the associate degree in Accounting.



Program Courses

10-101-111 Accounting 1–Principles 4 credits
 Introduction to the field of accounting. The accounting cycle of journalizing transactions, posting, adjusting and closing entries, as well as the preparation of accounting statements is emphasized for service industries and merchandising concerns. Details of accounting for cash and receivables are studied. An introduction to a computerized accounting system is also included. Prerequisite: Completion of or concurrent enrollment in 10-804-144.

10-101-113 Accounting 2–Principles 4 credits
 Procedures of accounting for partnerships and corporations. Additional topics include fixed assets, current liabilities and payroll, long-term liabilities, investments, statement of cash flows, analysis of financial statements, and an introduction to cost accounting. Prerequisite: grade of C or better in 10-101-111; and prerequisite or co-requisite: 10-804-144.

10-101-121 Accounting 3–Intermediate 4 credits
 This intermediate-level course builds on the material covered in the Accounting Principles-1 and -2 courses. It expands on earlier coverage of both the income statement and balance sheet. Revenue recognition concepts and methods are covered. Emphasis is also placed on each classification of asset. This emphasis includes in-depth coverage of cash, receivables and inventory. Coverage also includes operational asset acquisition, depreciation, and disposal. Present value concepts are studied and applied. Excel spreadsheet software is used in this course. Prerequisites: grade of C or better in 10-101-113, 10-103-133, and 10-804-144.

10-101-122 Accounting 4–Intermediate 4 credits
 Emphasizes analysis of financial statements. Generally accepted accounting principles are applied in the preparation, analysis and interpretation of financial statements. Particular emphasis is applied to valuation of current and long-term liabilities and stockholders' equity, and earnings per share. Special topics included are deferred income taxes, long-term investments, and leases. Further consideration is applied to errors and their correction, and statements of cash flow. Comparison and analysis is also made between GAAP and international standards (IFRS). Prerequisite: grade of C or better in 10-101-121.

10-101-123 Tax 1 4 credits
 Introduction to federal and state income tax laws with an emphasis on personal taxes. These areas are included: filing status, personal exemptions and standard deductions, income recognition, itemized deductions, credits, depreciation, gains and losses, and sole proprietorship taxation. The course also requires the preparation of a series of individual income tax returns.

10-101-125 Cost Management 4 credits
 This course presents typical accounting methods and processes that are used for collecting information for effective decision making for both manufacturing and service environments. Areas emphasized include job order costing, process costing, standard costing, activity based costing, budgeting, cost allocations, cost-volume-profit analysis and capital investment analysis. Students will be required to prepare and analyze various management reports. Prerequisites: grade of C or better in 10-101-113 and 10-103-133.

10-101-137 Computerized Accounting Applications 2 credits
 Provides practical experience developing and applying flexible solutions to accounting problems using Excel. Spreadsheet tools that will be utilized include financial, lookup, and database functions; logical statements (IF); goal seek; pivot tables; and macros. Prerequisites: grade of a C or better in 10-101-113 and 10-103-133.

10-101-138 Accounting and Payroll Systems 3 credits
 A survey of accounting and payroll systems covering procedures and methods to capture data and report financial information. Specific topics include flowcharting, internal controls, and transaction work in both manual and computerized environments. Special emphasis is also placed on payroll calculations and the processing of payroll information. Lab intensive course involving hands-on experience with Excel spreadsheet software and accounting software. Prerequisite: 10-101-113.

10-101-139 QuickBooks-Beginning 1 credit
 Introduction to QuickBooks-Beginning small business accounting software. Students become familiar with QuickBooks features and learn to use the software to set up a new company, manage business revenue and expenses, process payroll, reconcile bank accounts, track inventory and create useful reports. A tutorial approach will be followed using a textbook and practice problem templates. Prerequisites:
 (1) Course work or experience in Microsoft Windows and using email is required.
 (2) Accounting program students should take this course the second half of the semester they take 10-101-111 Accounting 1-Principles (or they may take it in a semester after they have completed Accounting-Principles). (Non-program students working in the accounting field or with small business management experience should obtain permission from the instructor to register, and take the course in a section during the first half of a semester.

10-101-141 QuickBooks-Intermediate 1 credit
 QuickBooks-Intermediate is the next course offering after QuickBooks-Beginning which provides student users with in-depth material on advanced topics. Topics will include inventory; Sales Tax; Time Tracking; Payroll Setup and Processing; Estimates and Sales Orders; Budgeting, Forecasting & Business Planning; and Adjustments and Year-End Procedures. A tutorial approach will be followed using a textbook and practice problem company files. Prerequisite: 10-101-139.

10-101-142 Accounting Capstone 3 credits
 This course will provide students an opportunity to demonstrate their attainment of program outcomes through the completion of a project. This project accounts for a small business through the accounting cycle, review of internal controls, and financial analysis. Prerequisite: 10-101-121, 10-101-123, 10-101-138 and 10-101-139 or 10-101-137.

10-114-130 Personal Finance 3 credits
 This introductory course considers finance from the point of view of the individual or family unit. Topics include budgets, insurance, housing, borrowing, saving, investing and estate planning. Students complete personal finance projects applying the material learned.

10-103-133 Excel–Beginning 1 credit
 Introduction to Excel spreadsheet software. Create, edit, save, format, print, perform calculations, copy/move text and formulas, and create charts. working knowledge of Windows presumed.

10-804-144 Math of Finance 3 credits
 This course takes an algebraic approach to solving financial problems. Topics include personal finance, mathematics of retailing, mathematics of banking, and statistical applications. Major emphasis is placed on solving problems involving the time value of money by using a financial calculator. The material in this course develops a sound base for subsequent courses by using an analytical approach to problem solving. Prerequisite: appropriate score on COMPASS test, Elementary Algebra with Applications, 10-834-110, or CAM Math Topics in Elementary Algebra, 10-834-111.

Career Potential:

- Accounts Payable/Receivable Clerk
- Bookkeeper
- Payroll Clerk
- Cost Accountant
- Public Accountant
- Staff Accountant
- Tax Accountant
- Account Manager
- Account Specialist
- Payroll Accountant

With additional education and/or work experience, graduates may find employment as:

- Auditor
- Certified Public Accountant
- Comptroller
- Treasurer
- Trust Officer

More detailed and updated information on this program may be available at: madisoncollege.edu. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

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Rev. 07/15

Graphic Design & Illustration

Program Number: 10-201-1

Associate in Applied Arts Degree

Applied Arts Program Cluster

School of Business and Applied Arts

Program offered at Madison Campuses

For information call:

(608) 246-6003 or (800) 322-6282 Ext. 6003

About the Program

This program prepares students who are interested in a professional career of combining art and technology to communicate ideas in a variety of media. The major career opportunities are graphic designer, production artist, or illustrator. Jobs are in advertising agencies, publishing companies, art studios, and advertising and art departments within companies. Graduates can also work as freelance artists. Some aptitudes necessary for success include aesthetic appreciation and creative imagination, visual acuity, attentiveness to detail, a willingness to complete tasks according to technical requirements, and an ability to work under pressure to meet deadlines. Previous courses that may be helpful include art and typewriting or computer skills. Students should have good command of the English language, having earned B grades in English courses.

Admissions Requirements

To review admissions program requirements and application processing dates visit the programs website at:

<http://madisoncollege.edu/program-info/graphic-design>.

Program Courses

10-201-102 Design Fundamentals 3 credits
Students learn fundamentals of two-dimensional visual organization and problem-solving strategies for advertising layout, publication design, typographic and graphic design, and illustration.

10-201-103 Drawing Fundamentals 3 credits
An introductory drawing class emphasizing sound craftsmanship and a study of basic freehand drawing skills. Includes the study of perspective, proportion, and light and shade. Also covers the construction of solid forms.

10-201-106 Illustration 3 credits
Concentrates on creating reproducible line and continuous tone art in the areas of product, editorial and institutional illustration, in a variety of media both traditional and digital. Students are encouraged to develop problem-solving techniques in both technical and conceptual areas. Prerequisites: 10-201-112, 10-201-136, 10-203-130, 10-201-152 and 10-201-181.

10-201-112 Color Media 3 credits
An understanding of color is achieved through the study and application of color systems and theory. A wide range of tools, techniques and media are used on a variety of assignments. Prerequisites: 10-201-102, 10-201-103, 10-201-136, and 10-201-181.

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

FIRST YEAR

First Semester		Credits	Hrs/week Lec-Lab
10-201-102	Design Fundamentals OR	3	0-6
20-815-201	<i>Basic Design</i>	(3)	0-6
10-201-103	Drawing Fundamentals OR	3	0-6
20-815-205	<i>Drawing Fundamentals</i>	(3)	0-6
10-201-136	Concept Development.....	3	0-6
10-201-181	Introduction to Computer Graphics	3	0-6
10-801-195	Written Communication	3	3-0
10-804-123	<u>Math with Business Applications</u>	3	3-0
Semester Total		18	

Second Semester

10-201-112	Color Media	3	0-6
10-201-151	Typographic Design.....	3	0-6
10-201-152	Drawing for Illustration.....	3	0-6
10-201-182	Applied Computer Graphics	3	0-6
10-203-130	Introduction to Digital Photography	2	0-4
10-809-166	Intro to Ethics: Theory and Application OR	3	3-0
20-809-276	<u>Business Ethics*</u>	(3)	3-0
Semester Total		17	

SECOND YEAR

First Semester

10-201-106	Illustration	3	0-6
10-201-121	Graphic Design	3	0-6
10-201-128	Print and Design Production.....	3	0-6
10-201-177	Web Page Design.....	3	0-6
10-801-196	Oral/Interpersonal Communication.....	3	3-0
10-801-197	Technical Reporting OR	3	3-0
20-815-200	<i>Intro to Art History</i> OR	(3)	3-0
20-815-210	<u>Art History: Modern Era</u> OR	(3)	3-0
Semester Total		18	

Second Semester

10-201-153	Integrated Design	3	0-6
10-201-154	Design Project Management	3	0-6
10-201-162	Portfolio Preparation.....	2	0-4
10-201-184	Electronic Page Layout.....	2	0-4
10-809-197	Contemporary American Society.....	3	3-0
10-809-199	Psychology of Human Relations	3	3-0
	Elective	1	E
Semester Total		17	

Note: Students are placed in English or mathematics courses based on their scores on the COMPASS or ASSET test or on completion of the appropriate prerequisite/s.

* Other course options are available. See advising report or program advisor for information.



Program Courses (continued)

10-201-121 Graphic Design 3 credits
Develop design concepts as they relate to the professional design field. Assignments include the development of logos, corporate identity, symbols, icons, and page designs. Prerequisites: 10-201-112, 10-201-151, 10-201-136, and 10-201-182.

10-201-128 Print and Design Production 3 credits
Practical training in layout and production of art. In a variety of increasingly complicated assignments, the student learns to solve realistic print design problems from rough layout through print-ready page production. Prerequisites: 10-201-112, 10-201-151, 10-201-136, and 10-201-182.

10-201-136 Concept Development 3 credits
Introduces exercises and processes to foster creativity and the development of unique ideas for graphic design and advertising applications. Emphasis is placed on improving research, brainstorming, writing, speaking and critical thinking skills. Working individually, in teams and in groups, students will come up with unexpected solutions to realistic and contemporary industry problems. Visual presentations cover a wide range of levels of finish and incorporate traditional and digital media and rendering techniques.

10-201-151 Typographic Design 3 credits
This course will explore the structure and form of type used in contemporary graphic design, the history of type, development, and terminology. Projects will incorporate both hand rendering and applied computer applications using Adobe InDesign, Illustrator and Photoshop. Prerequisites: 10-201-102, 10-201-103, 10-201-136, and 10-201-181.

10-201-152 Drawing for Illustration 3 credits
The focus of this course is on black and white illustration in a variety of media. Topics will cover creation of reproducible line and continuous tone art in the areas of product, editorial, and institutional illustration. Traditional figure-drawing techniques and approaches with a concern for illustrative usage and figure indication for design and layout situations will be incorporated. Prerequisites: 10-201-102, 10-201-103, 10-201-136, and 10-201-181.

10-201-153 Integrated Design 3 credits
Visual literacy and effective translation of complex information into informative graphics and illustration will be emphasized. Projects may involve television, environmental graphics, web graphics, as well as print. Prerequisites: 10-201-121, 10-201-128, 10-201-177, and 10-203-130.

10-201-154 Design Project Management 3 credits
Through assigned projects students will explore marketing, research, advertising concepts, resources, budgets, and timelines. Activities related to assigned projects may include tours, demonstrations, handouts, speakers, and independent research. Both traditional and electronic methods are explored. Techniques for successful project management, how to optimize your time and resources, and billable hours will be explored. Prerequisites: 10-201-121, 10-201-128, and 10-201-177, and 10-203-130.

10-201-162 Portfolio Preparation 2 credits
Students work to prepare a portfolio of their work for prospective employers. Students are supervised and assisted in choice and number of samples, and portfolio layout. Lectures are given on job interviewing and job markets. Faculty approval of a finished portfolio and internet presence is required for graduation. Prerequisites: 10-201-121, 10-201-128, 10-201-106, and 10-201-177. Students must be in their final semester of the Graphic Design Program.

10-201-177 Web Page Design 3 credits
Students will create several web pages, increasing in complexity. This course teaches best practices for coding html and css, typography, graphics, animation, usability and accessibility. Students will be introduced to uploading files, server space and browser compatibility. Web page layout software is introduced. Exploration and analysis of existing sites on the web will also be a focus, and source for information. Prerequisite: 10-201-181.

10-201-181 Introduction to Computer Graphics 3 credits
Introductory course in electronic layout and design, illustration, and photo manipulation, using the following Adobe Creative Suite Software programs: InDesign, Illustrator, Photoshop, Bridge, and Acrobat.

10-201-182 Applied Computer Graphics 3 credits
The students enhance their knowledge and skill in the use of design, illustration and page layout software (using Adobe Creative Suite) through the creation of a variety of design and illustration projects. Emphasis on original, strong images and type integration, as well as preparing files for press. Prerequisites: 10-201-102, 10-201-103, 10-201-136, and 10-201-181.

10-201-184 Electronic Page Layout 2 credits
Emphasizes design and preparation of multiple-page publications incorporating text and graphic images using sophisticated page layout software (InDesign) on the Macintosh computer. Includes output of high-resolution printed pieces, and creation of interactive documents appropriate for viewing online. Prerequisites: 10-201-121, 10-201-128, and 10-201-177.

10-203-130 Intro to Digital Photography 2 credits
Provides an introduction to the photographic process through the use of digital cameras to produce images for presentations, the World Wide Web, and electronic publication. Covers basic principles of effective composition, light, exposure and control of motion and focus. Basics of portraiture and product photography are studied in a studio environment. Participants provide their own digital camera. Prerequisite: 10-201-181.

Recommended Electives

10-201-117	Illustrative Figure Drawing	3 credits
10-201-144	Principles of Letterpress	3 credits
10-201-145	Introduction to Screen Printing	2 credits
10-201-146	Advanced Screen Printing Workshop	2 credits
10-201-147	Advanced Letterpress Workshop	2 credits
10-201-155	WordPress for Designers**	2 credits
10-201-169	Business of Graphic Design and Illustration	2 credits
10-201-183	Electronic Illustration	2 credits
10-201-195	Advanced Web Page Design**	2 credits
10-201-198	Social Media/Web Design Strategies**	3 credits
10-201-178	Web Animation and Illustration**	2 credits
10-201-189	Web Design Project Management**	3 credits
10-206-190	Advanced Interactive Media**	2 credits
10-206-129	Motion Graphics	3 credits
20-815-200	Introduction to Art History*	3 credits
20-815-210	Art History: Modern Era*	3 credits
20-815-211	Art Survey: Women in Art*	3 credits

*May be substituted for Technical Reporting (10-801-197)

**Web Page Design Certificate (90-201-1) course

Career Potential:

- Art/Creative Direction
- Web Page Design
- Graphic Design
- Illustration
- Package Design
- Product Design
- Advertising
- Publication Design
- Print Production
- Information Design
- Freelance/Entrepreneur

More detailed and updated information on this program may be available at: madisoncollege.edu. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

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Rev. 04/15

Healthcare Administrative and Insurance

Program Number: 90-509-2

Certificate

Health-Related Professions Program Cluster

School of Health Education

Program offered at Madison Campuses

For information call:

(608) 246-6065 or (800) 322-6282 Ext. 6065

About the Program

The Healthcare Administrative & Insurance certificate provides students with in-depth short term training that prepares students to enter the healthcare field in a variety of administrative office positions. The certificate prepares students to learn medical language used in healthcare. A focus on the human body in health and disease prepares students to understand patient and healthcare industry treatment options. Students also explore the US healthcare system and the insurance industry and how the two sectors work together in providing care. Healthcare privacy laws are discussed along with an introduction to electronic health records. All of the course work is designed to prepare students to communicate with healthcare professionals, work in a healthcare office, input patient information, perform insurance billing tasks and communicate with patients. The certificate courses work explores the following topics:

- Healthcare introduction
- Medical terminology
- Introduction to electronic medical health records
- How the body functions in health and disease
- Insurance in healthcare delivery and language
- Medical finance

Admission Requirements

To review program admission program requirements and application processing dates visit the programs website at: <http://madisoncollege.edu/program-info/healthcare-administrative-insurance-certificate>.

Career Potential:

- Coding Assistant
- General Office
- Program Assistant
- Help Desk Representative
- Records Technician
- Medical Scheduling
- Health Occupation Support Staff

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

First Semester		Credits	Hrs/week Lec-Lab
10-501-101	Medical Terminology**	3	3-0
31-509-302	Human Body in Health and Disease**	3	5-0
31-509-307	Medical Office Insurance and Finance	2	3-0
Semester Total		8	

Courses

10-501-101 Medical Terminology 3 credits

Focuses on the component parts of medical terms: prefixes, suffixes and word roots. Students practice formation, analysis and reconstruction of terms. Emphasis is on spelling, definition and pronunciation. Introduction to operative, diagnostic, therapeutic and symptomatic terminology of all body systems, as well as systemic and surgical terminology, is included. Prerequisite: COMPASS scores of Reading 80 & Writing 46-99 or comparable equivalent course courses.

31-509-302 Human Body in Health & Disease 3 credits

Focuses on diseases that are frequently first diagnosed and treated in the medical office setting. Students learn to recognize the causes, signs and symptoms of diseases of the major body systems as well as the diagnostic procedures, usual treatment, prognosis and prevention of common diseases. Prerequisite or Co-requisite: 10-501-101.

31-509-307 Medical Office Insurance and Finance 2 credits

Introduces medical assistant students to health insurance and finance in the medical office. Students perform bookkeeping procedures, apply managed care guidelines and complete insurance claim forms. Students use medical coding and managed care terminology to perform insurance-related duties. Prerequisites: admitted to the program, 10-501-101, 31-509-302, and computer courses.

More detailed and updated information on this program may be available at: madisoncollege.edu. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

Madison Area Technical College provides equal opportunity in education and employment.

Rev. 11/15



Healthcare Reception Pathway Certificate

Program Number: 90-106-4

Certificate

Business Technology Program Cluster

School of Business and Applied Arts

Certificate courses are offered at Madison; most courses are also offered at the Fort Atkinson, Watertown, and Portage campuses and online.

For information call:

(608) 246-6003 or (800) 322-6282 Ext. 6003

About the Certificate

Clerical jobs are among the top five occupations for projected growth nationally. Madison College has developed this certificate to help you get hired, promoted or to update your skills by providing basic medical reception skills used in today's modern medical offices. Full- and part-time positions are available in small and large healthcare organizations throughout Wisconsin and the United States. Typical working hours in this occupation are weekday business hours, generally 8:00 a.m. to 5:00 p.m., with some variation.

The skills obtained in the Healthcare Reception Pathway Certificate may be applied to the Medical Administrative Specialist Associate in Applied Science degree program. In addition, many of the certificate credits may be applied to other programs at Madison College.

This certificate is available to those working full time seeking skills to change careers. Current Madison College students may complete this certificate in conjunction with their existing course work. Courses are available both online and in the classroom.

Students who successfully complete this certificate typically earn \$9.50 to \$13.00 per hour based on their experience and other job skills.

Admission Requirements

To review program admission requirements and application processing dates, visit the program's website at:

<http://madisoncollege.edu/program-info/basic-medical-reception-skills-certificate>.

Requirements for Completion

First, students must apply to the certificate in order to earn the certificate.

The certificate will be awarded upon verification of completion of the requirements with a minimum of a 2.0 grade average and no course grade lower than a C, after the semester the last course has been completed.

No more than 50% of the certificate credits may be through credit for prior learning/advanced standing.

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

Fall Semester		Credits	Hrs/week Lec-Lab
10-106-101	Keyboarding Introduction	1	0.25-1.5
10-106-139	Keyboard Skillbuilding**	1	0.25-1.5
10-103-123	Windows 7	1	0.25-1.5
10-103-137	Word-Beginning	1	0.25-1.5
10-103-136	Word-Intermediate**	1	0.25-1.5
10-103-165	Outlook	1	0.25-1.5
10-106-178	Medical Language for the Business Professional 1	2	1-2
Total		8	

Spring Semester		Credits	Hrs/week Lec-Lab
10-103-133	Excel-Beginning.....	1	0.25-1.5
10-103-139	Excel-Intermediate**.....	1	0.25-1.5
10-106-164	Customer Contact Skills.....	1	0.25-1.5
10-106-165	Medical Administrative Procedures* **	3	1-4
10-106-179	Medical Language for the Business Professional 2**	2	1-2
Total		8	

Notes:

*Course offered in spring semester only

**Courses have pre-requisites

Courses are listed in suggested sequence

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Courses

10-103-123 Windows 7 1 credit

Introduces the Windows 7 operating system: work with common elements (windows, menus, toolbars, panes, dialog boxes and Help), use accessory programs, manage files/folders, customize using the Control Panel and maintain the computer.

10-103-133 Excel-Beginning 1 credit

Introduction to Excel spreadsheet software. Create, edit, save, format, print, perform calculations, copy/move text and formulas, create charts, create complex formulas and expand use of functions. Prerequisite: competency in Windows operating system.

10-103-136 Word-Intermediate 1 credit

Continuation of Microsoft Word Beginning course covering intermediate-level word processing skills. Utilize desktop publishing features of Word; insert drop caps, symbols, characters, and clip art; format text in columns; create and edit WordArt; edit photos; add page borders; create, edit, and work with templates, themes, and styles; create a table of contents; merge Word documents; create mailing labels and a phone directory; convert tables to text and text to tables; create multilevel lists; track changes in a document; compare and combine documents; embed and modify an Excel worksheet; link an Excel chart; share files on SkyDrive; insert and edit hyperlinks; save a Word file as a web page. Prerequisite: Word-Beginning, 10-103-137, or equivalent.

10-103-137 Word-Beginning 1 credit

Introduction to Microsoft's word processing software. Create, edit, save, format and print basic documents; cut/copy/paste and find/replace text; apply font styles and effects; add bullets and numbering; work with tabs and indents; align text; apply borders and shading; use wizards and templates to produce documents; insert headers/footers; apply different formatting to document sections; create columns; insert Clip Art. Create and format tables, modify rows and columns, perform calculations, sort table data, customize tables. Prerequisite: competency in Windows operating system.

10-103-139 Excel-Intermediate 1 credit

Create Excel Tables, PivotTables and PivotCharts, manage multiple worksheets and workbooks, use advanced functions and apply conditional formatting, and develop an Excel application with data validation, sheet protection, and Macros. Working competency in Windows and Beginning Excel presumed.

10-103-165 MS Outlook 1 credit

Use Microsoft's messaging and personal information management program. Communicate by email; schedule appointments, meetings and events; manage the Inbox, contact lists, tasks and notes; track and archive messages; configure and customize Outlook; record journal entries; manage Outlook components; integrate Outlook with other Office programs..

10-106-101 Keyboarding Introduction 1 credit

Learn computer keyboarding (alphabetic and numeric keypad) using proper technique; develop speed and accuracy.

10-106-139 Keyboard Skillbuilding 1 credit

Refine keyboarding technique, increase speed, and improve accuracy through individualized practice. The student must be able to touch type, which is defined as using the correct key reaches and not looking at the keys while typing, at a minimum rate of 25 words per minute. Equipment requirement: Access to a PC Windows platform computer. Coursework cannot be completed using a Macintosh computer. Prerequisite: 10-106-101; or student must be able to touch type, which is defined as using the correct key reaches and not looking at the keys while typing, at a minimum rate of 25 words per minute.

10-106-164 Customer Contact Skills 1 credit

Identify internal/external customers, develop verbal, nonverbal, and listening communication skills, develop problem-solving techniques, and ways of adding value to a customer interaction. Examine how technology impacts customer service, examine the impact on service breakdowns, and examine campaigns for customer loyalty.

10-106-165 Medical Administrative Procedures 3 credits

This class is designed to emphasize administrative procedures in the electronic medical office environment. Competencies include: Communication, reception, appointment scheduling, records management, telephone procedures, daily transactions, medical billing and collecting, insurance and coding basics, composing routine business correspondence, keeping an inventory of supplies, meeting management, and travel itineraries. Pre/co-requisite: 10-103-137 (or 10-106-107); 10-106-178; AND sufficient scores on the COMPASS test to allow for enrollment in Written Communication, 10-801-195; or completion of or concurrent enrollment in Written Communication or English 1.

10-106-178 Medical Language for the Business Professional 1 2 credits

This course is designed to give the beginning business student an insight into medical language. Students will explore how medical terms are formed, become familiar with the meaning of many word roots, prefixes, and suffixes, and spell, define, and pronounce many medical terms by understanding word components. Students will also exhibit mastery in the use of medical dictionaries and reference materials. Fundamentals will be discussed as they relate to evaluation of health practices by body system and by the body as a whole.

10-106-179 Medical Language for the Business Professional 1 2 credits

This course is a continuation of Medical Language for the Business Professional 1 and is designed to give the business student continued insight into medical language. Students will continue exploration of medical terms, become familiar with the meaning of many word roots, prefixes, and suffixes, and spell, define, and pronounce many medical terms by understanding word components. Students will also exhibit mastery in the use of medical dictionaries and reference materials. Fundamentals will be discussed as they relate to evaluation of health practices by body system and by the body as a whole. Prerequisite: Medical Language for the Business Professional 1, 10-106178.

Career Potential:

- Medical Receptionist
- Medical Appointment Scheduler
- Department/Clinic Assistant-Associate
- Medical Customer Service Representative

With advanced training, students may find employment as:

- Medical Administrative Specialist
- Medical Transcriptionist
- Medical Billing Specialist
- Medical Word Processing Operator
- Department/Clinic Assistant – Objective, Senior
- Health Unit Coordinator
- Medical Coding Specialist

More detailed and updated information on this program may be available at: madisocollege.edu. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

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Rev. 04/15

Hospitality Management

Program Number: 10-109-2

Associate in Applied Science Degree

Hospitality Program Cluster

School of Business and Applied Arts

Program offered at Madison Campuses

For information call:

(608) 246-6003 or (800) 322-6282 Ext. 6003

About the Program

The hospitality and tourism industry is the fastest growing industry in the world and the second largest industry in Wisconsin. One out of every 10 workers in Wisconsin is employed in the hospitality and tourism industry. Career opportunities are limitless; however, the expectation for greatest growth is in management and supervisory positions.

The Hospitality Management program is designed to develop competencies in leadership, problem solving, communications, cost control, and motivation, team-building, human relations and life skills as they apply to the hospitality and tourism industry.

Through a combination of classroom and on-the-job experiences, the program develops highly skilled entry-level employees to perform in any area of the hospitality and tourism industry. Major components of the industry include: lodging, food service, resort operation, sports facility operation, tourism marketing, special events and festivals, and meetings and conventions.

Hospitality Management program credits transfer to UW–Stout towards the Hospitality and Tourism Management degree.

Graduates of this program typically earn \$28,500 to \$35,000.

Admissions Requirements

To review admissions program requirements and application processing dates visit the programs website at:

<http://madisoncollege.edu/program-info/hospitality-management>.

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

		Credits	Hrs/week Lec-Lab
First Semester			
10-109-101	Introduction to Hotel & Restaurant Management	3	3-0
10-104-102	Marketing Principles	3	3-0
10-801-195	Written Communication	3	3-0
10-804-123	Math with Business Applications	3	3-0
10-809-199	Psychology of Human Relations	3	3-0
	Semester Total	15	
Second Semester			
10-101-106	Accounting Fundamentals	3	3-0
10-104-114	Social Media Principles	3	3-0
10-109-102	Fundamentals of Meeting Management	3	3-0
10-109-136	Hospitality Law	3	3-0
20-810-205	Interpersonal/Small Group Communication OR	3	3-0
10-801-196	Oral/Interpersonal Communication	(3)	(3-0)
10-809-197	Contemporary American Society	3	3-0
	Semester Total	18	
Third Semester (summer)			
10-109-157	Hospitality Internship* (Field Experience)	2	0-8
	Semester Total	2	
Fourth Semester			
10-109-119	Event Professional Best Practices	3	3-0
10-109-125	Hospitality Leadership	3	3-0
10-116-145	Introduction to Human Resources	3	3-0
10-316-101	Principles of Sanitation*	1	1-0
10-809-195	Economics	3	3-0
	Elective	3	E
	Semester Total	16	
Fifth Semester			
10-109-131	Rooms Division Operations*	3	3-0
10-109-134	Hotel/Restaurant Cost Control	3	3-0
10-145-106	Small Business Marketing*	3	3-0
10-809-166	Intro to Ethics: Theory & App OR	3	3-0
20-809-276	Business Ethics**	(3)	3-0
	Elective	3	E
	Semester Total	15	

*Courses offered only in semester shown.

** Other course options are available. See program advisor for information.



Program Courses

10-101-106 Accounting Fundamentals 3 credits

Surveys accounting principles and practices with an emphasis on interpretation, rather than preparation, of financial statements. Presents basic business terminology, cash basis and accrual basis accounting, ratio analysis, payroll, and budgeting. This class is not for students majoring in accounting.

10-104-114 Social Media Principles 3 credits

Social Media has transformed Advertising from a long-term Mass medium to a one-to-one communication utilizing almost instant feedback. How businesses are using Social Media as advertising tools as well as how to create and deploy a Social Media Campaign will be the main focus of this class. Additionally, the history and development of Social Medias such as Facebook, YouTube, Twitter and LinkedIn will be explored as well as the many ethical and potential legal concerns that have arisen over these new forms of communication. Finally, the concept of Viral Marketing will be examined and how it allows a Social Message to explode a message to millions of users in a brief time.

10-109-101 Introduction to Hotel & Restaurant Management 3 credits

Introduces new students to the broad spectrum of the leisure services industry. Typical career areas include food service, lodging, travel/tourism, and recreation. The course explores educational options and program career opportunities as well as historical and operational perspectives of the career areas mentioned.

10-109-102 Fundamentals of Meeting Management 3 credits

Students explore the core issues of meeting planning from the fundamentals to the new trends shaping the meetings industry. Development of meeting timelines, checklists and request for proposal are introduced. Further focus includes the process meeting planners must use in site selections, the value of meeting objectives and format, and attendee expectations.

10-109-119 Event Professional Best Practices 3 credits

This course focuses on the core knowledge and skills that are crucial in the meetings and events industry. We will examine the factors involved with job success, including professional etiquette, ethics, communication and listening skills. Learn the foundation of customer service by implementing industry standards and expectations. Students will create a professional portfolio, as well as learn about proactive job search techniques, professional networking and interview skills. Prerequisite: Fundamentals of Meeting Management, 10-109-102. Third semester program student or consent of instructor.

10-109-125 Hospitality Leadership 3 credits

Introduces theories, principles and practical application of management skills in the hospitality and tourism industry. Students analyze their current skills and develop a personal management philosophy appropriate to the service industry.

10-109-129 Tourism Marketing 3 credits

Focuses on the application of sound marketing practices and tools to develop businesses in food service, lodging, recreation, tourism, and destination management.

10-109-131 Rooms Division Operations 3 credits

Investigates the organization, performance and evaluation of the rooms division of a lodging facility (front desk, reservations, housekeeping, and telephone systems) as essential components of operational success and guest satisfaction.

10-109-134 Hotel/Restaurant Cost Control 3 credits

Presents concepts and techniques of cost control in the hospitality industry. Students select and apply methods, procedures and systems to control costs, and analyze the application, theory and concepts. Students forecast and prepare budgets and income statements, and complete a break-even analysis.

10-109-136 Hospitality Law 3 credits

A preventive approach to the laws and liabilities, as well as responsibilities of owners/operators of hotels, restaurants and travel facilities. Reviews precedent-setting court decisions, legal fundamentals, negligence doctrines, civil rights issues and the relationship between providers and the guests/clients.

10-109-157 Hospitality Internship (Field Experience) 2 credits

Provides on-the-job field experience required for graduation from the program. Requirements include fifteen hours per week of work experience, a written report analyzing four major management responsibilities, and a professional oral presentation of the written report. Prerequisite: Two semesters in the Hospitality and Tourism Management program.

10-145-106 Small Business Marketing 3 credits

Developing and refining the marketing and promotion plans for a small business. Topics for discussion include merchandise/service resources, budgeting, study of competition, market segmentation, pricing, promotion, non-media ways to get customers to come to your business, and strategic planning.

10-116-145 Introduction to Human Resources 3 credits

Topics include: the nature of human management, strategic human resource planning, issues in human resources, planning, equal employment opportunity, analyzing and staffing jobs, training and developing human resources.

10-316-101 Principles of Sanitation 1 credit

Covers food-service sanitation principles and the role of food service personnel in the prevention of contamination and food-borne illness. Certification through the Educational Foundation of the National Restaurant Association is a requirement for completion and can be used to apply for state certification.

Recommended Electives:

10-103-133 Excel-Beginning 1 credit

10-103-143 PowerPoint-Beginning 1 credit

10-109-137 Wine Appreciation 1 credit

10-109-144 Disney College Internship 3 credits

This course provides credit for work experience for students selected to participate in the Disney College Program at Walt Disney World in Florida.

10-109-146 Disney College Seminar 3 credits

This course provides credit for the workshops and seminars required by participants in the Disney College Program.

(Only one of the following)

10-890-101 College Success Study Skills 1 1 credit

10-890-102 College Success Study Skills 2 2 credits

10-890-103 College Success Study Skills 3 3 credits

20-890-200 College Success 3 credits

Career Potential:

- Restaurant Manager
- Assistant Food and Beverage Manager
- Hotel Front Office Manager
- Hotel Executive Housekeeper
- Hotel Sales Manager
- Meeting Planner

With additional education and/or experience, graduates may find employment as:

- Association Executive
- Department Head
- Regional Manager
- District Manager
- Director

More detailed and updated information on this program may be available at: madisoncollege.edu. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

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Rev. 04/15

Human Resource Management

Program Number: 10-116-2

Associate in Applied Science Degree

Accounting and Finance Program Cluster

School of Business and Applied Arts

Program offered at Madison

Most courses offered at Fort Atkinson, Portage, Reedsburg and Watertown Campuses

For information call:
(608) 246-6003 or (800) 322-6282 Ext. 6003

For Accelerated Programs:
(608) 245-5850 or (800) 322-6282 Ext. 5850

About the Program

The Human Resource Management program provides a well-rounded study in the Human Resources profession within the context of the fundamentals of business organization, finance, management and related studies. This program provides the student with training necessary for employment and advancement on the job in Human Resource Management and allied occupations. Graduates are prepared to complete BS/BA degrees at four-year institutions.

Admissions Requirements

To review admissions program requirements and application processing dates, visit the program's website at: <http://madisoncollege.edu/program-info/human-resource-management>.

Information about a Double Major with the Business Management Program

Students admitted to the Business Management program may be able to complete the Human Resource Management program with just one additional semester of study. (Additional course work may be needed depending on your admit term.) Follow your Academic Requirements (advising) report for your specific requirements to graduate in any program.

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

			Hrs/week	
		Credits	Lec	Lab
First Semester				
10-102-134	Business Organization, Management, and Ethics	3	3	0
10-116-145	Introduction to Human Resources OR	3	3	0
10-196-193	<i>Human Resource Management</i>	(3)	3	0
10-116-153	Meeting Facilitation	1	1	0
10-116-168	Employment Law	3	3	0
10-801-195	Written Communication	3	3	0
10-801-196	Oral/Interpersonal Communication OR	3	3	0
20-810-208	<i>Small Group and Interpersonal Communication</i>	(3)	3	0
Semester Total		16		
Second Semester				
10-103-133	Excel-Beginning	1	0.25	1.5
10-116-147	Wage, Salary, and Benefits Administration	3	3	0
10-116-149	Effective Staffing	3	3	0
10-116-152	Organizational Training and Development	3	3	0
10-801-198	Speech	3	3	0
10-804-144	<i>Math of Finance</i>	3	3	0
Semester Total		16		
Third Semester				
10-101-111	Accounting 1-Principles	4	4	0
10-102-143	Management Techniques	3	3	0
10-116-148	Labor Relations	3	3	0
10-809-195	Economics	3	3	0
10-809-199	Psychology of Human Relations	3	3	0
Semester Total		16		
Fourth Semester				
10-101-154	Payroll Accounting	1	0.5	1
10-102-132	Strategic Leadership	3	3	0
10-102-135	Project Management - Fundamentals	3	3	0
10-103-143	PowerPoint-Beginning	1	0.3	1.5
10-103-145	Access-Beginning	1	0	2
10-104-102	Marketing Principles	3	3	0
10-116-169	Human Resources Capstone	1	1	0
10-801-197	<i>Technical Reporting</i>	3	3	0
Semester Total		16		

Electives must be associate degree (10-level) or college transfer (20-level) courses.

Notes:

Students are placed in English or mathematics courses based on their scores on the COMPASS or ASSET test or on completion of the appropriate prerequisite.

Courses may be taken in any order, as long as there are no pre-reqs or pre-reqs have been met.

Graduation Requirement:

A minimum grade of C is required for all technical studies courses in order to graduate.



Program Courses

10-101-111 Accounting 1–Principles 4 credits

Introduction to the field of accounting. The accounting cycle of journalizing transactions, posting, adjusting and closing entries, as well as the preparation of accounting statements is emphasized for service industries and merchandising concerns. Details of accounting for cash and receivables are studied. An introduction to a computerized accounting system is also included. Recommend completion of 10-804-144.

10-101-154 Payroll Accounting 1 credit

This course introduces the student to the many aspects of payroll accounting, administration, and management. The course is intended for accounting students, other business students and outside professionals who have a need or interest in understanding the laws and regulations, the calculations (including all payroll taxes), the government reporting and the accounting entries related to the payroll function. Prerequisite: Accounting 1-Principles, 10-101-111

10-102-132 Strategic Leadership 3 credits

This capstone course for the Business Management program is designed to integrate and enhance skills and behaviors learned throughout the curriculum. Students gain insights from key leadership experts related to leading oneself, others, and organizational change, and apply these insights through an In-Box simulation where they are responsible for all aspects of "turning around" a failing business. A computer business simulation, where students compete against each other, reinforces learnings from prior courses and enhances an overall business perspective. Course includes an exercise in deep self-reflection, designed to build student resolve and ability to be a "high-integrity" ethical leader.. Prerequisites: 10-102-134 and 10-102-143.

10-102-134 Business Organization and Management 3 credits

This survey course imparts an understanding of the economic and legal environment in which businesses operate, as well as an understanding of the organization and management of business enterprises. An emphasis is placed on business terminology and concepts.

10-102-135 Project Management – Fundamentals 3 credits

This is introductory Project Management class develops skills to manage a project from start to finish using the following project management skills: defining projects; planning projects; scheduling projects; monitoring and controlling projects; project closure; and leading projects. Emphasis will be placed on applying these fundamentals, as both a participant and project leader, in case studies and group projects, using worksheet templates, project software tools and Microsoft Project software. Skills covered include but are not limited to project charters, Gantt Charts, critical paths, milestones, risk control and prioritization, project acceptance and closeout, teamwork and problem solving.

10-102-143 Management Techniques 3 credits

Covers problems facing management and workers with special emphasis on supervisory personnel and their challenges. Management principles are applied to such topics as the relationship of management to the business, its employees, the owner, other customers and the community. Problem solving is emphasized. Prerequisite: 10-102-134.

10-103-133 Excel–Beginning 1 credit

Introduction to Excel spreadsheet software. Create, edit, save, format, print, perform calculations, copy/move text and formulas, create charts, create complex formulas and expand use of functions. Prerequisite: competency in Windows operating system.

10-103-143 PowerPoint–Beginning 1 credit

Introduction to PowerPoint presentation software. Create, edit, save, and print a presentation. Insert clip art, apply animation and slide transition effects, import text, customize background and bullets, create a table and a chart, create a WordArt object, and create a Webpage from a PowerPoint slide. Prerequisite: competency in Windows and experience using word processing software.

10-103-145 Access–Beginning 1 credit

Introduction to Access database software. Plan, create, edit, save, print and manage data; modify a database structure; relate tables; find, filter, query and sort data in tables; create forms and reports. Prerequisite: Competency in Windows.

10-104-102 Marketing Principles 3 credits

This foundation course introduces students to the marketing process and how it operates in today's dynamic organizations. The entire marketing mix is examined on a broad scale. Topics include: market segmentation and targeting strategies, market research, consumer behavior, product development, pricing policies, distribution, and an overview of promotion. This basic course provides a comprehensive overview of the exciting world of marketing.

10-116-145 Introduction to Human Resources 3 credits

Topics include: the nature of employee management, strategic human resource planning, equal employment opportunity, analyzing and staffing jobs, training and developing human resources.

10-116-147 Wage, Salary, & Benefits Administration 3 credits

Topics include: Basic systems and plans of compensating employees, incentives and executive compensation, principles and techniques in the administration of employee benefit programs.

10-116-148 Labor Relations 3 credits

Topics include employee rights and discipline; union-management relations; collective bargaining and grievance management; and assessment systems.

10-116-149 Effective Staffing 3 credits

This course provides a comprehensive approach to planning for staffing; employing a wide range of recruiting methods; and identifying optimal selection methods.

10-116-152 Organizational Training and Development 3 credits

This course provides an overview of the Training and Development function in organizations. There will be many opportunities to design and practice methods for planning for training, needs analysis, management development, and organization development. Students will learn effective techniques for on-the-job training, developing job aids, and designing classroom instruction. Introductory information on topics such as embedded learning, e-learning, and simulations will also be included.

10-116-153 Meeting Facilitation 1 credit

This course provides both information about meeting facilitation and an environment for practice. The ultimate goal is for students to learn to conduct effective meetings.

10-116-168 Employment Law 3 credits

Topics include: unemployment compensation laws; workers' compensation laws; hiring and firing practices; sexual harassment in the workplace; the Americans with Disabilities Act; and labor law basics under the National Labor Relations Act. Course examines current "black letter law" together with case decisions. Content is appropriate for persons whose career plans involve employee management.

10-116-169 Human Resources Capstone 1 credit

This final course in the Human Resource Management program integrates and enhances knowledge and skills developed throughout the program. Topics include staffing, labor relations, compensation, training and development, and employment law. This course should be taken in the last semester.

Career Potential:

- Recruiter
- Employment Verification Specialist
- HR Assistant
- Training Coordinator

With additional education and/or work experience, graduates may find employment as:

- Compensation Specialist
- Job Analyst
- HR Manager
- Training Manager
- Labor Relations Specialist
- EEO Specialist

More detailed and updated information on this program may be available at: madisoncollege.edu. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

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10-116-168	Employment Law	3	3-0
10-801-195	Written Communication	3	3-0
10-801-196	Oral/Interpersonal Communication OR	3	3-0
20-810-208	<i>Small Group and Interpersonal Communication</i>	(3)	3-0
Semester Total		16	
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10-801-198	Speech	3	3-0
10-804-144	<i>Math of Finance</i>	3	3-0
Semester Total		16	
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10-102-143	Management Techniques	3	3-0
10-116-148	Labor Relations	3	3-0
10-809-195	Economics	3	3-0
10-809-199	Psychology of Human Relations	3	3-0
Semester Total		16	
Fourth Semester			
10-101-154	Payroll Accounting	1	0.5-1
10-102-132	Strategic Leadership	3	3-0
10-102-135	Project Management - Fundamentals	3	3-0
10-103-143	PowerPoint-Beginning	1	0.3-1.5
10-103-145	Access-Beginning	1	0-2
10-104-102	Marketing Principles	3	3-0
10-116-169	Human Resources Capstone	1	1-0
10-801-197	<i>Technical Reporting</i>	3	3-0
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Covers problems facing management and workers with special emphasis on supervisory personnel and their challenges. Management principles are applied to such topics as the relationship of management to the business, its employees, the owner, other customers and the community. Problem solving is emphasized. Prerequisite: 10-102-134.

10-103-133 Excel–Beginning 1 credit

Introduction to Excel spreadsheet software. Create, edit, save, format, print, perform calculations, copy/move text and formulas, create charts, create complex formulas and expand use of functions. Prerequisite: competency in Windows operating system.

10-103-143 PowerPoint–Beginning 1 credit

Introduction to PowerPoint presentation software. Create, edit, save, and print a presentation. Insert clip art, apply animation and slide transition effects, import text, customize background and bullets, create a table and a chart, create a WordArt object, and create a Webpage from a PowerPoint slide. Prerequisite: competency in Windows and experience using word processing software.

10-103-145 Access–Beginning 1 credit

Introduction to Access database software. Plan, create, edit, save, print and manage data; modify a database structure; relate tables; find, filter, query and sort data in tables; create forms and reports. Prerequisite: Competency in Windows.

10-104-102 Marketing Principles 3 credits

This foundation course introduces students to the marketing process and how it operates in today's dynamic organizations. The entire marketing mix is examined on a broad scale. Topics include: market segmentation and targeting strategies, market research, consumer behavior, product development, pricing policies, distribution, and an overview of promotion. This basic course provides a comprehensive overview of the exciting world of marketing.

10-116-145 Introduction to Human Resources 3 credits

Topics include: the nature of employee management, strategic human resource planning, equal employment opportunity, analyzing and staffing jobs, training and developing human resources.

10-116-147 Wage, Salary, & Benefits Administration 3 credits

Topics include: Basic systems and plans of compensating employees, incentives and executive compensation, principles and techniques in the administration of employee benefit programs.

10-116-148 Labor Relations 3 credits

Topics include employee rights and discipline; union-management relations; collective bargaining and grievance management; and assessment systems.

10-116-149 Effective Staffing 3 credits

This course provides a comprehensive approach to planning for staffing; employing a wide range of recruiting methods; and identifying optimal selection methods.

10-116-152 Organizational Training and Development 3 credits

This course provides an overview of the Training and Development function in organizations. There will be many opportunities to design and practice methods for planning for training, needs analysis, management development, and organization development. Students will learn effective techniques for on-the-job training, developing job aids, and designing classroom instruction. Introductory information on topics such as embedded learning, e-learning, and simulations will also be included.

10-116-153 Meeting Facilitation 1 credit

This course provides both information about meeting facilitation and an environment for practice. The ultimate goal is for students to learn to conduct effective meetings.

10-116-168 Employment Law 3 credits

Topics include: unemployment compensation laws; workers' compensation laws; hiring and firing practices; sexual harassment in the workplace; the Americans with Disabilities Act; and labor law basics under the National Labor Relations Act. Course examines current "black letter law" together with case decisions. Content is appropriate for persons whose career plans involve employee management.

10-116-169 Human Resources Capstone 1 credit

This final course in the Human Resource Management program integrates and enhances knowledge and skills developed throughout the program. Topics include staffing, labor relations, compensation, training and development, and employment law. This course should be taken in the last semester.

Career Potential:

- Recruiter
- Employment Verification Specialist
- HR Assistant
- Training Coordinator

With additional education and/or work experience, graduates may find employment as:

- Compensation Specialist
- Job Analyst
- HR Manager
- Training Manager
- Labor Relations Specialist
- EEO Specialist

More detailed and updated information on this program may be available at: madisoncollege.edu. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

Madison Area Technical College provides equal opportunity in education and employment.

Human Resources Certificate

Certificate

Program Number: 90-116-1

Accounting and Finance Program Cluster

School of Business and Applied Arts

Certificate courses are offered at Madison Campuses (and online)

For information call:
(608) 246-6003 or (800) 322-6282 Ext. 6003

About the Certificate

The Human Resources Certificate is a certificate program for individuals interested in maintaining or pursuing careers in human resources departments. The certificate is designed for updating and/or broadening the knowledge of employees in the field of human resources and for individuals desiring to enter the field.

Admission Requirements

To review program admission requirements and application processing dates, visit the program's website at:
<http://madisoncollege.edu/program-info/human-resources-certificate>.

Requirements for Completion

The certificate will be awarded upon completion of the requirements with a minimum of a 2.0 grade average and no course grade lower than a C. The certificate will be awarded when completion of all requirements is verified after the semester the last course has been completed.

No more than 50% of the certificate credits may be through an advanced standing.

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

Select a minimum of 12 credits from among the following:

Courses	Credits	Hrs/week	
		Lec	Lab
10-102-143 Management Techniques*	3		3-0
10-103-133 Excel-Beginning*	1		0.25-1.5
10-103-143 PowerPoint-Beginning*	1		0.25-1.5
10-116-145 Introduction to Human Resources* OR	3		3-0
10-196-196 <i>Human Resource Management</i>	(3)		3-0
10-116-147 Wage, Salary, and Benefits Administration*	3		3-0
10-116-148 Labor Relations	3		3-0
10-116-149 Effective Staffing	3		3-0
10-116-152 Organizational Training and Development.....	3		3-0
10-116-153 Meeting Facilitation	1		0.5-1
10-116-168 Employment Law*	3		3-0

***Students who are interested in online learning options may select these courses**



Courses

10-102-143 Management Techniques 3 credits

Covers problems facing management and workers with special emphasis on supervisory personnel and their challenges. Management principles are applied to such topics as the relationship of management to the business, its employees, the owner, other customers and the community. Problem solving is emphasized.

10-103-133 Excel–Beginning 1 credit

Introduction to Excel spreadsheet software. Create, edit, save, format, print, perform calculations, copy/move text and formulas, create charts, create complex formulas and expand use of functions. Prerequisite: competency in Windows operating system.

10-103-143 PowerPoint–Beginning 1 credit

Introduction to PowerPoint presentation software. Create, edit, save, and print a presentation. Insert clip art, apply animation and slide transition effects, import text, customize background and bullets, create a table and a chart, create a WordArt object, and create a Webpage from a PowerPoint slide. Prerequisite: competency in Windows operating system AND experience using word processing software.

10-116-145 Introduction to Human Resources 3 credits

Topics include: nature of human management, strategic human resource planning, issues in human resources, planning, equal employment opportunity, analyzing and staffing jobs, training and developing human resources.

10-116-147 Wage, Salary, and Benefits Administration 3 credits

Topics include: Basic systems and plans of compensating employees, incentives and executive compensation, principles and techniques in the administration of employee benefit programs.

10-116-148 Labor Relations 3 credits

Topics include: Employee rights and discipline, union-management relations, collective bargaining and grievance management, assessment systems.

10-116-149 Effective Staffing 3 credits

This course provides a comprehensive approach to planning for staffing; employing a wide range of recruiting methods; and identifying optimal selection methods.

10-116-152 Organizational Training and Development 3 credits

This course provides an overview of the Training and Development function in organizations. There will be many opportunities to design and practice methods for planning for training, needs analysis, management development, and organization development. Students will learn effective techniques for on-the-job training, developing job aids, and designing classroom instruction. Introductory information on topics such as embedded learning, e-learning, and simulations will also be included.

10-116-153 Meeting Facilitation 1 credit

This course provides both information about meeting facilitation and an environment for practice. The ultimate goal is for students to learn to conduct effective meetings.

10-116-168 Employment Law 3 credits

Topics include: Unemployment compensation laws, workers' compensation laws, hiring and firing practices, sexual harassment in the workplace, the Americans with Disabilities Act, and labor law basics under the National Labor Relations Act. Course examines current "black letter law" together with case decisions. Content is appropriate for persons whose career plans involve employee management.

Career Potential:

- Human Resources Assistant
- Human Resources Representative
- Human Resources Clerk
- Human Resources Coordinator
- Human Resources Technician

With additional education and/or experience, graduates may find employment as:

- Human Resources Specialist
- Human Resources Analyst
- Human Resources Manager

More detailed and updated information on this program may be available at: madisoncollege.edu. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

Madison Area Technical College provides equal opportunity in education and employment.

Human Services Associate

Program Number: 10-520-3

Associate in Applied Science Degree

Human Services Program Cluster

School of Human and Protective Services

Program offered at Downtown Education Center, Madison

For information call: (608) 245-5888 or
(800) 322-6282 Ext. 5888

About the Program

The Human Services Associate program trains people to provide information, support, care and advocacy in a human service agency. Students acquire the skills needed to work with individuals, groups and communities. They learn to work with people of diverse racial, ethnic and cultural backgrounds.

General education courses included in the program teach students to better understand social problems. During the second year of the program, students have a fieldwork placement in a human service agency. Travel to fieldwork sites is necessary and is the student's responsibility. A Caregiver Background Check is required for fieldwork placements. Information obtained from the Criminal History Check may affect the ability to secure a fieldwork placement and the ability to find employment after graduation.

Some of the aptitudes and interests that are essential for human service students include emotional stability and maturity, an interest in working with people, and an appreciation of cultural competence and diversity.

The Human Services Associate program is recognized by the Wisconsin Department of Safety and Professional Services as a training program for Substance Abuse Counselors. The program is also accredited by the Council for Standards in Human Service Education preparing students for the Human Services – Board Certified Professional Credential.

Admission Requirements

To review program admission requirements and application processing dates, visit the program's website at: <http://madisoncollege.edu/program-info/human-services-associate>.

Requirements for Graduation

Students must achieve at least a 2.0 (C) grade in all program core courses and an overall 2.0 (C) grade point average.

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

		Credits	Hrs/week Lec-Lab
First Semester			
10-520-105	Introduction to Human Services	3	3-0
10-520-106	Orientation to Human Services Population	3	3-0
10-520-117	Interviewing †	3	3-0
10-520-135	Life in a Local Community	3	3-0
10-801-195	Written Communication OR	3	3-0
20-801-201	English 1*	(3)	(3-0)
10-809-199	Psychology of Human Relations OR	3	3-0
20-809-231	Introduction to Psychology*	(3)	(3-0)
Semester Total		18	
Second Semester			
10-520-116	Groupwork †	3	3-0
10-520-130	Social Change †	3	3-0
10-801-197	Technical Reporting OR	3	3-0
20-801-202	English 2*	(3)	(3-0)
10-804-107	College Math OR	3	4-0
20-804-201	Intermediate Algebra*	(3)	(3-0)
10-809-197	Contemporary American Society OR	3	3-0
20-809-203	Introduction to Sociology*	(3)	(3-0)
10-520-136	Counseling Alcoholics and Other Drug Abusers †	3	3-0
Semester Total		18	
Third Semester			
10-520-139	Human Services Agency Experience	4	0-16
10-520-157	Human Services Counseling Skills †	3	3-0
10-520-188	Human Services Agency Experience	3	3-0
10-809-188	Developmental Psychology OR	3	3-0
10-809-127	Human Development OR	(3)	(3-0)
20-809-233	Developmental Psychology	(3)	(3-0)
Elective		3	E
Semester Total		16	
Fourth Semester			
10-520-120	Community Service Experience **	3	3-0
10-520-140	Human Services Agency Experience	5	0-20
10-520-189	Human Services Agency Experience	3	3-0
10-809-172	Introduction to Diversity Studies OR	3	3-0
20-809-252	Race and Ethnicity in the U.S.*	(3)	(3-0)
Elective		3	E
Semester Total		17	

*College transfer equivalent courses.

†Prerequisites required; consult department office.

**Co-requisites: courses must be taken at the same time.

†AODA Certification Courses

Note: Students are placed in English or mathematics courses based on their scores on the COMPASS test or on completion of the appropriate prerequisite/s. A COMPASS Reading score of 80 or higher **and** an e-Write score of 6 or higher with a Writing score of 46-68 **or** an e-Write score of 5 with a Writing score of 69-99 are required for the following first semester courses: Intro to Human Services, 10-520-105; Orientation to Human Services Populations, 10-520-106; and Interviewing, 10-520-117.



Program Courses

Human Services Associate Course Prerequisites

Students enrolling in the courses identified within this program must meet the following requirements: High school diploma or GED/HSED with a grade point average of 2.0 or equivalent. A COMPASS Reading score of 80 or higher **and** an e-Write score of 6 or higher with a Writing score of 46-68 **or** an e-Write score of 5 with a Writing score of 69-99 are required for the following first semester courses: Introduction to Human Services, 10-520-105; Orientation to Human Services Populations, 10-520-106 and Interviewing, 10-520-117.

10-520-105 Introduction to Human Services 3 credits

Examines the scope, values and principles of the human service profession. Introduces the typical roles and duties of human service workers. Students assess their own motivations, attitudes and interests. In addition to the regular classroom hours, 45 hours of volunteer work in a community human services agency are required. Prerequisite: Human Services Associate course prerequisites.

10-520-106 Orientation to Human Services Populations 3 credits

Introduces social problems that contribute to the dysfunction of individuals, groups, families and communities. Addresses problems, needs, conditions and events that bring people to human service organizations. Prerequisite: Human Services Associate course prerequisites.

10-520-116 Group Work Skills 3 credits

Students learn principles and techniques needed to lead informational and supportive groups based on the solution-focused model. Students practice group work skills during class. Prerequisite: 10-520-117.

10-520-117 Interviewing 3 credits

Students learn principles and techniques needed to conduct informational and supportive interviews. Students practice interviewing skills during class. Prerequisite: Human Services Associate course prerequisites.

10-520-120 Community Service Agencies 3 credits

Focuses on characteristics and functions of human services organizations and the roles of human service workers in those organizations. Covers organizational skills of assessment, planning, budgeting, grant writing, evaluation and consulting. Prerequisites: 10-520-105, 10-520-139, 10-520-188 and concurrent enrollment in 10-520-140 and 10-520-189.

10-520-130 Social Change Skills 3 credits

Introduces principles and strategies of planned change and the role of human services workers as community organizers. Covers how consumers affected by a social problem can clearly define an issue, set a goal and organize to bring about social change. Prerequisite: 10-520-106.

10-520-135 Issues in Alcohol and Other Drug Abuse 3 credits

Provides students with a basic understanding of the use and abuse of alcohol and other drugs. Emphasizes historical and social perspectives on drug use, trends of use and legal and social responses to illicit drug use. Additionally, this course provides an accurate description of the effects of psychoactive drugs, identifies methods of substance abuse treatment and introduces the student to local treatment services. Prerequisite: Human Services Associate course prerequisites.

10-520-136 Counseling Alcoholics and Other Drug Abusers 3 credits

Trains students in basic listening and responding skills, familiarizes students with the 12 core functions performed by AODA counselors (screening, intake, orientation, assessment, treatment planning, counseling, case management, crisis intervention, client education, referral, reports, record keeping and consultation) and provides a structured learning environment in which students can develop skills in these core functions.

10-520-139 Human Services Agency Experience 1 4 credits

Students develop skills as human services workers by working directly or indirectly with clients in community agencies 16 hours per week. An agency supervisor and a faculty member closely supervise students. The human services staff makes field placement assignments. Prerequisites: 10-520-105, 10-520-116, 10-520-117, and concurrent enrollment in 10-520-188.

10-520-140 Human Services Agency Experience 2 5 credits

Students continue their on-the-job training in community agencies for 20 hours per week. By the end of the course, students have the skills of an entry-level human services worker. Prerequisites: 10-520-139 and 10-520-188, and concurrent enrollment in 10-520-120 and 10-520-189.

10-520-157 Human Services Counseling Skills 3 credits

Introduces basic concepts of ego counseling, Rogerian counseling, transactional analysis, rational-emotive therapy, reality therapy, narrative therapy and solution focused therapy. Covers how counseling theories identify and define problems, explain personality development and treat problem situations. Prerequisites: 10-520-116 and 10-520-117.

10-520-188 Human Services Experience Conference 1 3 credits

A small-group seminar designed as a companion/supportive course to the agency experience. Relates theory and principles of practice to agency field-study experience. Students learn to develop supportive relationships with clients and apply the values of confidentiality and client self-determination. They learn how their values and personal experiences affect their work with clients. Prerequisites: 10-520-105, 10-520-116, 10-520-117, and concurrent enrollment in 10-520-139.

10-520-189 Human Services Experience Conference 2 3 credits

Students develop skills specific to their fieldwork placement and complete a major project to enhance their cultural competence. Co-requisites: 10-520-120 and 10-520-140; Prerequisites: 10-520-139 and 10-520-188.

Recommended Electives

10-520-141 Introduction to Community Mental Health† 3 credits

Intro to Community Mental Health can be taken in lieu of Counseling Alcoholics and Other Drug Abusers, 10-520-136.

10-520-150 Alcohol and other Drug Abuse – Special Populations† 3 credits

Six (6) elective credits are required for the program and can be six (6) associate degree or college transfer credits of your choice. Once registered for electives, view your advising report (Academic Requirements) in your Student Center account for verification of applicability towards your program requirements.

Career Potential:

- Case Manager
- Community Support Worker
- Substance Abuse Counselor in Training
- Income Maintenance Worker
- Information and Referral Specialist
- Intake Worker
- Outreach Worker
- Prevention Worker
- Residential Manager
- Volunteer Coordinator

With additional education and/or work experience, graduates may find employment as:

- Substance Abuse Counselor
- Program Director
- Social Worker

More detailed and updated information on this program may be available at: madisoncollege.edu. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

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Rev: 03/15

†AODA Certification Course

Individualized Technical Studies Degree

Program Number: 10-825-1

Associate Degree

Program offered at Madison Campuses

For information call: (608) 258-2440 or
(800) 322-6282 Ext. 2440

About the Program

This associate degree program permits a qualified individual to plan a unique program of study to meet his/her own career goals. An occupational advisor from business/industry and a Madison College advisor provide direction to identify the knowledge and skills required for success in achieving those goals. Existing Madison College courses become components of the program. Courses include general education, mathematics and science, electives and specific technical core courses that may be selected from two or more traditional program areas.

The standard 60-70 planned credit hours of study are required to earn the Associate of Applied Science Degree in Technical Studies. Admission to the program must be approved prior to the completion of the first 32 credit hours.

Program Intent/Rationale

This program is intended for currently employed individuals who have specific career objectives which cannot be met by Madison College's existing degree programs. Since many adult students already have occupational skills and work experience, they are looking for additional specific skills to operate their own business or prepare for career advancement. They value a portable credential that attests to their level of achievement. No single existing program may meet their unique needs.

With the growth of employment opportunities in small to mid-sized companies, employers are increasingly seeking workers able to perform multiple tasks that can cut across traditional occupational designations. New kinds of technologies and work processes require employees to have flexible sets of skills drawn from a variety of traditional disciplines and programs. Employers may be interested in designing and sponsoring a customized program (unique combination of existing courses) to meet their company's specific needs.

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

- I. **General Education Core (select one from each content group).....21-30 credits**

Associate Degree	College	Transfer
Communications6 credits		
1. 10-801-195 Written Communication	or	20 801-201 English Composition 1
2. 10-801-196 Oral/Interpersonal Communication	or	20 801-202 English Composition 2
10-801-197 Technical Reporting (Prerequisite: Written Communication)		
10-801-198 Speech	or	20-810-201 Fundamentals of Speech
Social Science 3 credits		
3. 10-809-195 Economics	or	20-809-211 Macroeconomics 20-809-212 Microeconomics
4. 10-809-197 Contemporary American Society	or	20-809-203 Introduction to Sociology
Behavior Science..... 3 credits		
5. 10-809-199 Psychology of Human Relations	or	20-809-231 Introduction to Psychology 20-809-233 Developmental Psychology
Math/Science3 credits*		
6. *Associate degree or college transfer approved courses		
Additional General Studies Courses6-15 credits		
- II. **Individualized Technical Studies Courses 36-49 credits**
Students are required to complete a minimum of 36 credit hours relevant to career goals. A minimum of 20 of these credits must be focused in one discipline.
- III. **Electives0-6 credits**
Students may complete up to six credit hours of electives relevant to career goals. You may utilize your electives to take additional technical courses.
- IV. **Total Program Credits60-70 credits**
- V. **Advanced Standing Request**
A minimum of 50% of the total program credits required must be earned at Madison College.

Note: Students are placed in English and mathematics courses based on their scores on the COMPASS or ASSET test or on completion of the appropriate prerequisite/s.



Program Objectives

The objectives of the Individualized Technical Studies Program are to provide flexibility to meet the educational needs of individuals with unique career goals and specific occupational outcomes, to serve the individual whose career goals cannot be achieved through enrollment in any single program currently available at Madison College, and to provide employers with a flexible program of study to meet the educational needs of their employees.

Program Requirements

Required coursework includes: general studies, 21-30 credits; technical studies, 36-49 credits; and electives, 0-6 credits, for a total of 60-70 credits.

Technical Studies Core

A minimum of 36 credits of occupational-specific courses is required with a minimum of 20 of those credit hours focused in one instructional area. Courses must be selected to achieve the specific career outcomes identified by the student. There must be sufficient concentration of coursework in one or two areas to ensure technical competence and employability.

Admission Requirements

To review program admission requirements and application processing dates visit the programs website at:
<http://madisoncollege.edu/program-info/individualized-technical-studies>.

Clarification of Purpose

The Individualized Technical Studies Program is NOT intended to become a catch-all for students with little or no career focus, nor to prepare students for occupations that have little or no job market demand. It is also NOT simply an accumulation of credit hours which leads to a degree. It is a pre-planned program of study. Finally, this degree program option is NOT designed to give students the opportunity to make minor course changes to current existing programs.

Examples of Individualized Programs

It might be helpful to consider just a few of the possible examples of new individualized programs of study that a student or employer might request. A degree in "Police Management" may be needed in support of occupations in the law enforcement field—a program which could be designed with current courses from our police science and supervisory management programs. Perhaps area advertising agencies need to fill positions that call for skills and abilities in marketing and desktop publishing. For this purpose, a degree program in "Marketing Design and Production" may be in demand by a few individuals or agencies—a demand Madison College could fill by repackaging current program courses.

Industrial Automation Post Baccalaureate Certificate

Program Number: 90-462-3

Certificate

Manufacturing Program Cluster

School of Applied Science, Engineering, and Technology

Program offered at Madison Campuses

For information call:

(608) 246-6800 or (800) 322-6282 Ext. 6800

About the Certificate

The certificate curriculum includes five courses from the Industrial Maintenance Technician program. The curriculum may be completed in two semesters or longer.

Students completing this certificate will have practical skills and knowledge needed for employment in Automation and Process Control industries, including manufacturing automation and renewable energy infrastructure in public sectors.

This certificate is perfect for individuals who have a theoretical basis for, but lack the practical skills for automation and Process Control.

Admissions Requirements

To review admissions program requirements and application processing dates visit the programs website at: <http://madisoncollege.edu/program-info/industrial-automation-post-baccalaureate-certificate>.

Requirements for Completion

The certificate will be awarded upon completion of the requirements with a minimum of a 2.0 grade average. The certificate will be awarded when completion of all requirements is verified after the semester the last course has been completed.

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

Courses		Credits	Hrs/week
32-414-318	Electronic Circuits for Maintenance ^o	3	3-3
32-414-319	Programmable Logic Controllers		
32-414-320	Programmable Logic Controllers 2		
32-414-321	Interfacing Sensors with Computer Controls		
32-462-314	Manufacturing Systems,		

o

♦Spring course offering

Note:

Courses are listed in suggested sequence. Enrollment for courses adhere to course pre-requisites and co-requisites as indicated at the end of each course description.



Courses

32-414-318 Electronic Circuits for Maintenance 3 credits

Presents semiconductor devices with an emphasis on their practical use. Students construct and troubleshoot power supplies, amplifiers, electronic switches, relay drivers, photo-optical isolators and power control electronics. Students learn to identify and troubleshoot diodes, bipolar transistors (BJTs), field-effect transistors (FETs), silicon controlled rectifiers (SCRs and Triacs), light-emitting diodes (LEDs) and other components found in industrial electronics. Prerequisites: 32-414-316, 32-421-392, 32-462-318, and 32-463-318.

32-414-319 Programmable Logic Controllers 1 3 credits

Fundamentals of programmable logic controller (PLC) installation, interfacing, operation, and programming. Students learn about PLCs connected to Windows-based PCs running state-of-the-art programming tools. Students study discrete and analog input and output; hardware sensor interfacing and troubleshooting techniques; fundamentals of digital systems and will program PLCs using timer, counter, latch, data movement, sequencing, integer arithmetic and other instructions. Prerequisites: 32-414-316, 32-421-392, 32-462-318, and 32-463-318.

32-414-320 Programmable Logic Controllers 2 3 credits

Advanced programmable logic controller (PLC) installation, interfacing, operation, and programming. Students learn how to connect advanced PLCs in a typical industrial PLC network utilizing Ethernet, DH+, RS232 and RIO communication paths. Data sharing and distributed PLC programming techniques along with fundamentals of touch panel programming and operation are studied. Prerequisite: 32-414-320.

32-414-321 Interfacing Sensors with Computer Controls 3 credits

Applies various sensors to analog input modules of programmable controllers and to A/D converters for computer systems. Prerequisites: 32-414-316, 32-421-392, 32-462-318, and 32-463-318.

32-462-314 Manufacturing Systems, Application and Control 3 credits

Introduces computer control systems and fundamentals of motion control. Presents programmable logic controllers (PLCs) along with design, integration and troubleshooting techniques. Prerequisite: 32-414-320.

Career Potential:

- Automation Engineer
- Maintenance Supervisor
- Systems Integrator
- Industrial Controls Technician
- Automation Support Engineer
- Controls Engineer
- SCADA Engineer
- Energy Infrastructure Engineering
- Bio Fuels Processing
- Plant Engineering

More detailed and updated information on this program may be available at: madisoncollege.edu. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

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Rev. 04/15

Industrial Maintenance Mechanic

Program Number: 31-462-2

One-Year Technical Diploma

Manufacturing Program Cluster

School of Applied Science, Engineering, and Technology

Program offered at Madison Campuses

For information call:

(608) 246-6800 or (800) 322-6282 Ext. 6800

About the Program

The Industrial Mechanic program provides students with the knowledge and skills necessary to assemble, install, troubleshoot, repair and modify machinery and automated systems that are computer or electronically controlled in both manufacturing and facilities environments.

Admissions Requirements

To review admissions program requirements and application processing dates visit the programs website at: <http://madisoncollege.edu/program-info/industrial-mechanic>.

Requirements for Graduation

Students must meet two 2.0 GPA requirements to graduate: 1) GPA for entire program must be 2.0 or above; 2) GPA of combined occupational courses (462) must be 2.0 or above.

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

First Semester		Credits	Hrs/week Lec-Lab
10-623-100	Safety for Industry	1	0-2
10-623-200	Interpreting Engineering Drawings	2	0-4
32-414-316	DC/AC Circuits	3	3-3
32-420-330	Metal Processes 1	2	3-1
32-462-306	Industrial Fluid Power 1Δ	1	1-1
32-462-341	Industrial Fluid Power 2D	2	2-2
10-804-107	College Math	3	4-0
Semester Total		14	
Second Semester			
32-462-303	Industrial Equipment Mechanisms 1	1	1-1
32-462-304	Industrial Equipment Mechanisms 2	1	1-1
32-462-316	Industrial Fluid Distribution Systems	2	2-2
32-462-335	Metal Processes for Maintenance	2	1-3
32-462-340	Industrial Electricity and Controls	4	4-4
10-103-133	Excel-Beginning	1	0.25-1.5
10-104-189	Customer Relations	2	3-0
Semester Total		13	

Δ Meets for 6 weeks

D Meets for 11 weeks

Note: Students are placed in English or mathematics courses based on their scores on the COMPASS or ASSET test or on completion of the appropriate prerequisite/s.

Madison Area Technical College
Industrial Maintenance Mechanic

Program Number: 32-462-1

Courses

10-623-100 Safety for Industry 1 credit
Comprehensive safety program designed for anyone involved in general industry. Specifically devised for safety directors, foremen, and field supervisors; the program provides complete information on OSHA compliance issues.

10-623-200 Interpreting Engineering Drawings 2 credits
Basic principles of engineering drawings and manufacturing procedures. Through interpretation and sketching, students learn to visualize the part, section or assembly. Uses drawings pertinent to the trades with examples in Welding, Facilities, Piping and Instrumentation (P & ID's), Sheet Metal, Equipment Manuals (technical documents, installation/repair manuals), Electrical Symbols, and Fluid Power Symbols.

32-414-316 DC/AC Circuits 3 credits
Introduces the practical DC/AC concepts including electrical quantities and components and measurement instruments for AC and DC circuits used in commercial, industrial, and sustainable energy fields. Students analyze and construct circuits and measure voltage, current, resistance and power for both AC and DC sources. Covers fundamentals of NEC wiring, soldering and relay ladder logic. Pre- or Co-requisite: Machine Tool Math 1, 10804110, OR College Math, 10804107, OR COMPASS Algebra score of 40 or higher.

32-420-330 Metal Processes 1 2 credits
This basic metalworking course is designed to provide the student with instruction in metalworking processes. Instructional units include safety, layout and measuring, machining, oxy-acetylene welding, brazing and cutting, arc welding and properties of metals

32-462-303 Industrial Equipment Mechanisms 1 1 credit
32-462-304 Industrial Equipment Mechanisms 2 1 credit
Studies basic principles of physics specific to electro-mechanical systems. Emphasizes measurement, lubrication, energy, power, machines and fluid and chemical properties, as well as installation, timing and synchronization of machine drive components. Includes hands-on disassembly and assembly of industrial components.
For 32-462-303, Co-requisite: 31-462-340.
For 32-462-304, Prerequisite: 32-462-303.

32-462-306 Industrial Fluid Power 1 1 credit
32-462-341 Industrial Fluid Power 2 2 credits
Fundamentals of fluid power (hydraulic and pneumatic) and its components as well as principles, functions and terminology. Covers the application of basic fluid power systems to various machines along with maintenance and troubleshooting. Pre- or Co-requisite: Machine Tool Math 1, 31804381, or equivalent (College Math, 10804107, or COMPASS Algebra score of 40 or higher). Note: Program students must take both courses in the same semester.

32-462-316 Industrial Fluid Distribution Systems 2 credits
Covers installation and repair of fluidic systems. Includes fittings, thread cutting, pipe sweating, roll grooving, solder, plastic cementing, repair equipment and tools. Pumps, valves, water supply systems and fire protection distribution systems covered.
Pre- or Co-requisite: 31-804-381 or equivalent.

32-462-335 Metal Processes for Maintenance 2 credits
Includes machine shop operations, sheet metal work, soldering and brazing, forging and heat treatment, grinding, tool sharpening, metal casting and other metal applications as related to industrial machinery repair. Prerequisite: 32-420-330 or instructor consent.

32-462-340 Industrial Electricity and Controls 4 credits
Studies motors, transformers and various electro-mechanical devices to enhance AC power distribution and control topics. Introduces programmable logic controllers in the on/off mode.
Prerequisites: 32-414-316, 32-421-392, 32-462-318, and 32-463-318.
Note: Industrial Maintenance program students must take this course with 32-462-303.

Career Potential:

- Facility Maintenance
- Production Maintenance
- Lead Production Mechanic

With additional education and/or work experience, graduates may find employment as:

- Maintenance Manager
- Production Supervisor

More detailed and updated information on this program may be available at: madisoncollege.edu. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

Madison Area Technical College provides equal opportunity in education and employment.

Rev. 04/15

Industrial Maintenance Technician

Program Number: 32-462-1

Two-Year Technical Diploma

Manufacturing Program Cluster

School of Applied Science, Engineering, and Technology

Program offered at Madison Campuses

For information call:

(608) 246-6800 or (800) 322-6282 Ext. 6800

About the Program

The Industrial Maintenance Technician Program provides students with the knowledge and skills necessary to assemble, install, troubleshoot, repair and modify machinery and automated systems that are computer or electronically controlled in both manufacturing and facilities environments. This program also has extensive training in refrigeration/HVAC, EPA certification and programmable logic controllers. Career enhancement also is vital in today's manufacturing environment.

Admissions Requirements

To review admissions program requirements and application processing dates, visit the program's website at: <http://madisoncollege.edu/program-info/industrial-maintenance-technician>.

Requirements for Graduation

Students must meet two 2.0 GPA requirements to graduate: 1) GPA for entire program must be 2.0 or above; 2.) GPA of combined occupational courses (462) must be 2.0 or above.

Courses

10-623-100 Safety for Industry 1 credit
Comprehensive safety program designed for anyone involved in general industry. Specifically devised for safety directors, foremen, and field supervisors; the program provides complete information on OSHA compliance issues.

10-623-200 Interpreting Engineering Drawings 2 credits
Basic principles of engineering drawings and manufacturing procedures. Through interpretation and sketching, students learn to visualize the part, section or assembly. Uses drawings pertinent to the trades with examples in Welding, Facilities, Piping and Instrumentation (P & ID's), Sheet Metal, Equipment Manuals (technical documents, installation/repair manuals), Electrical Symbols, and Fluid Power Symbols.

32-401-308 Heating and Air Conditioning 1 3 credits
Covers basic environmental equipment maintenance. Presents applications of HVAC components, refrigeration controls, condensers, hydronics, boilers, heat exchangers, dampers, compressors, plumbing, pumps, measurement, blowers and preventive maintenance/repair. Also covers EPA CFC certification.

32-401-309 Heating and Air Conditioning 2 3 credits
Advanced environmental equipment installation and maintenance course which puts the theory learned in 32-401-308 into practice including boiler competencies. Prerequisite: 32-401-308.

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

First Semester		Credits	Hrs/week Lec-Lab
10-623-100	Safety for Industry.....	1	0-2
10-623-200	Interpreting Engineering Drawings.....	2	0-4
32-414-316	DC/AC Circuits.....	3	3-3
32-420-330	Metal Processes 1.....	2	3-1
32-462-306	Industrial Fluid Power 1Δ.....	1	1-1
32-462-341	Industrial Fluid Power 2D.....	2	2-2
10-804-107	College Math.....	3	4-0
Semester Total		14	
Second Semester		Credits	Hrs/week Lec-Lab
32-462-303	Industrial Equipment Mechanisms 1.....	1	1-1
32-462-304	Industrial Equipment Mechanisms 2.....	1	1-1
32-462-316	Industrial Fluid Distribution Systems.....	2	2-2
32-462-335	Metal Processes for Maintenance.....	2	1-3
32-462-340	Industrial Electricity and Controls.....	4	4-4
10-103-133	Excel-Beginning.....	1	0.25-1.5
10-104-189	Customer Relations.....	2	3-0
Semester Total		13	
Third Semester		Credits	Hrs/week Lec-Lab
32-401-308	Heating and Air Conditioning 1.....	3	4-2
32-414-318	Electronic Circuits for Maintenance.....	3	3-3
32-414-319	Programmable Logic Controllers.....	3	3-3
32-462-311	Industrial Maintenance Mechanic 1.....	3	1-5
32-462-313	Maintenance Management.....	2	4-0
32-462-317	Building Service Maintenance.....	3	4-2
Semester Total		17	
Fourth Semester		Credits	Hrs/week Lec-Lab
32-401-309	Heating and Air Conditioning 2.....	3	4-2
32-401-315	Building Management Systems*.....	3	4-2
32-414-320	Programmable Logic Controllers 2.....	3	3-3
32-414-321	Interfacing Sensors with Computer Controls.....	3	3-3
32-462-314	Manufacturing Systems, Application and Control.....	3	4-2
32-462-322	Industrial Maintenance Mechanic 2#.....	3	1-5
Semester Total		18	

Δ Meets for 6 weeks

D Meets for 11 weeks

Internship Course

*10-482-101 Introduction to Wind Energy Technology may be taken instead

Note: Students are placed in English or mathematics courses based on their scores on the COMPASS or ASSET test or on completion of the appropriate prerequisite/s.

Madison Area Technical College Industrial Maintenance Technician

Courses (continued)

32-401-315 Building Management Systems 3 credits

Studies computer-based energy and building control systems in detail. Includes sensing devices, pneumatic and otherwise, as well as basic energy efficiency calculating. Also presents and discusses cost- and energy-saving ideas and plans. Prerequisite: 32-401-308.

32-414-316 DC/AC Circuits 3 credits

Introduces the practical DC/AC concepts including electrical quantities and components and measurement instruments for AC and DC circuits used in commercial, industrial, and sustainable energy fields. Students analyze and construct circuits and measure voltage, current, resistance and power for both AC and DC sources. Covers fundamentals of NEC wiring, soldering and relay ladder logic. Pre- or Co-requisite: Machine Tool Math 1, 10804110, OR College Math, 10804107, OR COMPASS Algebra score of 40 or higher.

32-414-318 Electronic Circuits for Maintenance 3 credits

Presents semiconductor devices with an emphasis on their practical use. Students construct and troubleshoot power supplies, amplifiers, electronic switches, relay drivers, photo-optical isolators and power control electronics. Students learn to identify and troubleshoot diodes, bipolar transistors (BJTs), field-effect transistors (FETs), silicon controlled rectifiers (SCRs and Triacs), light-emitting diodes (LEDs) and other components found in industrial electronics. Prerequisites: 32-414-316, 32-421-392, 32-462-301, 32-463-318.

32-414-319 Programmable Logic Controllers 1 3 credits

Fundamentals of programmable logic controller (PLC) installation, interfacing, operation, and programming. Students learn about PLCs connected to Windows-based PCs running state-of-the-art programming tools. Students study discrete and analog input and output; hardware sensor interfacing and troubleshooting techniques; fundamentals of digital systems and will program PLCs using timer, counter, latch, data movement, sequencing, integer arithmetic and other instructions. Prerequisites: 32-414-316, 32-421-392, 32-462-301, 32-463-318.

32-414-320 Programmable Logic Controllers 2 3 credits

Advanced programmable logic controller (PLC) installation, interfacing, operation, and programming. Students learn how to connect advanced PLCs in a typical industrial PLC network utilizing Ethernet, DH+, RS232 and RIO communication paths. Data sharing and distributed PLC programming techniques along with fundamentals of touch panel programming and operation are studied. Prerequisite: 32-414-319.

32-414-321 Interfacing Sensors with Computer Controls 3 credits

Applies various sensors to analog input modules of programmable controllers and to A/D converters for computer systems. Prerequisites: 32-414-316, 32-421-392, 32-462-301, 32-463-318.

32-420-330 Metal Processes 1 2 credits

This basic metalworking course is designed to provide the student with instruction in metalworking processes. Instructional units include safety, layout and measuring, machining, oxy-acetylene welding, brazing and cutting, arc welding and properties of metals.

32-462-303 Industrial Equipment Mechanisms 1 1 credit

32-462-304 Industrial Equipment Mechanisms 2 1 credit

Studies basic principles of physics specific to electro-mechanical systems. Emphasizes measurement, lubrication, energy, power, machines and fluid and chemical properties, as well as installation, timing and synchronization of machine drive components. Includes hands-on disassembly and assembly of industrial components.

For 32-462-303, Co-requisite: 31-462-340.

For 32-462-304, Prerequisite: 32-462-303.

32-462-306 Industrial Fluid Power 1 1 credit

32-462-341 Industrial Fluid Power 2 2 credits

Fundamentals of fluid power (hydraulic and pneumatic) and its components as well as principles, functions and terminology. Covers the application of basic fluid power systems to various machines along with maintenance and troubleshooting. Pre- or Co-requisite: Machine Tool Math 1, 31804381; or equivalent (College Math, 10804107; or COMPASS Algebra score of 40 or higher). Note: Program students must take both courses in the same semester.

32-462-311 Industrial Maintenance Mechanic 1 3 credits

Emphasizes basic tools used for maintenance. Presents information on lock out/tag out, confined space and safe rigging practices, manufacturing machine types and operations, torque, metal properties and hardness, gaskets, pumps, gears, motors, pulleys and alignment. Prerequisites: 32-414-316, 32-421-392, 32-462-301, and 32-462-318.

32-462-313 Maintenance Management 2 credits

Emphasizes maintenance management and quality control techniques to give maintenance students an understanding of their roles in an organization. Covers maintenance record keeping, parts ordering and shop operation. Pre- or Co-requisites: Machine Tool Math 1, 31-804-381 (or equivalent); Elementary Algebra with Apps, 10-804-110, OR College Mathematics, 10-804-107; OR COMPASS Algebra score of 40 or higher.

32-462-314 Manufacturing Systems, Application and Control 3 credits

Introduces computer control systems and fundamentals of motion control. Presents programmable logic controllers (PLCs) along with design, integration and troubleshooting techniques.

Prerequisite: 32-414-319.

32-462-316 Industrial Fluid Distribution Systems 2 credits

Covers installation and repair of fluidic systems. Includes fittings, thread cutting, pipe sweating, roll grooving, solder, plastic cementing, repair equipment and tools. Pumps, valves, water supply systems and fire protection distribution systems covered. Pre- or Co-requisite: Elementary Algebra with Apps, 10-804-110; OR College Mathematics, 10-804-107; OR COMPASS Algebra score of 40 or higher.

32-462-317 Building Service Maintenance 3 credits

Covers safety, schematics, wall framing, electrical services, insulation, drywall applications, painting, floor applications, roofing and siding applications. Includes the study of appropriate applications of material to facilities. Prerequisite: 32-462-301 and 32-462-318.

32-462-322 Industrial Maintenance Mechanic 2 3 credits

Emphasizes on-the-job installing, troubleshooting and maintaining manufacturing systems with special focus on automated systems. This course is completed as an internship. Prerequisite: 32-462-311.

32-462-335 Metal Processes for Maintenance 2 credits

Includes machine shop operations, sheet metal work, soldering and brazing, forging and heat treatment, grinding, tool sharpening, metal casting and other metal applications as related to industrial machinery repair. Prerequisite: 32-420-330 or instructor consent.

32-462-340 Industrial Electricity and Controls 4 credits

Studies motors, transformers and various electro-mechanical devices to enhance AC power distribution and control topics. Introduces programmable logic controllers in the on/off mode. Prerequisites: 32-414-316, 32-421-392, 32-462-301, and 32-462-318. Note: Industrial Maintenance program students need to take this course with 32-462-303.

Career Potential:

- Facility Maintenance
- Production Maintenance
- Lead Production Mechanic
- Heating and Air Conditioning Technician

With additional education and/or work experience, graduates may find employment as:

- Maintenance Manager
- Production Supervisor

More detailed and updated information on this program may be available at: madisoncollege.edu. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

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Rev. 02/15

Industrial Mechanic-HVAC

Program Number: 31-462-3

One-Year Technical Diploma

Manufacturing Program Cluster

School of Applied Science, Engineering, and Technology

Program offered at Madison Campuses

For information call:

(608) 246-6800 or (800) 322-6282 Ext. 6800

About the Program

The Industrial Mechanic - HVAC Program provides students with the knowledge and skills necessary to assemble, install, troubleshoot, repair and modify machinery facilities environments. This program also has extensive training in refrigeration/HVAC and EPA certification.

Admissions Requirements

To review admissions program requirements and application processing dates visit the programs website at:

<http://madisoncollege.edu/program-info/industrial-mechanic-hvac>.

Requirements for Graduation

Students must meet two 2.0 GPA requirements to graduate: 1.) GPA for entire program must be 2.0 or above; 2.) GPA of combined occupational courses (462) must be 2.0 or above.

Courses

10-623-100 Safety for Industry 1 credit
Comprehensive safety program designed for anyone involved in general industry. Specifically devised for safety directors, foremen, and field supervisors; the program provides complete information on OSHA compliance issues.

10-623-200 Interpreting Engineering Drawings 2 credits
Basic principles of engineering drawings and manufacturing procedures. Through interpretation and sketching, students learn to visualize the part, section or assembly. Uses drawings pertinent to the trades with examples in Welding, Facilities, Piping and Instrumentation (P & ID's), Sheet Metal, Equipment Manuals (technical documents, installation/repair manuals), Electrical Symbols, and Fluid Power Symbols.

32-401-308 Heating and Air Conditioning 1 3 credits
Covers basic environmental equipment maintenance. Presents applications of HVAC components, refrigeration controls, condensers, hydronics, boilers, heat exchangers, dampers, compressors, plumbing, pumps, measurement, blowers and preventive maintenance/repair. Also covers EPA CFC certification.

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

FIRST YEAR		Credits	Hrs/week
First Semester			Lec-Lab
10-623-100	Safety for Industry	1	0-2
10-623-200	Interpreting Engineering Drawings	2	0-4
32-414-316	DC/AC Circuit.....	3	3-3
32-420-330	Metal Processes 1	2	3-1
32-462-306	Industrial Fluid Power 1	1	1-1
32-401-308	Heating and Air Conditioning 1.....	3	4-2
32-462-317	Building Service Maintenance	3	4-2
10-804-107	College Math.....	3	4-0
Semester Total		18	
Second Semester			
32-401-315	Building Management Systems.....	3	4-2
32-462-303	Industrial Equipment Mechanisms 1	1	1-1
32-462-340	Industrial Electricity and Controls	4	4-4
32-462-316	Industrial Fluid Distribution Systems	2	2-2
32-401-309	Heating and Air Conditioning 2.....	3	4-2
10-103-133	Excel - Beginning	1	0.25-1.5
10-104-189	Customer Relations	2	3-0

△ Meets for 6 weeks.
□ Meets for 11 weeks.

Note: Students are placed in English or mathematics courses based on their scores on the COMPASS or ASSET test or on completion of the appropriate prerequisites.

Courses (continued)

32-401-309 Heating and Air Conditioning 2 3 credits
Advanced environmental equipment installation and maintenance course which puts the theory learned in Heating and Air Conditioning, 32-462-308, into practice including boiler competencies. Prerequisite: 32-462-308.

32-401-315 Building Management Systems 3 credits
Studies computer-based energy and building control systems in detail. Includes sensing devices, pneumatic and otherwise, as well as basic energy efficiency calculating. Also presents and discusses cost- and energy-saving ideas and plans. Prerequisite: 32-401-308.

32-414-316 DC/AC Circuits 3 credits
Introduces the practical DC/AC concepts including electrical quantities and components and measurement instruments for AC and DC circuits used in commercial, industrial, and sustainable energy fields. Students analyze and construct circuits and measure voltage, current, resistance and power for both AC and DC sources. Covers fundamentals of NEC wiring, soldering and relay ladder logic. Pre- or Co-requisite: Machine Tool Math 1, 10804110, OR College Math, 10804107, OR COMPASS Algebra score of 40 or higher.

32-420-330 Metal Processes 1 2 credits
This basic metalworking course is designed to provide the student with instruction in metalworking processes. Instructional units include safety, layout and measuring, machining, oxy-acetylene welding, brazing and cutting, arc welding and properties of metals.

32-462-303 Industrial Equipment Mechanisms 1 1 credit
Studies basic principles of physics specific to electro-mechanical systems. Emphasizes measurement, lubrication, energy, power, machines and fluid and chemical properties, as well as installation, timing and synchronization of machine drive components. Includes hands-on disassembly and assembly of industrial component.

32-462-306 Industrial Fluid Power 1 1 credit
Fundamentals of fluid power (hydraulic and pneumatic) and its components as well as principles, functions and terminology. Covers the application of basic fluid power systems to various machines along with maintenance and troubleshooting. Pre- or Co-requisite: Elementary Algebra with Apps, 10-804-110; OR College Mathematics, 10-804-107; OR COMPASS Algebra score of 40 or higher.

32-462-317 Building Service Maintenance 3 credits
Covers safety, schematics, wall framing, electrical services, insulation, drywall applications, painting, floor applications, roofing and siding applications. Includes the study of appropriate applications of material to facilities. Prerequisites: 32-462-301 and 32-462-318.

32-462-316 Industrial Fluid Distribution Systems 2 credits
Covers installation and repair of fluidic systems. Includes fittings, thread cutting, pipe sweating, roll grooving, solder, plastic cementing, repair equipment and tools. Pumps, valves, water supply systems and fire protection distribution systems covered. Pre- or Co-requisite: Elementary Algebra with Apps, 10-804-110; OR College Mathematics, 10-804-107; OR COMPASS Algebra score of 40 or higher.

32-462-340 Industrial Electricity and Controls 4 credits
Studies motors, transformers and various electro-mechanical devices to enhance AC power distribution and control topics. Introduces programmable logic controllers in the on/off mode. Prerequisites: 32-414-316, 32-421-392, 32-462-301, and 32-462-318. Note: Industrial Maintenance program students must take this course with 32-462-303.

Career Potential:

- Facility Maintenance
- Heating and Air Conditioning Technician
- Section 608 CFC EPA Certified Refrigerant Handler
- Furnace & A/C Installer
- Furnace & A/C Repairman
- Building Automation Systems Operator and Repairman for DDC systems

More detailed and updated information on this program may be available at: madisoncollege.edu. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

Madison Area Technical College provides equal opportunity in education and employment.

Risk Management & Insurance Certificate

Program Number: 90-162-1

Certificate

Business and Marketing Program Cluster

School of Business and Applied Arts

Program offered at Madison Campuses

For information call:

(608) 246-6003 or (800) 322-6282 Ext. 6003

About the Certificate

Wisconsin is home to approximately 250 insurance companies, the 4th highest in the country ranking insurance 5th in Wisconsin's Top 5 Industries and paying wages approximately 45% higher than other industries in the state. Nationally, the industry anticipates needing to fill 400,000 positions by the year 2020.

There is a lack of educational programs in Wisconsin geared toward a quick and easy method to prepare students for employment in insurance. To address this need, this Risk Management & Insurance Certificate utilizes accelerated learning to provide students with a basic understanding of the insurance industry and its products to enable entrance into the insurance workforce.

This series of courses is a great addition for those who already have earned an Associate's or Bachelor's Degree and would like a specific focus in risk management and insurance. Students who have experience in a different industry and are interested in a career change will find this program is an efficient and effective method to gaining insurance knowledge. Students working towards an Associate Degree in programs in any focus in Business, IT, Criminal Justice, Construction or Auto Body will also find this certificate an efficient pathway to using their degree in the insurance industry.

Many of the courses also qualify for continuing education credits for licensed intermediaries in Wisconsin. Students searching for continuing education credits will find these certificate courses very beneficial.

Admissions Requirements

To review admissions program requirements and application processing dates visit the programs website at: <http://madisoncollege.edu/program-info/insurance-certificate>.

Unique Requirements for Completion

The certificate will be awarded upon completion of the requirements with a minimum of a 2.0 grade average and no course grade lower than a C. The certificate will be awarded when completion of all requirements is verified after the semester the last course has been completed.

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

Courses	Hrs/week	
	Credits	Lec-Lab-Occ
10-162-125 Introduction to Business Insurance Contracts.....	3	3-0
10-162-126 Introduction to Loss Investigations	3	3-0
10-162-131 Introduction to Employee Benefits OR	1	1-0
10-162-136 Current Issues in Risk Management & Insurance...(1)	1	1-0
10-162-133 Managing Business Risks	3	3-0
10-162-135 Detecting Employee Fraud	3	3-0
10-162-140 Risk Management and Insurance Internship.....	2	0-0-8
Total	15	

(*Students earning an Associate Degree in Finance or Business Management may use these courses towards an Emphasis in Risk Management & Insurance. See your program curriculum sheet or advising report for specific choices.)



Courses

10-162-125 Introduction to Business

Insurance Contracts 3 credits

This course provides an understanding of the insurance protection any business should have. Whether you plan on owning your own business or managing a business or department, this course provides valuable information. A comprehensive study of policy language and coverage for Commercial General Liability, Commercial Auto, Worker's Compensation, Crime, Bonds, Umbrella, the BOP and Commercial Property is reviewed.

10-162-126 Introduction to Loss Investigations 3 credits

The claim function, factors influencing claims, the steps involved in analyzing, negotiating, and litigating first and third party claims, and the basics of property and liability losses will be covered in this class.

10-162-131 Introduction to Employee Benefits 1 credit

This course focuses on the principles of individual and group health coverage, disability insurance, individual and group life insurance, paying life insurance proceeds, ownership rights, beneficiaries, and supplemental benefits of life insurance.

10-162-133 Managing Business Risks 3 credits

This course will serve as a core. Risk Management is a foundational concept in insurance today. The legal foundations of loss exposures, the risk management process, and risk management programs will be discussed for all areas.

10-162-135 Detecting Employee Fraud 3 credits

The course will cover all of the major methods employees use to commit occupational fraud. Students learn how and why occupational fraud is committed as well as how the conduct can be detected, deterred, investigated and resolved.

10-162-136 Current Issues in Risk Management & Insurance 1 credit

This course focuses on trends and issues facing the Risk Management and Insurance Industries. Presentations on current topics, and tours of facilities, are provided by Risk Management firms and Insurance organizations. Locations vary each semester but travel is required with this course. Check with the instructor for current travel plans and costs prior to enrolling.

10-162-140 Risk Management & Insurance Internship 2 credits

Provides an opportunity for students to apply insurance and/or risk management skills in a real life business environment. These paid internships may be in insurance agencies, insurance companies or other risk management settings. Duties may vary depending on the opportunity. Written assignments affiliated with the internship will also be required. Reserved for students enrolled in Insurance & Risk Management studies either in the Certificate program or as a focus in their current major. Students must have completed at least one degree credit insurance course.

More detailed and updated information on this program may be available at: madisoncollege.edu. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

Madison Area Technical College provides equal opportunity in education and employment.

Interdisciplinary Global Studies Certificate

Program Number: 90-140-1

Certificate

Center for International Education

Program offered at Madison Campus

For information call:

(608) 246-6201 or (800) 322-6282 Ext. 6201

About the Certificate

The Interdisciplinary Global Studies Certificate is designed to integrate student learning across disciplines and programs and foster connections between disciplinary learning, world languages, and study abroad experiences. This summative experience will have students earn a certificate to document their international experience and credentials.

The certificate requires a total of 15 credits in international coursework, at least three credits of world language study, and an education abroad experience. Language study is a mandatory component of the certificate but can only total eight credits out of 15. This results in competency in both international studies and world languages.

Students must also participate in an education abroad experience. A wide range of options, including short term programs, is provided to meet the needs of community college students with family and work responsibilities. Alternatively, students with more flexible schedules can complete certificate requirements through a semester-abroad experience.

Certificate Application Process

Admissions Requirements

To review admissions program requirements and application processing dates visit the programs website at:

<http://madisoncollege.edu/program-info/interdisciplinary-global-studies-certificate>.

Unique Requirements for Completion

The certificate will be awarded upon completion of the requirements with a minimum of a 2.0 grade average and no course grade lower than a C. The certificate will be awarded when completion of all requirements is verified after the semester the last course has been completed.

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

Requirements

15 Credits

World Language 3-8

Additionally, non-credit enrichment courses in French, Spanish, Chinese, German, Arabic, etc., may count as one credit each.

Study Abroad 3-12

Every student must have one education abroad experience/course or courses taken in a semester-abroad experience.

Internationalized Courses 0-9

Complete up to 9 credits of course work to bring the certificate total to 15 credits.

Certificate Outcomes

The following learning outcomes have been identified for the Global Studies Certificate:

1. Cultural Awareness

Demonstrate awareness of and sensitivity to other cultures' norms, practices, and actions while at the same time recognizing, acknowledging, and appreciating individual difference.

2. Intercultural Communications

Communicate effectively and respectfully with diverse peoples in intercultural teams and work groups.

3. World Languages

Speak and write in another language while recognizing and respecting the importance of language diversity (all languages) in global communication.

4. International Travel

Exhibit preparedness/readiness for international travel including the abilities to assess and respond to health and safety risks and the ability to adapt to unpredictable situations.

5. Global Citizenship

Recognize self as a part of global culture by demonstrating awareness of the interdependence of global systems; by understanding how the U.S. may be perceived world-wide; by solving problems with multiple perspectives and variables; and by making globally responsible decisions.

6. Global Work Skills

Apply global perspectives to the work place through the use of appropriate technology for international communication, the ability to collaborate with diverse co-workers, the ability to adapt to variances between cultures in occupational processes, procedures and practices, and through recognizing the impact of the global economy on various occupations and professions.

More detailed and updated information on this program may be available at: madisoncollege.edu. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.



Courses

		Credits	Hrs/week Lec-Lab
World Languages			
10-802-102	Introductory Spanish Conversation 1	3	3-0
20-802-211	Spanish 1	4	5-0
20-802-212	Spanish 2	4	5-0
20-802-213	Spanish 3	4	4-0
20-802-214	Spanish 4	4	4-0
20-802-215	Spanish 5	3	3-0
20-802-221	French 1	4	5-0
20-802-222	French 2	4	5-0
20-802-223	French 3	4	4-0
20-802-224	French 4	4	4-0
20-802-230	Introduction to Mandarin Chinese 1	3	3-0
20-802-231	Introduction to Mandarin Chinese 2	3	3-0
20-802-240	Introduction to Modern Arabic 1	3	3-0
20-804-241	Introduction to Modern Arabic 2	3	3-0

Study Abroad

Courses

99-809-214	International Econ Study Abroad	3	3-0
99-140-101	Traditional Healing in Cross-Cultural Contexts	3	3-0
10-104-187	Global Studies Seminar	3	3-0
10-109-182	Global Studies Seminar	3	3-0
10-140-112	Renewable Energy for the Developing World	3	3-0
20-802-216	Spanish Culture and Civilizations	4	4-0
20-806-290	Renewable Energy International Development	3	3-0

Also, courses taken as semester-abroad. (Appear as 99-xxx-xxx on transcripts.)

For other courses or opportunities, contact the Center for International Studies Office.

Opportunities

Canterbury, England
Carlow, Ireland
Cuernavaca, Mexico
Salzburg, Austria
San Jose, Costa Rica
Seville, Spain
Sydney, Australia
Xi'an, China

Internationalized Courses

801 English

20-801-207	World Indigenous Literatures	3	3-0
20-801-215	British Literature 1	3	3-0
20-801-216	British Literature 2	3	3-0
20-801-219	Western World Literature 1	3	3-0
20-801-220	Western World Literature 2	3	3-0
20-801-223	Peace, Conflict, and Literature: The Arts of the Contact Zone	3	3-0
20-801-224	Intro to African Literature	3	3-0
20-801-226	Special Topics in International Literature	3	3-0
20-801-230	Classical Mythology	3	3-0
20-801-231	19 th Century Russian Literature in Translation	3	3-0
20-801-232	20 th Century Russian/Soviet Literature in Translation	3	3-0
20-801-252	World Issues Journalism	4	4-0

803 History

20-803-204	Making of Modern Europe	3	3-0
20-803-205	Europe and the Modern World	3	3-0
20-803-206	British History Since 1688	3	3-0
20-803-220	History of Western Civilization 1	3	3-0
20-803-221	History of Western Civilization 2	3	3-0
20-803-224	History of the Sub-Saharan Africa	3	3-0
20-803-225	The World in the Twentieth Century	3	3-0
20-803-226	East Asian Civilization	3	3-0
20-803-229	Vietnam and America: 1945-Present	3	3-0
20-803-230	Women in History	3	3-0
20-803-233	Gender & Women's History in Cultural Representations	3	3-0
20-803-234	Gender & Women's History in Global Perspectives	3	3-0

Internationalized Courses cont'd

805 Music

20-805-207	World Music	3	3-0
20-805-232	International Arts Intensive-Music	3	3-0
20-805-279	Afro-Caribbean Ensemble	1	0-2
20-805-280	Afro-Caribbean Ensemble 2	1	0-2

806 Natural Science

20-806-280	Environmental Issues	4	4-0
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807 Physical Education

20-807-260	Martial Arts Fundamentals	1	2-0
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809 Social and Behavioral Science

20-809-214	Introduction to International Economics	3	3-0
20-809-220	American Foreign Policy	3	3-0
20-809-223	International Relations	3	3-0
20-809-228	Environmental Economics	3	3-0
20-809-243	Introduction to Comparative Politics	3	3-0
20-809-244	Russian Politics	3	3-0
20-809-245	Latin American Politics	3	3-0
20-809-246	African Politics	3	3-0
20-809-247	East Asian Politics	3	3-0
20-809-251	Sociology of Middle East and North Africa	3	3-0
20-809-263	East/West World View – Liberal Arts Transfer	3	3-0
20-809-278	Introduction to Buddhism	3	3-0
20-809-280	General Anthropology	3	3-0
20-809-281	Archaeology and the Prehistoric World	3	3-0
20-809-283	Cultural Anthropology and Human Diversity	3	3-0
20-809-285	The Anthropology of Myth, Magic and Religion	3	3-0
20-809-286	Anthropology of Globalization and Multiculturalism	3	3-0

810 Speech/Drama

20-810-232	International Arts Intensive-Theater	3	3-0
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815 Art

20-815-200	Introduction to Art History	3	3-0
20-815-210	Art History: The Modern Era	3	3-0
20-815-211	Women in the Arts	1	1-0

xxx Other Disciplines

10-102-150	Introduction to International Business	3	3-0
10-104-180	International Marketing	3	3-0
10-104-183	International Business in Fashion	2	0-4
10-110-171	Law and Contemp. Problems: Immigration Law	3	3-0
10-140-107	Perspectives on Study Abroad	1	1-0
10-162-136	Current Issues in Risk Management and Insurance	1	1-0
10-316-112	Cuisines of the World	4	1-6
10-304-129	History of Interior Design	3	3-0
10-543-291	Community Cultural Health Care	3	1-6
31-538-303	Cultural Competency and the Medical Setting	2	4-0
31-538-304	Introduction to Interpreting in Spanish	2	6-0
31-538-305	Intro to Basic Translation in Spanish	2	6-0
60-303-652	Foreign/Ethnic Foods	0.6	1-5

Interior Design

Program Number: 10-304-1

Associate in Applied Arts Degree

Applied Arts Program Cluster

School of Business and Applied Arts

Program offered at Madison Campuses

For information call: (608) 246-6003 or
(800) 322-6282 Ext. 6003

About the Program

The Interior Design Program prepares students for entry-level residential design and sales positions in retail stores and design studios, and commercial design positions in office dealerships and corporate facilities.

Graduates of the Interior Design Program are employed by interior design firms, furniture stores, flooring stores, paint and decorating centers, building centers, kitchen and bath design firms, office dealerships and corporations as in-house interior designers.

Interior designers confer with clients to determine the purpose and function of the environment, style preferences, budget, types of construction, equipment to be installed and other factors that affect planning interior environments. They integrate findings with their knowledge of interior design and formulate plans to be practical, aesthetic and conducive to intended purposes, such as raising productivity or improving the life style of occupants. Interior designers advise clients on interior design factors, such as space planning, the layout and utilization of furnishings and equipment, color schemes and coordination, and the selection of interior components. They estimate material requirements and costs, prepare drawings and materials for presentation to the client for approval and coordinate the implementation of all phases of the design project.

Successful interior designers are creative and visually sensitive individuals who enjoy working with people and the components of interior design. They are organized and creative with the ability to follow through on all tasks, as well as effective sales-oriented communicators.

Admissions Requirements

To review admissions program requirements and application processing dates visit the programs website at: <http://madisoncollege.edu/program-info/interior-design>.

Note: Students starting this program in a spring semester will need a minimum of 5 semesters to complete the program due to some courses being offered fall only or spring only. These students (and students going part-time) are advised to use the Planner in their student center account to map out the order in which to take the required courses semester by semester, taking into account any limited semesters courses are offered and any pre-requisites for the sequence of courses. Students should also contact the Program Director, Jessica Feggstad, jfeggstad@madisoncollege.edu for advising prior to and during the program.

Note: Software used in the interior design program is on a Windows PC platform. Students are required to have a working knowledge of Microsoft Windows operating system (computer literacy, proficiency with a mouse, file management). If students need to build skill in this area, students should enroll in a Windows course prior to beginning program courses.

Note: Students planning to transfer to a 4-year college may wish to enroll in college transfer 20-level general education course equivalent to the 10-level courses listed. It is recommended that you check with your future school for the best options of transferability of general education courses.

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

		Credits	Hrs/week Lec-Lab-Clin
Summer (prior to start of program)			
10-304-100	Survey of the Interior Design Profession**	1	1-0-0
First Semester			
10-304-102	Fundamentals of Design**	3	1-4-0
10-304-104	Basic Architectural Drawing**	3	2-3-0
10-304-105	Building and Furniture Construction**	3	2-2-0
10-304-107	Interior Design Textiles**	3	2-2-0
10-801-195	Written Communication	3	3-0-0
10-804-123	Math with Business Applications	3	3-0-0
Semester Total		18	
Second Semester			
10-304-120	Advanced Architectural Drawing**	2	1-3-0
10-304-125	Residential Design 1**	3	2-3-0
10-304-127	Materials and Finishes**	2	1-2-0
10-304-129	History of Interior Design**	3	3-0-0
10-304-161	Visual Communication for Interior Design	3	2-0-3
10-801-198	Speech	3	3-0-0
Semester Total		16	
Third Semester			
10-304-133	Commercial Design**	5	3-6-0
10-304-135	Lighting**	2	1-2-0
10-304-142	Sales and Professional Practice**	3	2-2-0
10-304-146	Trends and Issues in Interior Design**	2	1-2-0
10-801-196	Oral/Interpersonal Communication	3	3-0-0
10-809-199	Psychology of Human Relations	3	3-0-0
Semester Total		18	
Fourth Semester			
10-304-132	Kitchen and Bath Design**	5	3-6-0
10-304-143	Residential Design 2**	3	2-3-0
10-304-145	Interior Design Internship**	2	0-0-8
10-304-147	Portfolio Development**	1	0-0-3
10-809-166	Introduction to Ethics: Theory & Application	3	3-0-0
10-809-197	Contemporary American Society	3	3-0-0
Semester Total		17	

**Courses only offered at the Truax campus, and in the semester shown and only during the daytime hours.

Note: Students are placed in English or mathematics courses based on their scores on the COMPASS or ASSET test or on completion of the appropriate prerequisites.

Note: All program courses require a "C" or better for graduation and prerequisite completion.



Program Courses

10-304-100 Survey of Interior Design Profession 1 credit

This course is required for all students accepted into the Interior Design Program and is taken during the summer prior to their fall enrollment. Focuses on the interior design profession, the personal qualities and aptitudes of the interior designer, and the broad range of career opportunities and tasks performed. The course also offers students an introduction to the requirements and demands of the program and a career in the interior design industry.

10-304-102 Fundamentals of Design 3 credits

The focus of this course is on the principles and elements of design that form the conceptual basis from which to solve and evaluate design problems. Prerequisite: 10-304-100.

10-304-104 Basic Architectural Drawing 3 credits

This course will introduce students to basic manual and computer-aided drawing for interior design. Students will learn how to properly use equipment and produce two-dimensional drawings. Prerequisite: 10-304-100.

10-304-105 Building and Furniture Construction 3 credits

This course will provide the student with a foundation of knowledge to interpret blueprints and identify building construction methods, materials, and systems. Students will also examine building codes and basic furniture construction, as well as performance features. Prerequisite: 10-304-100.

10-304-107 Interior Design Textiles 3 credits

Students study fibers, yarns, fabric construction and terminology, finishes, and performance criteria. Emphasizes specification of textiles for interior design applications. Prerequisite: 10-304-100.

10-304-120 Advanced Architectural Drawing 2 credits

This course will build on the Basic Architectural Drawing coursework and further develop student skills in computer-aided drawing techniques for interior design. Computer-aided three-dimensional modeling will also be introduced and explored as a method to communicate design. Prerequisite: 10-304-104.

10-304-125 Residential Design 1 3 credits

This course builds knowledge of human factors, codes, and professional standards as they relate to residential furniture arrangements and interior spaces. Students apply their knowledge of the elements and principles of design, architectural drawing standards, and building construction methods to design and document functional and aesthetically pleasing residential interiors. Prerequisites: 10-304-102, 10-304-104, and 10-304-105.

10-304-127 Materials and Finishes 2 credits

This course will focus on interior finish products and their applications. Students will learn to specify and calculate quantities of materials using industry standards. Prerequisites: 10-304-107.

10-304-129 History of Interior Design 3 credits

This course will focus on periods of art, artists, architecture and furniture from Egyptian times to the 21st century. Prerequisite: 10-304-100.

10-304-132 Kitchen and Bath Design 5 credits

Focuses on designing kitchens and baths, including the specification of cabinets, countertops, appliances, fixtures, materials and finishes. In addition, students develop the CAD skills necessary to produce typical project drawings and documentation for a kitchen design problem using a kitchen cabinet software package. Prerequisites: 10-304-125, 10-304-127, and, 10-304-135.

10-304-133 Commercial Design 5 credits

Focuses on the design, specification and documentation of commercial office spaces using conventional furniture and open office systems. Students apply their knowledge of materials, finishes, furniture, lighting and building construction through all phases of the design process. In addition, students further develop CAD skills necessary to produce project documentation and presentations for a comprehensive commercial design problem. Prerequisites: 10-304-120, 10-304-125, 10-304-127, and 10-304-161, and concurrent enrollment in 10-304-135.

10-304-135 Lighting 2 credits

This course focuses on light sources, luminaire options, the quality and quantity factors of lighting specification, and the lighting plan and schedule. Students design and specify lighting plans. Prerequisite: 10-304-120 and 10-304-125.

10-304-142 Sales and Professional Practice 3 credits

Covers essential interior design business practices and procedures, including business formations, fees, contracts, project management, business forms and record keeping. Professional work conduct and interior design sales techniques are also covered. Co-requisite: 10-304-133, or instructor consent.

10-304-143 Residential Design 2 3 credits

Students demonstrate their accumulated skills through the resolution of a comprehensive residential design project. Prerequisites: 10-304-129, 10-304-133, 10-304-142, and 10-304-146; Co-requisite: 10-304-132 and 10-304-147.

10-304-145 Interior Design Internship 2 credits

Provides an opportunity to gain practical work experience through supervised internships at an approved job site to gain practical knowledge of the interior design skills learned in the classroom. Prerequisite: instructor consent and must be in final year of the Interior Design program.

10-304-146 Trends and Issues in Interior Design 2 credits

This course provides the opportunity for students to learn and investigate current topics and trends in the interior design field. Topics include Universal Design and Aging-in-Place principles and Sustainability/Green Design practices. Prerequisite: 10-304-125 and 10-304-127.

10-304-147 Portfolio Development 1 credit

This course will provide students with direction and guidance to develop and prepare a professional portfolio for both the Annual Portfolio Show and employment. Students will investigate a variety of manual and digital methods allowing for effective representation of their skills and strengths. Co-requisite: 10-304-143, and mandatory participation in Annual Portfolio Show.

10-304-161 Visual Communication For Interior Design 3 credits

Students develop skills in manually sketching and rendering three-dimensional drawings of interior spaces to communicate design concepts. Additionally, students create professional-quality presentation boards and visual displays using both physical and digital methods. Prerequisites: 10-304-102 and 10-304-104.

Career Potential:

- Interior Designer
- In-Home Design/Sales Consultant
- Interior Design Consultant
- Kitchen and Bath Designer
- Corporate Designer
- Facilities Planner
- Sales Representative

More detailed and updated information on this program may be available at: madisoncollege.edu. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

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Rev. 07/15

Internet Developer Certificate

Program Number: 90-152-11

Certificate

Information Technologies Program Cluster

School of Business and Applied Arts

Program offered at Madison Campuses

For information call: (608) 246-6003
(800) 322-6282 ext. 6003

About the Program

The Internet Developer Certificate is a sequence of connected courses exploring Internet software development, including HTML, Javascript, DHTML, CSS and AJAX. This certificate is open to anyone with experience programming in a modern web programming language such as Java, C#, or PHP.

Pre-Admission Skills

Certificate students are expected to have some experience in software development.

Admission Requirements

To review program admission requirements and application processing dates, visit the program's website at: <http://madisoncollege.edu/program-info/internet-developer>.

Requirements for Completion

The certificate will be awarded upon completion of the requirements with a minimum of a 2.0 grade average and no course grade lower than a C. The certificate will be awarded when completion of all requirements is verified after the semester the last course has been completed.

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

Courses	Credits	Hrs/week	
		Lec	Lab
10-152-120 Website Development	3	2	2
10-152-121 Advanced Website Development	3	2	2
10-152-168 AJAX and JavaScript Website Development**	3	2	2

*Offered fall semester only
**Offered spring semester only

Courses

10-152-120 Website Development 3 credits
Teaches the fundamentals and techniques of developing business websites using XHTML-compliant HTML5. Topics include webpage design, tables, image manipulation, image maps, forms, cascading style sheets (CSS) and an introduction to JavaScript in conjunction with forms. All work is done directly with HTML5. Prerequisite: working knowledge of Microsoft Windows (computer literacy, proficiency with a mouse, file management).

10-152-121 Advanced Website Development 3 credits
Provides the student with experience in the design and implementation of business Internet websites using advanced command syntax. Topics include: JavaScript, browser object models, dynamic HTML, advanced cascading style sheets (CSS), XML, document type definitions, extensible stylesheet language transformations (XSLT), and XML schemas. Prerequisite: grade of C or better in 10-152-120.

10-152-168 AJAX and JavaScript Website Development 3 credits
AJAX turns static web pages into interactive applications, allowing you to deploy rich-client applications. Course covers the basics of DHTML, JavaScript, and the XMLHttpRequest call. Students learn how to add JavaScript and AJAX to existing programs, and design new applications to exploit the power of Web 2.0. Students learn the three layers of AJAX framework, and when (and how) to use each. Students learn how to create rich clients, use visual effects, add client-side validation, and handle forms. Prerequisites (grade of C or better): 10-152-121; and one of the following programming courses: 10-152-107, 10-152-112, 10-152-143, 10-152-167, or 10-152-189.

More detailed and updated information on this program may be available at: madisoncollege.edu. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

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Madison Area Technical College
**Information Technology—
IT-Android Applications
Development Certificate**

Effective: 2015-2016

Program Number: 90-152-12

Certificate

Information Technology Program Cluster
School of Business and Applied Arts
Program offered at Madison Campuses

For information call: (608) 246-6003 or
(800) 322-6282 Ext. 6003

About the Certificate

This certificate is designed to prepare information systems professionals to develop Android applications. **Students use the Android SDK environment for development.** Two classes are used to teach students the necessary skills to make them successful in Android Applications Development.

Admissions Requirements

To review program admission requirements and application processing dates, visit the program’s website at:
<http://madisoncollege.edu/program-info/it-android-applications-development-certificate>.

Requirements for Completion

The certificate will be awarded upon completion of the requirements with a minimum of a 2.0 grade average and no course grade lower than a C. The certificate will be awarded when completion of all requirements is verified after the semester the last course has been completed.

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

Courses	Credits	Hrs/week	
		Lec	Lab
10-152-189 Android Applications Development*	3	2	2
10-152-195 <u>Advanced Android Development**</u>	<u>3</u>	<u>2</u>	<u>2</u>
Total	6		

Note: All Information Technology courses require a grade of C or better in order to receive the certificate.

*Offered fall semester only
**Offered spring semester only

Courses

10-152-189 Android Applications Development 3 credits

This course introduces developing applications for Android devices. All the required software is free, including the Android emulator. It is not necessary to own an Android device, though the applications developed in the course can be deployed to one. Basic familiarity with Java and Eclipse (or willingness to learn them quickly) is assumed. After preliminaries with Google Docs and Google Maps, we take up Android layout and input widgets, both in XML and programmatically; menus and dialogs; gesture detection; graphics and the Android drawing API; database access with SQLite and file IO; location-based services (geo-location); and device dependency issues. Prerequisite: must be accepted in the Android Applications Development Certificate, or have obtained a grade of ‘C’ or better in one of the following: 10-152-111 or 10-152-190.

10-152-195 Advanced Android Development 3 credits

This is a second course in Android application development, assuming a background in Android development and taking up more advanced topics, including geo location, web services and network programming generally, game programming, HTML 5 strategies, and graphics programming. More complex user interfaces are considered, including multi-activity applications. Prerequisite: 10-152-189.

More detailed and updated information on this program may be available at: madisoncollege.edu. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

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Madison Area Technical College Information Technology — CISCO Certification Professional (CCP)

Effective: 2015-2016

Program Number: 90-150-5

Certificate

Information Technology Program Cluster

School of Business and Applied Arts

Program offered at Madison Campuses

For information call:
(608) 246-6003 or (800) 322-6282 Ext. 6003

About the Certificate

This certificate is designed to prepare networking professionals to test for various Cisco certifications, such as the Cisco Certified Network Professional (CCNP). To prepare students for the Cisco certification exams, classes will have both a lecture and lab component to build experience with the topics covered on the certification exam.

Pre-Program Requirements: Experience with Cisco routers and switches is an absolute requirement for this certificate track, and CCNA certification is strongly recommended.

Admission Requirements

To review program admission requirements and application processing dates, visit the program's website at:
<http://madisoncollege.edu/program-info/it-cisco-certification-professional>.

Requirements for Completion

The certificate will be awarded upon completion of the requirements with a minimum of a 2.0 grade average and no course grade lower than a C. The certificate will be awarded when completion of all requirements is verified after the semester the last course has been completed.

No more than 50% of the certificate credits may be through advanced standing.

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted.

Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

Courses	Hrs/week	
	Credits	Lec-Lab
First Semester		
10-150-155 CCNP Route	3	2-2
Second Semester		
10-150-151 <u>Advanced Networking Topics</u>	3	2-2
Total	6	

Note: All Information Technology courses require a grade of C or better in order to receive the certificate.

Courses

10-150-155 CCNP Route **3 credits**
This class will focus on preparing the student to take the Cisco CCNP Route certification exam. Topics will cover the current version of the certification exam such as: Network Principles, Layer 2 and 3 Technologies, VPN Technologies, and Infrastructure Security and Services. This class is set up as a remote access instructor-led class.

10-150-151 Advanced Networking Topics **3 credits**
This class introduces more advanced networking topics from the CCNP exams, such as: Implementing VLAN based solutions with secure layer 2 and layer 3 services, implementing High Availability in a LAN and WAN, implementing QoS on converged networks, specific IP QoS mechanisms for implementing the DiffServ QoS model, wireless security and basic wireless management. Quality of Service (QoS) will be used to design and implement a structure to prioritize voice and data applications across the network. Wireless will include mobility between lightweight access points. Troubleshooting and teamwork will be emphasized. Prerequisite: VOIP Convergence Fundamentals, 10-150-150.

Career Potential

- Network Engineer
- Network Administrator

More detailed and updated information on this program may be available at: madisoncollege.edu. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

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Rev. 07/15



Madison Area Technical College
 Information Technology —
**CISCO Certified Entry Networking
 Technician (CCENT)**

Effective: 2015-2016

Program Number: 90-150-4

Certificate

Information Technology Program Cluster

School of Business and Applied Arts

Program offered at Madison Campuses

For information call:
(608) 246-6003 or (800) 322-6282 Ext. 6003

About the Certificate

this certificate is designed to prepare students for the starting of the Cisco certification. Students will learn networking concepts and implement a small network with appropriate addresses and services. Students enrolling in the CCENT certificate will be able to meet these needs, thereby taking advantage of this growing segment of the economy. Two courses are used to teach students the necessary skills to make them successful in the field of data networking. Please note: completion of the CCENT certificate courses prepares students to test for the CCENT certification.

Admission Requirements

To review program admission requirements and application processing dates, visit the program's website at:
<http://madisoncollege.edu/program-info/it-cisco-certified-entry-networking-technician>.

Requirements for Completion

The certificate will be awarded upon completion of the requirements with a minimum of a 2.0 grade average and no course grade lower than a C. The certificate will be awarded when completion of all requirements is verified after the semester the last course has been completed.

No more than 50% of the certificate credits may be through advanced standing.

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

Courses	Credits	Hrs/week	
		Lec	Lab
10-150-121 Intro to Cisco Networking.....	3.....	2	2
10-150-122 Cisco Networking 2.....	3.....	2	2
Total	6		

Note: All Information Technology courses require a grade of C or better in order to receive the certificate.

Courses

10-150-121 Intro to Cisco Networking 3 credits
 This is an introductory course that introduces the architecture, structure, function and components of computer networks. Dynamic and static routing will be introduced. Students will learn technology concepts with the support of interactive media and apply and practice this knowledge through a series of hands-on and simulated activities. NOTE: must take Cisco Networking 2, 10-150-122, within one year of completion of Intro to Cisco Networking, 10-150-121. Prerequisite: working knowledge of Microsoft Windows (computer literacy, proficiency with a mouse, file management).

10-150-122 Cisco Networking 2 3 credits
 Students learn how to configure a router and a switch for basic functionality. Students will be able to configure and troubleshoot routers and switches and resolve common issues with protocols, virtual WANs and inter-VLAN routing in both IPv4 and IPv6. NOTE: Must follow Intro to Cisco Networking, 10150121, within one year.

More detailed and updated information on this program may be available at: madisoncollege.edu. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

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Madison Area Technical College Information Technology — CISCO Certified Networking Associate (CCNA)

Effective: 2015-2016

Program Number: 90-150-2

Certificate

Information Technology Program Cluster

School of Business and Applied Arts

Program offered at Madison Campuses

For information call: (608) 246-6003 or
(800) 322-6282 Ext. 6003

About the Certificate

This certificate is designed to prepare information systems professionals for the field of network management. Design, configuration, maintenance and trouble shooting of both local area networks (LANs) and Wide Area Networks (WANs) are becoming increasingly important as the number of networking devices continues to grow. Students enrolling in the CCNA certificate will be able to meet these needs, thereby taking advantage of this growing segment of the economy. Four courses are used to teach students the necessary skills to make them successful in the field of data networking. Please note: completion of the CCNA certificate courses prepares students to test for the CCNA certification.

Admission Requirements

To review program admission requirements and application processing dates, visit the program's website at:

<http://madisoncollege.edu/program-info/it-cisco-certified-networking-associate-certificate-ccna>.

Requirements for Completion

The certificate will be awarded upon completion of the requirements with a minimum of a 2.0 grade average and no course grade lower than a C. The certificate will be awarded when completion of all requirements is verified after the semester the last course has been completed.

No more than 50% of the certificate credits may be through advanced standing.

More detailed and updated information on this program may be available at madisoncollege.edu. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

Madison Area Technical College provides equal opportunity in education and employment.

Rev. 04/15

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

Courses	Hrs/week	
	Credits	Lec-Lab
10-150-121 Intro to Cisco Networking.....	3.....	2-2
10-150-122 Cisco Networking 2.....	3.....	2-2
10-150-123 Cisco Networking 3*.....	3.....	2-2
10-150-124 Cisco Networking 4*.....	3.....	2-2

Note: All Information Technology courses require a grade of C or better in order to receive the certificate.

*Offered fall semester only

**Offered spring semester only

Courses

10-150-121 Intro to Cisco Networking 3 credits

This is an introductory course that introduces the architecture, structure, function and components of computer networks. Dynamic and static routing will be introduced. Students will learn technology concepts with the support of interactive media and apply and practice this knowledge through a series of hands-on and simulated activities. NOTE: must take Cisco Networking 2, 10-150-122, within one year of completion of Intro to Cisco Networking, 10-150-121. Prerequisite: working knowledge of Microsoft Windows (computer literacy, proficiency with a mouse, file management).

10-150-122 Cisco Networking 2 3 credits

Students learn how to configure a router and a switch for basic functionality. Students will be able to configure and troubleshoot routers and switches and resolve common issues with protocols, virtual WANs and inter-VLAN routing in both IPv4 and IPv6. NOTE: Must follow Intro to Cisco Networking, 10-150-121, within one year.

10-150-123 Cisco Networking 3 3 credits

Students learn how to apply the internetworking skills from Intro to Cisco Networking 2 by building networks using EIGRP, multi-area OSPF, Spanning Tree Protocol, and Link Aggregation. NOTE: must follow Cisco Networking 2, 10-150-122, within one year. Prerequisite: Intro to Cisco Networking, 10-150-121 (must follow 10-150-121 within one year).

10-150-124 Cisco Networking 4 3 credits

Students learn how to connect networks using WAN circuits, including PPP, Frame Relay and Broadband Solutions. Students will also implement NAT and become introduced to Virtual Private Networks and network monitoring. NOTE: must follow Cisco Networking 2, 10-150-122, within one year.



CompTIA A+ Computer Essentials Certificate

Program Number: 90-154-2

Certificate

Information Technology Program Cluster

School of Business and Applied Arts

Program offered at Madison Campuses

For information call: (608) 246-6003 or
(800) 322-6282 Ext. 6003

About the Certificate

IT-CompTIA A+ Computer Essentials Certificate provides instruction for information systems professionals and programming students for the area of computer hardware and software. Topics covered include installation, maintenance and trouble shooting of personal computer hardware, operating systems, and software.

Please note: completion of the IT-CompTIA A+ Computer Essentials Certificate (two) courses prepares the student to test for the CompTIA A+ certification.

Admission Requirements

To review program admission requirements and application processing dates, visit the program's website at:
<http://madisoncollege.edu/program-info/it-comp-tia-a-computer-essentials-certificate>.

Requirements for Completion

The certificate will be awarded upon completion of the requirements with a minimum of a 2.0 grade average and no course grade lower than a C. The certificate will be awarded when completion of all requirements is verified after the semester the last course has been completed.

No more than 50% of the certificate credits may be through advanced standing.

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

Courses	Hrs/week	
	Credits	Lec-Lab
10-154-189 Computer Hardware Essentials	3	2-2
10-154-191 A+ IT Technician	3	2-2

Note: All Information Technology courses require a grade of C or better in order to receive the certificate.

Courses

10-154-189 Computer Hardware Essentials 3 credits

This course presents a comprehensive overview of computer system fundamentals and an introduction to operating systems. Students working through hands-on activities and labs gain skills in assembling components, install, configure and maintain devices, PCs and operating system software, understand the basics of networking and security, laptops, printers, and properly diagnose, resolve common hardware and software issues while applying troubleshooting skills. CompTIA's A+ Certification is a widely accepted IT industry standard certification for PC technology for an entry-level IT professional. This course prepares students for CompTIA's A+ 220-801 exam. Prerequisite: working knowledge of Microsoft Windows (computer literacy, proficiency with a mouse, and file management).

10-154-191 A+ IT Technician 3 credits

This course presents a comprehensive advanced exposure to computer operating systems and hardware. Students working through hands-on activities and labs gain skills in assembling components, install, configure and maintain devices, PCs and software, understand the basics of networking and security/forensics, laptops, printers and properly diagnose, document, resolve common hardware and operating system software issues while applying troubleshooting skills. Students also gain understanding of appropriate customer support; understand the basics of virtualization, desktop imaging, and deployment. CompTIA's A+ Certification is a widely accepted IT industry standard certification for PC technology for an entry-level IT professional. This course prepares student for CompTIA's A+ 220-802 exam. Prerequisite: 10-154-189.

More detailed and updated information on this program may be available at:
madisoncollege.edu. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

Madison Area Technical College provides equal opportunity in education and employment.

Rev. 04/15



Fundamentals of Networking

Program Number: 31-150-6

Technical Diploma

Information Technology Program Cluster

School of Business and Applied Arts

Program offered at Madison Campuses

For information call:

(608) 246-6003 or (800) 322-6282 Ext. 6003

About the Program

The Fundamentals of Networking embedded technical diploma program focuses on quickly developing the skills necessary for employment in the networking field. This program is structured in a manner that allows a full-time student to achieve these skills within one year. The courses in this program include all of the first year technical networking courses within the Associate in Information Technology Network Specialist program and can also be applied toward that program.

Admission Requirements

To review program admission requirements and application processing dates, visit the program's website at:

<http://madisoncollege.edu/program-info/it-fundamentals-networking>.

NOTE: Students starting this program in a spring semester will need a minimum of 3 semesters to complete the program due to some courses being offered fall only or spring only. These students (and students going part-time) are advised to use the Planner in their student center account to map out the order in which to take the required courses semester by semester, taking into account any limited semesters courses are offered and any pre-requisites for the sequence of courses.

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

		Credits	Hrs/week Lec-Lab
First Semester			
10-107-111	Exploration of Information Technology.....	1	1-0
10-150-160	IT Security Awareness.....	1	1-0
10-150-121	Intro to Cisco Networking.....	3	2-2
10-154-184	Windows Client.....	3	2-2
10-154-189	Computer Hardware Essentials.....	3	2-2
10-801-195	Written Communication.....	3	3-0
Second Semester			
10-150-122	Cisco Networking 2.....	3	2-2
10-154-122	IT Service Concepts.....	3	2-2
10-154-171	Windows Server 1.....	3	2-2
10-154-190	Linux Server.....	3	2-2
Semester Total		12	

* Offered fall semester only

** Offered spring semester only

Graduation Requirement

Note: All Information Technology courses require a grade of C or better in order to graduate.

Note: Students are assessed for correct placement in English or mathematics courses based on their scores on the COMPASS test or on completion of the appropriate prerequisite/s. Additionally, there may be courses in other subject areas that may use COMPASS scores as prerequisites when reading, writing, math, or critical thinking competencies are required.

Program Courses

10-107-111 Exploration of Information Technology 1 credit

Introduces students to the various careers available in the vast field of Information Technology and examines the Network Specialist, Mobile Applications Developer, Web Software Developer, Computer Systems Administration Specialist, Help Desk Specialist, and Security Specialist career paths. Students create an individualized career path plan as the capstone project for the course. Prerequisite: working knowledge of Microsoft Windows (computer literacy, proficiency with a mouse, file management) and experience sending and receiving email.

10-150-121 Intro to Cisco Networking 3 credits

This is an introductory course that introduces the architecture, structure, function and components of computer networks. Dynamic and static routing will be introduced. Students will learn technology concepts with the support of interactive media and apply and practice this knowledge through a series of hands-on and simulated activities. Prerequisite: working knowledge of Microsoft Windows (computer literacy, proficiency with a mouse, file management). NOTE: must take Cisco Networking 2, 10-150-122, within one year of completion of Intro to Cisco Networking, 10-150-121.

10-150-122 Cisco Networking 2 3 credits

Students learn how to configure a router and a switch for basic functionality. Students will be able to configure and troubleshoot routers and switches and resolve common issues with protocols, virtual WANs and inter-VLAN routing in both IPv4 and IPv6. Prerequisite: 10-150-121. NOTE: must follow Intro to Cisco Networking, 10150121, within one year.

10-150-160 IT Security Awareness 1 credit

Provides a basic survey of the importance of IT security awareness and data confidentiality. This course walks users through basic aspects of information security in a very broad, easy to understand way and explains the value of securing data. The course will also present best practices in access control and password policies.

10-154-122 IT Service Concepts 3 credits

This course is an introduction to the broad range of topics than an entry-level user support specialist is expected to know. The course delves into the kinds of knowledge, skills and abilities they need to find employment in the support industry. Students develop skills to handle troubleshooting and problem solving, successfully communicate with technology users, determine a user's specific needs, and train end-users, as well as handle budgeting and other management priorities. Course addresses awareness of the evolution of IT support and best practices of the ITIL framework.

10-154-171 Windows Server 1 3 credits

Gain the skills necessary for supporting and configure a Windows Network infrastructure including name resolution, file and print services, and remote access. Learn the practical skills required to troubleshoot and monitor network problems while preparing for Microsoft MCTS Exam 70-642.

Prerequisites: 10-101-111, 10-154-184, and 10-150-121.

10-154-184 Windows Client 3 credits

Learn how to install, configure and administer a Windows desktop operating system. Work in a computer laboratory setting to develop the real-world expertise needed to set up and support the Windows desktop environment. As you progress through topics including Windows installation, hardware device configuration and establishing network connectivity, you are also preparing for a current Microsoft Exam. As an added bonus you will learn the operation of VMware Workstation.

10-154-189 Computer Hardware Essentials 3 credits

This course presents a comprehensive overview of computer system fundamentals and an introduction to operating systems. Students working through hands-on activities and labs gain skills in assembling components, install, configure and maintain devices, PCs and operating system software, understand the basics of networking and security, laptops, printers, and properly diagnose, resolve common hardware and software issues while applying troubleshooting skills. CompTIA's A+ Certification is a widely accepted IT industry standard certification for PC technology for an entry-level IT professional. This course prepares students for CompTIA's A+ 220-801 exam. Prerequisite: working knowledge of Microsoft Windows (computer literacy, proficiency with a mouse, file management).

10-154-190 Linux Server 3 credits

Introduces Linux with a focus on system administration skills. Topics include installation, file and directory management, command execution, input/output redirection and pipes, shell scripts, network services, security, troubleshooting and the X Window system. Prerequisite: 10-154-184 or concurrent enrollment.

Career Potential:

Entry level positions can include:

- Network Control Operator
- Network Support Technician
- Network Support Services
- Network Technician
- Network Specialist
- Network Professional
- Networking Services
- Assistant LAN Manager
- Assistant LAN Administrator
- Assistant Network Administrator

With experience, networking specialist can find work as:

- LAN Manager
- LAN Administrator
- Network Support Services Manager
- Network Engineer
- Network Administrator
- Web Designer

Upper Management positions can include:

- Networking Manager
- Manager of Voice/Data Networks
- Intranet (sic) Designer
- Data Communications Analyst
- Director of Networks

More detailed and updated information on this program may be available at: madisoncollege.edu. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

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Information Technology— Fundamentals of Network Security

Technical Diploma

Information Technology Program Cluster

School of Business and Applied Arts

Program offered at Madison Campuses

For information call:

(608) 246-6003 or (800) 322-6282 Ext. 6003

About the Program

The Fundamentals of Network Security Embedded Technical Diploma program focuses on quickly developing the skills necessary for employment in the network security field. This program is structured in a manner that allows a full-time student to achieve these skills within one year. The courses in this program include all of the first year technical security courses within the Associate in Information Technology – Network Security Specialist program and can also be applied toward that program.

Admission Requirements

To review program admission requirements and application processing dates, visit the program's website at:

<http://madisoncollege.edu/program-info/it-fundamentals-network-security>.

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

		Hrs/week	
		Credits	Lec-Lab
First Semester			
10-107-111	Exploration of Information Technology.....	1	1-0
10-150-160	IT Security Awareness.....	1	1-0
10-150-121	Intro to Cisco Networking.....	3	2-2
10-154-184	Windows Client.....	3	2-2
10-154-190	Linux Server.....	3	2-2
10-801-195	Written Communication.....	3	3-0
Second Semester			
10-150-127	System Administration Security.....	3	3-0
10-150-194	Firewall/VPN Technologies.....	3	2-2
10-152-109	Python Programming.....	3	2-2
10-154-171	Windows Server 1.....	3	2-2

*Offered fall semester only

**Offered spring semester only

Note: All Information Technology courses require a grade of C or better in order to graduate.

Note: Students are assessed for correct placement in English or mathematics courses based on their scores on the COMPASS test or on completion of the appropriate prerequisite/s. Additionally, there may be courses in other subject areas that may use COMPASS scores as prerequisites when reading, writing, math, or critical thinking competencies are required.



Program Courses

10-107-111 Exploration of Information Technology 1 credit

Introduces students to the various careers available in the vast field of Information Technology and examines the Network Specialist, Mobile Applications Developer, Web Software Developer, Computer Systems Administration Specialist, Help Desk Specialist, and Security Specialist career paths. Students create an individualized career path plan as the capstone project for the course.

10-150-121 Intro to Cisco Networking 3 credits

This is an introductory course that introduces the architecture, structure, function and components of computer networks. Dynamic and static routing will be introduced. Students will learn technology concepts with the support of interactive media and apply and practice this knowledge through a series of hands-on and simulated activities. NOTE: must take Cisco Networking 2, 10-150-122, within one year of completion of Intro to Cisco Networking, 10-150-121. Prerequisite: working knowledge of Microsoft Windows (computer literacy, proficiency with a mouse, file management).

10-150-127 System Administration Security 3 credits

This class provides students with the tools they need to perform common administrative functions in some of the most popular scripting environments. The class will examine PHP in the context of an Apache webserver, and then it will examine using GNU BASH and Microsoft PowerShell scripting from the command line to complete every day administrative functions. Tools include: Bash, PHP, Apache, and PowerShell.

10-150-160 IT Security Awareness 1 credit

Provides a basic survey of the importance of IT security awareness and data confidentiality. This course walks users through basic aspects of information security in a very broad, easy to understand way and explains the value of securing data. The course will also present best practices in access control and password policies.

10-150-194 Firewall/VPN Technologies 3 credits

This course introduces the security student to the common technologies used for defending the perimeter of a modern business network. In depth hands-on exercises are used to instruct the student in the related technologies including NAT, PAT, ACL construction, application gateways, and stateful packet inspection. The student additionally learns a common implementation of both site-to-site and remote access VPN's. The student must demonstrate the ability to implement a basic firewall that simulates the perimeter of a basic business network. Tools include: ASA5512-X, Cisco Any-Connect VPN client. Prerequisite: 10-150-121

10-152-109 Python Programming 3 credits

This is an introductory scripting course in the Python programming language. Topics include: basic programming techniques, I/O, data processing, file manipulation, program control logic, functions, modules, and exception handling.

10-154-171 Windows Server 1 3 credits

Gain the skills necessary for supporting and configuring a Windows server including the installation and configuration of Windows Active Directory environment. Configure and deploy network services such as DHCP and DNS. Learn the practical skills required to create and implement Group Policy and configure security policies while preparing for Microsoft MCSA Exam 70-410. Prerequisites: 10-107-111, 10-150-121, and 10-154-184.

10-154-184 Windows Client 3 credits

Learn how to install, configure and administer a Windows desktop operating system. Work in a computer laboratory setting to develop the real-world expertise needed to set up and support the Windows desktop environment. As you progress through topics including Windows installation, hardware device configuration and establishing network connectivity, you are also preparing for a current Microsoft Exam. As an added bonus you will learn the operation of VMWare Workstation.

10-154-190 Linux Server 3 credits

Introduces Linux with a focus on system administration skills. Topics include installation, file and directory management, command execution, input/output redirection and pipes, shell scripts, network services, security, troubleshooting and the X Window system. Prerequisite: 10-154-184 (or concurrent enrollment).

10-801-195 Written Communication 3 credits

Develops writing skills which includes prewriting, drafting, revising, and editing. A variety of writing assignments is designed to help the learner analyze audience and purpose, research and organize ideas, and format and design documents based on subject matter and content. Also develops critical reading and thinking skills through the analysis of a variety of written documents. Prerequisite: appropriate scores on ACT, COMPASS.

Career Potential:

Entry level positions can include:

- Network Control Operator
- Network Support Technician
- Network Support Services
- Network Technician
- Network Specialist
- Network Professional
- Networking Services
- Assistant LAN Manager
- Assistant LAN Administrator
- Assistant Network Administrator

With experience, networking specialist can find work as:

- LAN Manager
- LAN Administrator
- Network Support Services Manager
- Network Engineer
- Network Administrator
- Web Designer

Upper Management positions can include:

- Networking Manager
- Manager of Voice/Data Networks
- Intranet (sic) Designer
- Data Communications Analyst
- Director of Networks
- Network Security Specialist
- Cyber Security Professional

More detailed and updated information on this program may be available at: madisoncollege.edu. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

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Madison Area Technical College
Information Technology—
HDI Customer Service Analyst Certificate

Effective: 2015-2016

Program Number: 90-154-5

Certificate

Information Technology Program Cluster

School of Business and Applied Arts

Program offered at Madison Campuses

For information call:
(608) 246-6003 or (800) 322-6282 Ext. 6003

About the Certificate

This certificate provides instruction for information systems professionals and programming students for the area of technical support customer services skills. Topics include understanding of how to assess customer needs to provide exceptional customer service, role of customer service analyst, process of quality service management delivered through best practices, critical thinking skills to resolve incidents, effective communication strategies, handling conflict, and developing service attitude.

Please note: completion of the IT-HDI Customer Service Analyst (two courses) prepares the student to test for the Help Desk Institute (HDI) Support Center Analyst certification exam.

Admission Requirements

To review program admission requirements and application processing dates, visit the program's website at:
<http://madisoncollege.edu/program-info/it-hdi-customer-service-analyst-certificate>.

Requirements for Completion

The certificate will be awarded upon completion of the requirements with a minimum of a 2.0 grade average and no course grade lower than a C. The certificate will be awarded when completion of all requirements is verified after the semester the last course has been completed.

Courses

10-154-122 IT Service Concepts 3 credits

This course is an introduction to the broad range of topics than an entry-level user support specialist is expected to know. The course delves into the kinds of knowledge, skills and abilities they need to find employment in the support industry. Students develop skills to handle troubleshooting and problem solving, successfully communicate with technology users, determine a user's specific needs, and train end-users, as well as handle budgeting and other management priorities. Course addresses awareness of the evolution of IT support and best practices of the ITIL framework.

10-154-146 Help Desk Tools & Techniques 3 credits

Explores the customer service roles and responsibilities of an IT support professional. Examines the support software options for tracking and managing data: log, track, and escalate calls; resolve problems using a knowledge base. Covers documentation/reporting tools, asset management, change management, incident management, hotline support, performance reports, trends, and career resources. Includes hands-on, real-world projects using current Help Desk software.

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

		Hrs/week	
Courses		Credits	Lec-Lab
10-154-122	IT Service Concepts*	3	2-2
10-154-146	Help Desk Tools and Techniques*	3	2-2
Total		12	

***Offered fall semester only**

Notes:

Courses taken prior to fall 2013 will not count towards this certificate.

All Information Technology courses require a grade of C or better in order to receive the certificate.

Career Potential:

- Customer Support Specialist
- Customer Call Center Specialist

More detailed and updated information on this program may be available at: madisoncollege.edu. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

Madison Area Technical College provides equal opportunity in education and employment.



Madison Area Technical College
**Information Technology—
 Help Desk Support
 Specialist**

Effective: 2015-2016

Program Number: 31-154-7

Technical Diploma

Information Technology Program Cluster

School of Business and Applied Arts

Program offered at Madison Campuses

**For information call: (608) 246-6003 or
 (800) 322-6282 Ext. 6003**

About the Program

The Help Desk Support Specialist program prepares students to interact with PC users providing first-line technical support resolving software, hardware and system problems. Students are trained to install, support, and maintain hardware and software and to ensure that all calls and problems are dealt with quickly and effectively. Installing, configuring, and troubleshooting software and hardware; basic network concepts, supporting new technologies, repairing workstations and performing upgrades are taught in a hands-on class atmosphere. Students gain an understanding of how a help desk functions and the role of customer service in today's world of technology. Students participate in on-the-job help desk internship/work experience with instructor supervision in area companies. Career opportunities exist in all areas of the country. This program may be used to help prepare for CompTIA A+ computer troubleshooting certification.

Admission Requirements

To review program admission program requirements and application processing dates, visit the program's website at: <http://madisoncollege.edu/program-info/it-help-desk-support-specialist>.

NOTE: Students starting this program in a spring semester will need a minimum of 3 semesters to complete the program due to some courses being offered fall only or spring only. These students (and students going part-time) are advised to use the Planner in their student center account to map out the order in which to take the required courses semester by semester, taking into account any limited semesters courses are offered and any pre-requisites for the sequence of courses.

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

		Hrs/week	
		Credits	Lec-Lab
First Semester			
10-103-136	Word-Intermediate	1.....	0.25-1.5
10-107-111	Exploration of Information Technology.....	1.....	1-0
10-150-160	IT Security Awareness.....	1.....	1-0
10-154-122	IT Service Concepts	3.....	2-2
10-154-146	Help Desk Tools and Techniques*.....	3.....	2-2
10-154-189	Computer Hardware Essentials.....	3.....	2-2
10-801-195	Written Communication	3.....	3-0
Second Semester			
10-103-139	Excel-Intermediate.....	1.....	0.25-1.5
10-107-175	Preparation for an IT Career	1.....	1-0
10-154-147	Supporting Emerging Technologies**.....	3.....	2-2
10-154-148	Help Desk Specialist Internship**.....	3.....	2-2
10-154-184	Windows Client.....	3.....	2-2
10-154-191	A+ IT Technician.....	3.....	2-2

*Offered fall semester only

**Offered spring semester only

Graduation Requirement

Note: All Information Technology courses require a grade of C or better in order to graduate.

Note: Students are assessed for correct placement in English or mathematics courses based on their scores on the COMPASS test or on completion of the appropriate prerequisite/s. Additionally, there may be courses in other subject areas that may use COMPASS scores as prerequisites when reading, writing, math, or



Program Courses

10-103-139 Excel-Intermediate 1 credit
Work with financial functions, data tables, amortization schedules, hyperlinks, lists, templates, and multiple worksheets and workbooks. Prerequisite: 10-103-133 or equivalent.

10-103-136 Word-Intermediate 1 credit
Illustrate documents with graphics; create and format web pages; add hyperlinks; merge Word documents; sort and filter records; work with Styles and Templates; use Outline view to develop multi-page documents, adding footnotes/endnotes, a Table of Contents, cross-references, sections and an Index. Prerequisite: 10-103-137.

10-107-111 Exploration of Information Technology 1 credit
Introduces students to the various careers available in the vast field of Information Technology and examines the Network Specialist, Mobile Applications Developer, Web Software Developer, Computer Systems Administration Specialist, Help Desk Specialist, and Security Specialist career paths. Students create an individualized career path plan as the capstone project for the course. Prerequisite: working knowledge of Microsoft Windows (computer literacy, proficiency with a mouse, file management).

10-107-175 Preparation for an IT Career 1 credit
Introduction to planning and organizing a job search in information technology. Activities include the development of a personalized job search plan, correspondence and portfolio. Prerequisite (grade of C or better): students must have completed all IT courses in the first semester.

10-150-160 IT Security Awareness 1 credit
Provides a basic survey of the importance of IT security awareness and data confidentiality. This course walks users through basic aspects of information security in a very broad, easy to understand way and explains the value of securing data. The course will also present best practices in access control and password policies.

10-154-122 IT Service Concepts 3 credits
This course is an introduction to the broad range of topics than an entry-level user support specialist is expected to know. The course delves into the kinds of knowledge, skills and abilities they need to find employment in the support industry. Students develop skills to handle troubleshooting and problem solving, successfully communicate with technology users, determine a user's specific needs, and train end-users, as well as handle budgeting and other management priorities. Course addresses awareness of the evolution of IT support and best practices of the ITIL framework.

10-154-146 Help Desk Tools and Techniques 3 credits
Explores the customer service roles and responsibilities of an IT support professional. Examines the support software options for tracking and managing data: log, track, and escalate calls; resolve problems using a knowledge base. Covers documentation/reporting tools, asset management, asset management, change management, incident management, hotline support, performance reports, trends, and career resources. Includes hands-on, real-world projects using current Help Desk software.

10-154-147 Supporting Emerging Technologies 3 credits
Solve information technology problems using troubleshooting techniques (maintain and repair computers) for new technologies that are emerging and are in place for support. Discussion of what is the technology, functions of the technology, and support issues. Explore the concepts of technical problems beyond basic troubleshooting by working the Windows operating systems in a virtual environment. Hardware and Software may be required for the virtualized environment. Prerequisites: 10-154-189 and 10-154-191 (or concurrent enrollment).

10-154-148 Help Desk Specialist Internship 3 credits
Learn the "value-added" importance of an IT support professional by performing at least 216 hours at area IT Support or Help Desks operations. Receive on-the-job Help Desk environment work experience with instructor supervision in area companies. By consent of instructor, a special project or being part of the WolfPack Techies support team may be substituted for the internship. Prerequisites: 10-107-111, 10-154-122, 10-154-146, 10-154-189 and completion of or concurrent enrollment in 10-107-175, 10-154-147, and 10-154-191.

10-154-184 Windows Client 3 credits
Learn how to install, configure and administer a Windows desktop operating system. Work in a computer laboratory setting to develop the real-world expertise needed to set up and support the Windows desktop environment. As you progress through topics including Windows installation, hardware device configuration and establishing network connectivity, you are also preparing for a current Microsoft Exam. As an added bonus you will learn the operation of VMWare Workstation.

10-154-189 Computer Hardware Essentials 3 credits
This course presents a comprehensive overview of computer system fundamentals and an introduction to operating systems. Students working through hands-on activities and labs gain skills in assembling components, install, configure and maintain devices, PCs and operating system software, understand the basics of networking and security, laptops, printers, and properly diagnose, resolve common hardware and software issues while applying troubleshooting skills. CompTIA's A+ Certification is a widely accepted IT industry standard certification for PC technology for an entry-level IT professional. This course prepares students for CompTIA's A+ 220-801 exam. Prerequisite: working knowledge of Microsoft Windows (computer literacy, proficiency with a mouse, and file management).

10-154-191 A+ IT Technician 3 credits
This course presents a comprehensive advanced exposure to computer operating systems and hardware. Students working through hands-on activities and labs gain skills in assembling components, install, configure and maintain devices, PCs and software, understand the basics of networking and security/forensics, laptops, printers and properly diagnose, document, resolve common hardware and operating system software issues while applying troubleshooting skills. Students also gain understanding of appropriate customer support; understand the basics of virtualization, desktop imaging, and deployment. CompTIA's A+ Certification is a widely accepted IT industry standard certification for PC technology for an entry-level IT professional. This course prepares the student for CompTIA's A+ 220-802 exam. Prerequisite: 10-154-189.

10-801-195 Written Communication 3 credits
Develops writing skills which includes prewriting, drafting, revising, and editing. A variety of writing assignments is designed to help the learner analyze audience and purpose, research and organize ideas, and format and design documents based on subject matter and content. Also develops critical reading and thinking skills through the analysis of a variety of written documents.

Career Potential:

- Customer Support Specialist
- Customer Call Center Specialist
- End User Support Specialist
- Help Desk Professional
- Microcomputer Application Specialist
- PC Support Technician
- Software Technician
- Technical Help Desk Support
- Technical Specialist

More detailed and updated information on this program may be available at: madisoncollege.edu. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

Madison Area Technical College provides equal opportunity in education and employment.

Rev. 02/15

Information Technology— Information Security Certificate

Certificate

Information Technology Program Cluster

School of Business and Applied Arts

Program offered at Madison Campuses

For information call: (608) 246-6003 or
(800) 322-6282 Ext. 6003

About the Certificate

The Madison College Information Security Certificate program allows the current IT professional to add security tools and techniques to their current skillset. Learning to assess, design, implement, and test security solutions with the goal of protecting information assets and the infrastructure of a business or organization is the primary focus.

Students will learn the basic operation and common threats encountered in a modern network environment along with many of the tools and techniques used to detect, analyze, remediate, and defend against them. Extensive hands-on labs build practical experience in configuring a variety of network operating systems, firewalls, and intrusion detection systems (IDS). Heavy emphasis on scripting and the usage of many of the most common open source Linux-based tools is applied throughout the lab materials.

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

FIRST YEAR		Hrs/week
First Semester	Credits	Lec-Lab
10-150-129	Web Application Security*	3.....2-2
10-150-164	Penetration Testing**	3.....2-2
10-150-185	Computer Forensics*	3.....2-2
10-150-196	Intrusion Detection*	3.....2-2
10-150-127	Systems Administration Security	3.....2-2

*Offered fall semester only

**Offered spring semester only

Note: All Information Technology courses require a grade of C or better in order to receive the certificate.

Pre-Program Requirements

A strong working knowledge of Linux and Python is an absolute requirement for this certificate track. One to two years of experience working in the IT field is highly recommended.

Admissions Requirements

To review program admission requirements and application processing dates, visit the program's website at:

<http://madisoncollege.edu/program-info/it-information-security-certificate>.

Requirements for Completion

The certificate will be awarded upon completion of the requirements with a minimum of a 2.0 grade average and no course grade lower than a C. The certificate will be awarded when completion of all requirements is verified after the semester the last course has been completed.

Courses

10-150-129 Web Application Security 3 credits

This course provides a broad overview of the tools and techniques commonly used for web application security testing. In depth hands-on exercises are used to instruct the student in the proper selection and application of a given tool for the intended task. Also included are basic strategies for documenting and reporting on the outcome of the test. The student must demonstrate the ability to plan, and execute a basic web security audit in an environment that simulates a common business or organization. Open Source tools include: The BURP suite, Python, etc... Prerequisite: Grade of C or better in System Administration Security, 10-150-127 and Linux Server, 10-154-190.

10-150-164 Penetration Testing 3 credits

This course provides a broad overview of the tools and techniques commonly used for penetration testing. In depth hands-on exercises are used to instruct the student in the proper selection and application of a given tool for the intended task. Also included are basic strategies for documenting and reporting on the outcome of the test. The student must demonstrate the ability to plan, and execute a basic network security audit in an environment that simulates a common business or organization. Open Source tools include: NMap, Metasploit, Medusa, etc.... Prerequisite: Grade of C or better in Systems Administration Security, 10-150-127, and Linux Server, 10-154-190.

10-150-185 Computer Forensics 3 credits

This course provides a broad overview of computer forensics and investigation tools and techniques. All major personal computer operating system architectures and disk structures will be discussed, as well as what computer forensic hardware and software tools are available. The details of data acquisition, computer forensic analysis, email investigations, image file recovery, investigative report writing, and expert witness requirements. The course provides a range of laboratory and hands-on assignments that teach about theory as well as the practical application of computer forensic investigation. Open Source tools include: The Sleuth Kit, dd, Scalpel, etc.... Prereq: 101503 IT-Network Security Specialist: Grade C or better in Systems Admin. Security, 10-150-127 and Linux Server, 10-154-190. 901503 IT Information Security Certificate: Cert. admission and Grade C or better in Systems Admin. Security, 10-150-127.

10-150-196 Intrusion Detection 3 credits

This course provides a broad overview of the tools and techniques commonly used for detecting network sourced attacks. In depth hands-on exercises are used to instruct the student in the proper selection and application of a given tool for the intended task. Also included are basic strategies for documenting and reporting on detected events. The student must demonstrate the ability to plan, design, and build a network IDS that fulfills the security needs of a common business or organization. Open Source tools include: tcpdump, snort, barnyard, etc... Prerequisites: 101503 IT-Network Security Specialist: Grade C or better in Systems Admin. Security, 10-150-127 and Linux Server, 10-154-190. 901503 IT Information Security Certificate: Cert. admission and Grade C or better in Systems Admin. Security, 10-150-127.

10-150-127 Systems Administration Security 3 credits

This class provides students with the tools they need to perform common administrative functions in some of the most popular scripting environments. The class will examine PHP in the context of an Apache webserver, and then it will examine using GNU BASH and Microsoft PowerShell scripting from the command line to complete every day administrative functions. Tools include: Bash, PHP, Apache, and PowerShell. Prerequisites: Grade of C or better in Windows Client, 10-154-184, and Linux Server, 10-154-190.

Career Potential:

- Information Security Technician
- Cyber Security Professional

More detailed and updated information on this program may be available at: madisoncollege.edu. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

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Rev. 04/15

Madison Area Technical College
**Information Technology—
 iOS Applications
 Development Certificate**

Effective: 2015-2016

Program Number: 90-152-9

Certificate

Information Technology Program Cluster

School of Business and Applied Arts

Program offered at Madison Campuses

For information call: (608) 246-6003 or
 (800) 322-6282 Ext. 6003

About the Certificate

This certificate is designed to prepare information systems professionals to develop iPhone applications. Students use the SDK environment on Apple computers for development. Three classes are used to teach students the necessary skills to make them successful in iOS Applications Development.

Admission Requirements

To review program admission requirements and application processing dates, visit the program's website at:
<http://madisoncollege.edu/program-info/it-iphone-applications-development-certificate>.

Requirements for Completion

The certificate will be awarded upon completion of the requirements with a minimum of a 2.0 grade average and no course grade lower than a C. The certificate will be awarded when completion of all requirements is verified after the semester the last course has been completed.

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

Courses	Credits	Hrs/week	
		Credits	Lec-Lab
10-152-139 iOS Development**	3		2-2
10-152-143 Advanced iOS Development*	3		2-2
10-152-153 Professional iOS Development**	3		2-2
Total	9		

Note: All Information Technology courses require a grade of C or better in order to receive the certificate.

*Offered fall semester only

**Offered spring semester only

Note: The courses are listed in the order to be taken.

Courses

10-152-139 iOS Development 3 credits

The purpose for this course is to prepare students for advanced coursework in The purpose of this course is to introduce students to the development of iOS applications (e.g., iPhone/iPad/iPod devices). Students will be introduced to basic syntax of the C programming language and then focus on Objective-C. Object-orientation using Objective-C will be studied and will include classes, objects & methods, properties, and message sending. Students will also start developing iOS applications using the Xcode IDE and the iOS Simulator. Prerequisite: acceptance in certificate.

10-152-143 Advanced iOS Development 3 credits

Introduces programming simple iOS applications using Cocoa and Objective C. Students will cover basic Objective C concepts, iOS programming basics, and use the SDK environment on Apple Macintosh computers with OS X as a development platform. Design concepts and programming tools will be integrated with an emphasis on developing and deploying iOS applications. Prerequisite: 10-152-139.

10-152-153 Professional iOS Development 3 credits

Focuses on professional features of iOS for applications development. Emphasis on how to keep current with the rapidly changing iOS development environment. Students will be learning the current iOS version SDK and will be practicing techniques for learning and sharing information with classmates. Prerequisite: 10-152-143.



Madison Area Technical College
**Information Technology—
 Java Professional Developer
 Certificate**

Effective: 2015-2016

Program Number: 90-152-7

Certificate

Information Technology Program Cluster

School of Business and Applied Arts

Program offered at Madison Campuses

For information call: (608) 246-6003 or
 (800) 322-6282 Ext. 6003

About the Certificate

This certificate is designed to prepare information systems professionals to use the Java programming language for web development. Three classes are used to teach students the necessary skills to make them successful in Java web development.

Admissions Requirements

To review program admission requirements and application processing dates, visit the program's website at:
<http://madisoncollege.edu/program-info/it-java-professional-developer-certificate>.

Requirements for Completion

The certificate will be awarded upon completion of the requirements with a minimum of a 2.0 grade average and no course grade lower than a C. The certificate will be awarded when completion of all requirements is verified after the semester the last course has been completed.

No more than 50% of the certificate credits may be through advanced standing.

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

Courses	Credits	Hrs/week	
		Lec	Lab
10-152-111 Java Programming**	3	2	2
10-152-112 Advanced Java Programming*	3	2	2
10-152-113 Enterprise Java Programming**	3	2	2
Total	9		

Note: All Information Technology courses require a grade of C or better in order to receive the certificate.

*Offered fall semester only

**Offered spring semester only

Courses

10-152-111 Java Programming 3 credits

Introduces programming and object-oriented design concepts using the Java programming language. Students learn all the Java programming basics and use a simple text editor as a development environment. Design concepts and programming tools will be integrated with an emphasis on practical business solutions. Prerequisite: acceptance into certificate.

10-152-112 Advanced Java Programming 3 credits

Focuses on the server side of application programming for the web. Topics include: Java servlets, database access with JDBC, JavaServer Pages and JavaBeans. A portion of the class deals with application design issues in a web environment. Prerequisite: 10-152-111.

10-152-113 Enterprise Java Programming 3 credits

The third class of the Java sequence explores advanced concepts related to development within an enterprise environment. Topics include: information assurance and programmatic security, unit and regression testing, iterative development, parallelism, data access architectures, programmatic XML, and distributed object architectures. Prerequisite: 10-152-112.



LAMP Open Source Development Certificate

Program Number: 90-152-3

Certificate

Information Technology Program Cluster

School of Business and Applied Arts

Program offered at Madison Campuses

For information call: (608) 246-6003 or
(800) 322-6282 Ext. 6003

About the Certificate

The LAMP Open Source Development certificate provides comprehensive instruction for programming students and professionals who want to expand their skills in open source development. Students learn to develop web applications using open source development tools including the PHP and Ruby programming languages, Rails web development framework, MySQL database management system, Apache Web server, and Linux operating system. This certificate provides hands-on training in designing, planning and implementing web applications.

Admissions Requirements

To review program admission requirements and application processing dates, visit the program's website at:

<http://madisoncollege.edu/program-info/it-lamp-open-source-development-certificate>.

Requirements for Completion

The certificate will be awarded upon completion of the requirements with a minimum of a 2.0 grade average and no course grade lower than a C. The certificate will be awarded when completion of all requirements is verified after the semester the last course has been completed.

Career Potential:

- LAMP Web Developer
- Web Application Developer

More detailed and updated information on this program may be available at: madisoncollege.edu. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

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Rev. 04/15

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

First Semester		Credits	Hrs/week Lec-Lab
10-152-157	Ruby on Rails Development**	3	2-2
10-152-166	PHP Web Development with MySQL**	3	2-2
10-152-167	Advanced PHP and MySQL Web Development*	3	2-2
10-154-190	Linux Server	3	2-2
Semester Total		12	

*Offered fall semester only

**Offered spring semester only

Note: All Information Technology courses require a grade of C or better in order to receive the certificate.

10-152-157 Ruby on Rails Development 3 credits

Introduces dynamic web page development using the Ruby on Rails web development framework. The course will also use the popular MySQL open source database management system. Topics will include an introduction to the Ruby programming language, installing Ruby and Ruby on Rails, an overview of the Rails Framework, ActiveRecord basics, ActionController coding, Action Views, AJAX and the Web 2.0, ActionMailer basics, security, deployment, and scaling. Students will produce a very modern web application that can be adapted to many professional web development needs. Prerequisite: acceptance into certificate and grade of C or better in 10-152-167.

10-152-166 PHP Web Development with MySQL 3 credits

This course introduces the student to dynamic web page development using the PHP programming language. Students will learn how PHP works, how to effectively use many of its powerful features, and how to design and build their own PHP web applications. The popular MySQL open source database management software (DBMS) will also be introduced as a powerful backend for PHP websites. Prerequisite: acceptance into certificate.

10-152-167 Advanced PHP and MySQL Web Development 3 credits

This course prepares the student to implement professional PHP and MySQL web applications. Students will learn advanced techniques for session management, validation, and authentication. Advanced web application features such as shopping carts, content management, web forums and connecting to web services are discussed. Installation and customization of open source PHP web applications is also covered. Prerequisite: grade of C or better in 10-152-166.

10-154-190 Linux Sever 3 credits

Introduces Linux with a focus on system administration skills. Topics include: installation, file and directory management, command execution, input/output redirection and pipes, shell scripts, network services, security, troubleshooting and the X Window system. Prerequisite: acceptance into certificate.



Madison Area Technical College
Information Technology—
Microsoft® Technologies Certificate

Effective: 2015-2016

Program Number: 90-154-7

Certificate

Information Technology Program Cluster

School of Business and Applied Arts

Program offered at Madison Campuses

For information call:

(608) 246-6003 or (800) 322-6282 Ext. 6003

About the Certificate

This certificate is designed for students who have already graduated with a degree in Computer Information Systems, Information Technology, or have significant IT industry work experience to gain the knowledge required to earn the Microsoft® Certified Solutions Associate (MCSA). The MCSA certificate program provides students the skills required to install and administer Windows clients and servers. In addition, the students will obtain the skills required to administer a Windows network environment and learn the fundamentals of Active Directory.

Windows clients and servers are the industry’s most widely used server and client operating systems. The Windows family includes Windows 2012 Server and Windows 8. The tests that constitute the MCSA certification are also applicable to other Microsoft certifications. For further information on this and other Microsoft certifications, see the Microsoft website at: <http://www.microsoft.com/learning>.

Windows® is a registered trademark of Microsoft Corporation.

Admission Requirements

To review program admission requirements and application processing dates, visit the program’s website at: <http://madisoncollege.edu/program-info/it-microsoft-technologies-certificate>.

Requirements for Completion

The certificate will be awarded upon completion of the requirements with a minimum of a 2.0 grade average and no course grade lower than a C. The certificate will be awarded when completion of all requirements is verified after the semester the last course has been completed.

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

		Hrs/week	
Courses		Credits	Lec-Lab
10-154-171	Windows Server 1.....	3	2-2
10-154-172	Windows Server 2*.....	3	2-2
10-154-184	Windows Client.....	3	2-2
10-154-194	Windows Server Pro**.....	3	2-2
Total		12	

Students may also be interested in taking the following related course:

10-154-175	VMware Certified Professional (VCP)**.....	3	2-2
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***Offered fall semester only**

****Offered spring semester only**

Note: All Information Technology courses require a grade of C or better in order to receive the certificate.



Courses

10-154-171 Windows Server 1 3 credits

Gain the skills necessary for supporting and configuring a Windows server including the installation and configuration of Windows Active Directory environment. Configure and deploy network services such as DHCP and DNS. Learn the practical skills required to create and implement Group Policy and configure security policies while preparing for Microsoft MCSA Exam 70-410.

10-154-172 Windows Server 2 3 credits

Gain the skills to support and maintain Windows Active Directory environment. Gain practical experience managing a Windows Active Directory infrastructure with DNS and VPNs. Configure Network Policy Services, Active Directory account policies and advanced Group Policy processes while preparing for Microsoft MCSA exam 70-411. Prerequisite: 10-154-171.

10-154-184 Windows Client 3 credits

Learn how to install, configure and administer a Windows desktop operating system. Work in a computer laboratory setting to develop the real-world expertise needed to set up and support the Windows desktop environment. As you progress through topics including Windows installation, hardware device configuration and establishing network connectivity, you are also preparing for a current Microsoft Exam. As an added bonus you will learn the operation of VMWare Workstation.

10-154-194 Windows Server Pro 3 credits

Complete your education in Windows Server Support - and prepare for Microsoft Exam 70-646-while learning the day to day skills required for supporting Windows web, infrastructure and application servers. Learn the essentials of Windows scripting and batch files and other desktop tools required to profile and monitor Windows Servers. Prerequisite: 10-154-172.

Related Courses

**10-154-175 VMware Certified
Professional (VCP) 3 credits**

This hands-on training course explores installation, configuration, and management of VMware® vSphere™, which consists of VMware ESXi™ and VMware vCenter™ Server. Students are introduced to virtualization and storage management concepts using VMware server virtualization products. Prerequisite: 10-154-172.

Career Potential:

- **Microsoft Certified Information Solutions Associate (MCSA)**

More detailed and updated information on this program may be available at: madisoncollege.edu. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

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Rev. 04/15

Madison Area Technical College
Information Technology—
Microsoft® Visual Studio.NET
Certificate

Effective: 2015-2016

Program Number: 90-152-5

Certificate

Information Technology Program Cluster

School of Business and Applied Arts

Program offered at Madison Campuses

For information call: (608) 246-6003 or
 (800) 322-6282 Ext. 6003

About the Certificate

This certificate is designed to prepare IT professionals to use Microsoft's Visual Studio.NET® applications development suite. Each student takes programming courses in Visual Basic.NET®. In addition, the students take a course in ASP.NET giving them experience and understanding of web services provided with these products. Students also take a course in ActiveX Data Objects (ADO.NET) giving them training in database access that provides platform interoperability and scalable data access. This IT–Microsoft Visual Studio.NET® Certificate allows students to augment skills learned in Information Technology two-year associate degree programs.

Visual Studio.NET® is Microsoft's tool for building next-generation web applications and XML web services. Visual Studio.NET empowers developers to design broad-reach Web applications for any device and any platform. In addition, Visual Studio.NET is built on, and fully integrated with, the Microsoft.NET Framework. This integration enables Visual Studio.NET to provide support for multiple programming languages and to perform many common programming tasks automatically—freeing developers to rapidly create web applications using their language of choice.

This certificate program is being aligned with the Microsoft® Certified Applications Developer (MCAD) exams, which will lead to Microsoft® Certified Application Developer (MCAD) certification. For further information see the Microsoft® Website:
<http://www.microsoft.com/traincert/mcp/mcad>.

Admission Requirements

To review program admission requirements and application processing dates, visit the program's website at:
<http://madisoncollege.edu/program-info/it-microsoft-visual-studio-net-certificate>.

Requirements for Completion

The certificate will be awarded upon completion of the requirements with a minimum of a 2.0 grade average and no course grade lower than a C. The certificate will be awarded when completion of all requirements is verified after the semester the last course has been completed.

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

Courses	Credits	Hrs/week	
		Lec	Lab
10-152-103 Web Application Development Using ASP.NET**	3	2	2
10-152-106 C# Programming**	3	2	2
10-152-107 Advanced C# Programming*	3	2	2
Total	9		

*Offered fall semester only

**Offered spring semester only

Note: All Information Technology courses require a grade of C or better in order to receive the certificate.

Courses

10-152-103 Web Application Development Using ASP.NET 3 credits

Students learn to develop Microsoft ASP.NET applications that deliver dynamic content to the web. An emphasis is placed on server-side programming and the role of ASP.NET plays. As part of the class, students create web forms with server controls, display dynamic data from a database using Microsoft ADO.NET, read XML configuration files, and learn to debug ASP.NET web pages. Prerequisite: grade of C or better in 10-152-107.

10-152-106 C# Programming 3 credits

Teaches the basic concepts of C# programming. Topics include the Visual Studio Integrated Development Environment, program logic constructs, event-driven programming techniques, and development in an object-oriented context. Prerequisite: acceptance into certificate.

10-152-107 Advanced C# Programming 3 credits

Provides students with a comprehensive understanding of object-oriented system development. It examines and uses the prewritten .NET Framework classes and explores the MSDN help facility. Topics include: collections, exception handling, interfaces and advanced development techniques such as XML and database programming using ADO.NET. Prerequisite: 10-152-106.

Visual Studio, .NET, C#, Visual Basic, ASP.NET, ADO.NET and Microsoft® are registered trademarks of Microsoft Corporation.

Career Potential:

- Visual Studio.NET Developer

More detailed and updated information on this program may be available at: madisoncollege.edu. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

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Information Technology Program Cluster

School of Business and Applied Arts

Program offered at Madison Campuses

For information call:

(608) 246-6003 or (800) 322-6282 Ext. 6003

About the Program

This two-year program meets the specific skills and knowledge requirements of technical and professional within the IT field for an entry-level mobile applications developer/programmer working in a any size organization. Students learn required core IT technical skills in areas such as Java, Objective-C, SQL, XML, JSON, HTML 5, JavaScript, CSS, AJAX, object-oriented systems design, and iOS and/or Android development. Students will be able to choose an app development emphasis alternative in iOS or Android. Training blends general education development with required IT technical skills. Additional education and job experience lead to work in mobile app design and management.

Admission Requirements

To review program admission requirements and application processing dates visit the programs website at:

<http://madisoncollege.edu/program-info/it-mobile-applications-developer>.

NOTE: Students starting this program in a spring semester will need a minimum of 5 semesters to complete the program due to some courses being offered fall only or spring only. These students (and students going part-time) are advised to use the Planner in their student center account to map out the order in which to take the required courses semester by semester, taking into account any limited semesters courses are offered and any pre-requisites for the sequence of courses.

Program Courses

10-107-111 Exploration of Information Technology 1 credit
 Introduces students to the various careers available in the vast field of Information Technology and examines the Network Specialist, Mobile Applications Developer, Web Software Developer, Computer Systems Administration Specialist, Help Desk Specialist, and Security Specialist career paths. Students create an individualized career path plan as the capstone project for the course. Prerequisite: working knowledge of Microsoft Windows (computer literacy, proficiency with a mouse, file management).

10-107-175 Preparation for an IT Career 1 credit
 Introduction to planning and organizing a search for careers in information technology. Activities include the development of a personalized job search plan, correspondence and portfolio. Prerequisite (minimum grade C): 10-107-111, and all courses in the first two semesters of the program.

10-152-111 Java Programming 3 credits
 Introduces programming and object-oriented design concepts using the Java programming language. Students learn all the Java programming basics and use a simple text editor as a development environment. Design concepts and programming tools will be integrated with an emphasis on practical business solutions. Prerequisites: 10-152-119 and 10-152-124.

10-152-112 Advanced Java Programming 3 credits
 Focuses on the server side of application programming for the web. Topics include: Java servlets, database access with JDBC, JavaServer Pages and JavaBeans. A portion of the class deals with application design issues in a web environment. Prerequisite: 10-152-111 and 10-152-125.

10-152-119 Introduction to Programming with JavaScript 3 credits
 Teaches the basic concepts of programming using the JavaScript language. Topics include: embedding JavaScript in HTML, event-driven programming techniques, program control logic, and an introduction to object-oriented programming. Prerequisite: concurrent enrollment in 10-152-120.

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

First Semester	Credits	Hrs/week Lec-Lab
10-107-111 Exploration of Information Technology.....	1	1-0
10-150-160 IT Security Awareness.....	1	1-0
10-152-119 Introduction to Programming with JavaScript.....	3	2-2
10-152-120 Website Development-HTML5.....	3	2-2
10-152-124 Introduction to Database.....	3	2-2
10-801-195 Written Communication.....	3	3-0
10-804-144 Math of Finance.....	3	3-0
Semester Total	17	

Second Semester	Credits	Hrs/week Lec-Lab
Course #1 Emphasis Area course #1 (see below).....	3	2-2
10-152-121 Advanced Website Development-XML.....	3	2-2
10-152-125 SQL Database Programming.....	3	2-2
10-152-130 Object-Oriented Design with UML.....	3	2-2
10-801-196 Oral/Interpersonal Communication.....	3	3-0
10-809-199 Psychology of Human Relations.....	3	3-0
Semester Total	18	

Third Semester	Credits	Hrs/week Lec-Lab
Course #2 Emphasis Area course #2 (see below).....	3	2-2
Course #3 Emphasis Area course #3 (see below).....	3	2-2
10-107-175 Preparation for an IT Career.....	1	1-0
10-152-131 Object-Oriented Systems Analysis*.....	3	2-2
10-801-197 Technical Reporting.....	3	2-2
10-809-197 Contemporary American Society.....	3	3-0
Semester Total	16	

Fourth Semester	Credits	Hrs/week Lec-Lab
Course #4 Emphasis Area course #4 (see below).....	3	2-2
10-152-168 AJAX and JavaScript Web Development**.....	3	2-2
10-152-174 IT Mobile Development Internship**.....	3	2-2
10-809-166 Introduction to Ethics: Theory and Application.....	3	2-2
Elective.....	6	E
Semester Total	18	

Android Emphasis	Course Sequence
10-152-111 Java Programming**.....	#1
10-152-112 Advanced Java Programming*.....	#2
10-152-189 Android Applications Development*.....	#3
10-152-195 Advanced Android Applications Development**.....	#4

iOS Emphasis	Course Sequence
10-152-139 iOS Development**.....	#1
10-152-166 PHP Web Development with MySQL**.....	#2
10-152-143 Advanced iOS Development*.....	#3
10-152-153 Professional iOS Development**.....	#4

*Offered fall semester only

**Offered spring semester only

Note: All Information Technology courses require a grade of C or better in order to graduate.

Note: Students are assessed for correct placement in English or mathematics courses based on their scores on the COMPASS test or on completion of the appropriate prerequisite/s. Additionally, there may be courses in other subject areas that may use COMPASS scores as prerequisites when reading, writing, math, or critical thinking competencies are required.

Recommended Electives

Electives must be associate degree (10-level) or college transfer (20-level) courses.

10-152-106 C# Programming.....	3 credits
10-152-157 Ruby on Rails Development**.....	3 credits
10-154-190 Linux Server.....	3 credits



Madison Area Technical College

IT- Mobile Applications Developer

Program Courses (continued)

10-152-120 Website Development-HTML5

Teaches the fundamentals and techniques of developing business websites using XHTML-compliant HTML5. Topics include webpage design, tables, image manipulation, image maps, forms, cascading style sheets (CSS) and an introduction to JavaScript in conjunction with forms. All work is done directly with HTML5. Prerequisite: working knowledge of Microsoft Windows (computer literacy, proficiency with a mouse, file management)

10-152-121 Advanced Website Development-XML 3 credits

Provides the student with experience in the design and implementation of business Internet Websites using advanced command syntax. Topics include: JavaScript, browser object models, dynamic HTML, advanced cascading style sheets (CSS), XML, document type definitions, extensible stylesheet language transformations (XSLT), and XML schemas. Prerequisite: 10-152-120.

10-152-124 Introduction to Database 3 credits

Introduces the student to relational database concepts using the MS Access database environment. Students then study concepts that lead to good relational database design including an introduction to normalization. Basic SQL statements are practiced also. Students are required to have a working knowledge of Microsoft Windows operating system (computer literacy, proficiency with a mouse, file management).

10-152-125 SQL Database Programming 3 credits

Presents relational database concepts and teaches beginning to intermediate Structured Query Language (SQL) using an Oracle database. Students learn to create and maintain database objects and to store, retrieve, and manipulate data. Demonstrations and hands-on practice reinforce the fundamental concepts. Prerequisite: 10-152-124

10-152-130 Object-Oriented Design with UML 3 credits

Practical, introductory-level systems analysis experience. Emphasis is on the physical system elements: data design (record, file, database and entity-relationship diagrams), object-oriented design (use case, class and sequence diagrams), user interface design (screen and report) and system interface design (platforms and factoring). The use of CASE tools is integrated throughout the course. Prerequisites: 10-152-119 and 10-152-124.

10-152-131 Object-Oriented Systems Analysis 3 credits

In this course, the student learns to analyze the business organization as a system, to structure both the information and processes of a business or organization, and to complete the systems development process through the logical design phase. The course utilizes an object-oriented methodology for the systems development process. Prerequisite: 10-152-130.

10-152-139 iOS Development 3 credits

The purpose for this course is to prepare students for advanced coursework in The purpose of this course is to introduce students to the development of iOS applications (e.g., iPhone/iPad/iPod devices). Students will be introduced to basic syntax of the C programming language and then focus on Objective-C. Object-orientation using Objective-C will be studied and will include classes, objects & methods, properties, and message sending. Students will also start developing iOS applications using the Xcode IDE and the iOS Simulator. Prerequisites: grade of C or better in 10-107-111, 10-152-119, and 10-152-124.

10-152-143 Advanced iOS Development 3 credits

Introduces programming simple iOS applications using Cocoa and Objective C. Students will cover basic Objective C concepts, iOS programming basics, and use the SDK environment on Apple Macintosh computers with OS X as a development platform. Design concepts and programming tools will be integrated with an emphasis on developing and deploying iOS applications. Prerequisites: 10-152-125 and 10-152-139.

10-152-153 Professional iOS Development 3 credits

Focuses on professional features of iOS for applications development. Emphasis on how to keep current with the rapidly changing iOS development environment. Students will be learning the current iOS version SDK and will be practicing techniques for learning and sharing information with classmates. Prerequisites: 10-152-143 and one of the following: 10-152-112 or 10-152-167.

10-152-166 PHP Web Development with MySQL 3 credits

This course introduces the student to dynamic web page development using the PHP programming language. Students will learn how PHP works, how to effectively use many of its powerful features, and how to design and build their own PHP web applications. The popular MySQL open source database management software (DBMS) will also be introduced as a powerful backend for PHP websites. Prerequisites: grade of C or better in 10152119 and 10152124.

10-152-168 AJAX and JavaScript Web Development 3 credits

AJAX turns static web pages into interactive applications, allowing you to deploy rich-client applications. Course covers the basics of DHTML, JavaScript, and the XMLHttpRequest call. Students learn how to add JavaScript and AJAX to existing programs, and design new applications to exploit the power of Web 2.0. Students learn the three layers of AJAX framework, and when (and how) to use each. Students learn how to create rich clients, use visual effects, add client-side validation, and handle forms. Prerequisites: 10-152-121 and one of the following: 10-152-143 or 10-152-189.

10-152-174 IT Mobile Development Internship 3 credits

Opportunities for students to learn and practice programming and analysis techniques through activities and experiences in a group project at Madison College, or in an actual information systems department. Objectives commensurate with student's background and experience. Activities include designing and testing new programs, designing and modifying existing programs, systems analysis and design, and sharing experiences with other interns. Prerequisites: 10-107-175, 10-152-121, 10-152-131 and one of the following: 10-152-143 or 10-152-189.

10-152-189 Android Applications Development 3 credits

This course introduces developing applications for Android devices. All the required software is free, including the Android emulator. It is not necessary to own an Android device, though the applications developed in the course can be deployed to one. Basic familiarity with Java and Eclipse (or willingness to learn them quickly) is assumed. After preliminaries with Google Docs and Google Maps, we take up Android layout and input widgets, both in XML and programmatically; menus and dialogs; gesture detection; graphics and the Android drawing API; database access with SQLite and file IO; location-based services (geo-location); and device dependency issues. Prerequisites: 10-152-111 and 10-152-125.

10-152-195 Advanced Android Development 3 credits

This is a second course in Android application development, assuming a background in Android development and taking up more advanced topics, including geo location, web services and network programming generally, game programming, HTML 5 strategies, and graphics programming. More complex user interfaces are considered, including multi-activity applications. Prerequisites: 10-152-112 and 10-152-189.

Additional Required Program Course

10-150-160 IT Security Awareness 1 credit

Program Number: 10-152-8

Career Potential:

- Mobile App Developer
- Web Developer
- Web Application Developer
- Programmer/Analyst

With additional education and/or work experience, graduates may find employment as:

- Web Designer
- Web Architect
- Systems Analyst
- Systems Programmer
- Database Programmer
- Project Manager
- Information Systems Department Manager

More detailed and updated information on this program may be available at: madisoncollege.edu.

The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

Madison Area Technical College provides equal opportunity in education and employment.

Rev. 02/15

Information Technology— Mobile Programmer

Technical Diploma

Information Technology Program Cluster

School of Business and Applied Arts

Program offered at Madison Campuses

For information call:

(608) 246-6003 or (800) 322-6282 Ext. 6003

About the Program

The Fundamentals of Mobile Applications Development Technical Diploma Program focuses on quickly developing the skills necessary for employment in the mobile applications development field. This program is structured in a manner that allows a full-time student to achieve these skills within one year. The courses in this program include all the first year technical security courses within the Associate in Information Technology Mobile Applications Developer program and can also be applied toward that program.

Admission Requirements

To review program admission requirements and application processing dates visit the programs website at:

<http://programs.madisoncollege.edu/programs/it-mobile-programmer>

Program Courses

10-107-111 Exploration of Information Technology 1 credit

Introduces students to the various careers available in the vast field of Information Technology and examines the Network Specialist, Mobile Applications Developer, Web Software Developer, Computer Systems Administration Specialist, Help Desk Specialist, and Security Specialist career paths. Students create an individualized career path plan as the capstone project for the course. Prerequisite: working knowledge of Microsoft Windows (computer literacy, proficiency with a mouse, file management).

10-150-160 IT Security Awareness 1 credit

Provides a basic survey of the importance of IT security awareness and data confidentiality. This course walks users through basic aspects of information security in a very broad, easy to understand way and explains the value of securing data. The course will also present best practices in access control and password policies.

10-152-119 Introduction to Programming with JavaScript 3 credits

Teaches the basic concepts of programming using the JavaScript language. Topics include: embedding JavaScript in HTML, event-driven programming techniques, program control logic, and an introduction to object-oriented programming. Co-requisite: 10-152-120.

10-152-120 Website Development-HTML5 3 credits

Teaches the fundamentals and techniques of developing business websites using XHTML-compliant HTML5. Topics include webpage design, tables, image manipulation, image maps, forms, cascading style sheets (CSS) and an introduction to JavaScript in conjunction with forms. All work is done directly with HTML5. Prerequisite: working knowledge of Microsoft Windows (computer literacy, proficiency with a mouse, file management).

10-152-121 Advanced Website Development-XML 3 credits

Provides the student with experience in the design and implementation of business Internet Websites using advanced command syntax. Topics include: JavaScript, browser object models, dynamic HTML, advanced cascading style sheets (CSS), XML, document type definitions, extensible stylesheet language transformations (XSLT), and XML schemas. Prerequisite: 10-152-120.

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

First Semester		Credits	Hrs/week Lec-Lab
10-107-111	Exploration of Information Technology	1	1-0
10-150-160	IT Security Awareness	1	1-0
10-152-119	Introduction to Programming with JavaScript	3	2-2
10-152-120	Website Development-HTML5	3	2-2
10-152-124	Introduction to Database	3	2-2
10-801-195	Written Communication	3	3-0
Second Semester			
10-152-121	Advanced Website Development-XML	3	2-2
10-152-125	SQL Database Programming	3	2-2
10-152-130	Object-Oriented Design with UML	3	2-2
10-809-199	Psychology of Human Relations	3	3-0
Semester Total		12	

*Offered fall semester only

**Offered spring semester only

Note: All Information Technology courses require a grade of C or better in order to graduate.

Note: Students are assessed for correct placement in English or mathematics courses based on their scores on the COMPASS test or on completion of the appropriate prerequisite(s). Additionally, there may be courses in other subject areas that may use COMPASS scores as prerequisites when reading, writing, math, or critical thinking competencies are required.

10-152-124 Introduction to Database 3 credits

Introduces the student to relational database concepts using the MS Access database environment. Students then study concepts that lead to good relational database design including an introduction to normalization. Basic SQL statements are practiced also. Prerequisite: working knowledge of Microsoft Windows (computer literacy, proficiency with a mouse, file management).

10-152-125 SQL Database Programming 3 credits

Presents relational database concepts and teaches beginning to intermediate Structured Query Language (SQL) using an Oracle database. Students learn to create and maintain database objects and to store, retrieve, and manipulate data. Demonstrations and hands-on practice reinforce the fundamental concepts. Prerequisite: 10-152-124.

10-152-130 Object-Oriented Design w/UML 3 credits

Practical, introductory-level systems analysis experience. Emphasis is on the physical system elements: data design (record, file, database and entity-relationship diagrams), object-oriented design (use case, class and sequence diagrams), user interface design (screen and report) and system interface design (platforms and factoring). The use of CASE tools is integrated throughout the course. Prerequisites: 10-152-119 and 10-152-124.

Career Potential:

More detailed and updated information on this program may be available at: madisoncollege.edu. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

Madison Area Technical College provides equal opportunity in education and employment.

Information Technology— Network Security Specialist

Associate in Applied Science Degree

Information Technology Program Cluster

School of Business and Applied Arts

Program offered at Madison Campuses

For information call: (608) 246-6003 or
(800) 322-6282 Ext. 6003

About the Program

The Network Security Specialist Program provides comprehensive instruction in computing systems and networks that have an important impact on data confidentiality, integrity and availability. Emphasis is placed on vigilant security awareness throughout the curriculum. The program introduces the student to computer network threats and the appropriate incident response, to include defenses, countermeasures and computer forensics. Students are exposed to scenarios reflecting the legal and ethical issues associated with information security. Extensive hands-on labs build practical experience in configuring a variety of network operating systems, firewalls, virtual private networks (VPN), packet filters and intrusion detection systems (IDS) to maximize information security in the network. With additional study, students can obtain the CompTIA Security+ and CISSP (Associate Level) Certifications. This curriculum has been certified by the as meeting the National Security Agency and Department of Homeland Security national curriculum standards known as the Information Assurance Courseware Evaluation (IACE) program.

Admission Requirements

To review program admission requirements and application processing dates, visit the program's website at:

<http://madisoncollege.edu/program-info/it-network-security-specialist>.

Program Courses

10-107-111 Exploration of Information Technology 1 credit
Introduces students to the various careers available in the vast field of Information Technology and examines the Network Specialist, Mobile Applications Developer, Web Software Developer, Computer Systems Administration Specialist, Help Desk Specialist, and Security Specialist career paths. Students create an individualized career path plan as the capstone project for the course.

10-107-175 Preparation for an IT Career 1 credit
Introduction to planning and organizing a search for careers in information technology. Activities include the development of a personalized job search plan, correspondence and portfolio. Prerequisites: 10-107-111, 10-150-122.

10-150-121 Intro to Cisco Networking 3 credits
This is an introductory course that introduces the architecture, structure, function and components of computer networks. Dynamic and static routing will be introduced. Students will learn technology concepts with the support of interactive media and apply and practice this knowledge through a series of hands-on and simulated activities. NOTE: must take Cisco Networking 2, 10-150-122, within one year of completion of Intro to Cisco Networking, 10-150-121. Prerequisite: working knowledge of Microsoft Windows (computer literacy, proficiency with a mouse, file management).

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

First Semester		Credits	Hrs/week Lec-Lab
10-107-111	Exploration of Information Technology.....	1	1-0
10-150-160	IT Security Awareness.....	1	1-0
10-150-121	Intro to Cisco Networking.....	3	2-2
10-154-184	Windows Client	3	2-2
10-154-190	Linux Server.....	3	2-2
10-801-195	Written Communication	3	3-0
10-804-144	Math of Finance	3	3-0
Total		17	

Second Semester		Credits	Hrs/week Lec-Lab
10-150-127	System Administration Security**.....	3	3-0
10-150-194	Firewall/VPN Technologies**.....	3	2-2
10-152-109	Python Programming	3	2-2
10-154-171	Windows Server 1.....	3	2-2
10-801-196	Oral/Interpersonal Communication.....	3	3-0
10-809-199	Psychology of Human Relations.....	3	3-0
Total		18	

Third Semester		Credits	Hrs/week Lec-Lab
10-107-175	Preparation for an IT Career.....	1	1-0
10-150-129	Web Application Security.....	3	2-2
10-150-185	Computer Forensics*	3	2-2
10-150-196	Intrusion Detection*.....	3	2-2
***Emphasis	Choose from list below	3	2-2
10-801-197	Technical Reporting.....	3	3-0
Total		16	

Fourth Semester		Credits	Hrs/week Lec-Lab
10-150-164	Penetration Testing**.....	3	2-2
10-150-193	Security Design**.....	3	2-2
10-150-197	Network Security Internship**.....	3	2-2
10-809-166	Introduction to Ethics: Theory and Applications.....	3	3-0
10-809-197	Contemporary American Society.....	3	3-0
	Elective.....	3	E
Total		18	

***Emphasis Choices:

Networking			
10-150-122	Cisco Networking 2.....	3	2-2
Programming			
10-152-120	Website Development-XHTML	3	2-2
Systems Administration			
10-154-172	Windows Server 2.....	3	2-2

Recommended Electives

Electives must be associate degree (10-level) or college transfer (20-level) courses

10-150-123	Cisco Networking 3*.....	3 credits
10-150-124	Cisco Networking 4	3 credits
10-152-119	Intro to Programming with JavaScript.....	3 credits
10-154-175	VMware Certified Professional (VCP).....	3 credits

*Offered fall semester only

**Offered spring semester only



Program Courses (continued)

10-150-122 Cisco Networking 2 3 credits
 Students learn how to configure a router and a switch for basic functionality. Students will be able to configure and troubleshoot routers and switches and resolve common issues with protocols, virtual WANs and inter-VLAN routing in both IPv4 and IPv6. Prerequisite: 10-150-121. NOTE: must follow Intro to Cisco Networking, 10-150-121, within one year.

10-150-127 System Administration Security 3 credits
 This class provides students with the tools they need to perform common administrative functions in some of the most popular scripting environments. The class will examine PHP in the context of an Apache webserver, and then it will examine using GNU BASH and Microsoft PowerShell scripting from the command line to complete every day administrative functions. Tools include: Bash, PHP, Apache, and PowerShell.

10-150-129 Web Application Security 3 credits
 This course provides a broad overview of the tools and techniques commonly used for web application security testing. In depth hands-on exercises are used to instruct the student in the proper selection and application of a given tool for the intended task. Also included are basic strategies for documenting and reporting on the outcome of the test. The student must demonstrate the ability to plan, and execute a basic web security audit in an environment that simulates a common business or organization. Open Source tools include: The BURP suite, Python, etc... Prerequisite: 10-150-127 and 10-154-190.

10-150-160 IT Security Awareness 1 credit
 Provides a basic survey of the importance of IT security awareness and data confidentiality. This course walks users through basic aspects of information security in a very broad, easy to understand way and explains the value of securing data. The course will also present best practices in access control and password policies.

10-150-164 Penetration Testing 3 credits
 This course provides a broad overview of the tools and techniques commonly used for penetration testing. In depth hands-on exercises are used to instruct the student in the proper selection and application of a given tool for the intended task. Also included are basic strategies for documenting and reporting on the outcome of the test. The student must demonstrate the ability to plan, and execute a basic network security audit in an environment that simulates a common business or organization. Open Source tools include: NMap, Metasploit, Medusa, etc. Prerequisites: 10-150-127 and 10-154-190.

10-150-185 Computer Forensics 3 credits
 This course provides a broad overview of computer forensics and investigation tools and techniques. All major personal computer operating system architectures and disk structures will be discussed, as well as what computer forensic hardware and software tools are available. The details of data acquisition, computer forensic analysis, email investigations, image file recovery, investigative report writing, and expert witness requirements. The course provides a range of laboratory and hands-on assignments that teach about theory as well as the practical application of computer forensic investigation. Open Source tools include: The Sleuth Kit, dd, Scalpel, etc. Prerequisites: 10-150-127 and 10-154-190.

10-150-193 Security Design 3 credits
 This course affords the network security specialist the opportunity to design a secure network in a team environment using the skills learned from the prerequisite classes. The student must demonstrate the ability to design, plan and execute an infrastructure that represents the services offered by a common business or organization. The student will research their part of the design and must prepare written document including notes, diagrams, references, and implementation instructions of their part of the total design. Prerequisites: 10-150-129, 10-150-194, 10-150-196, 10-154-171, and 10-154-190.

10-150-194 Firewall/VPN Technologies 3 credits
 This course introduces the security student to the common technologies used for defending the perimeter of a modern business network. In depth hands-on exercises are used to instruct the student in the related technologies including NAT, PAT, ACL construction, application gateways, and stateful packet inspection. The student additionally learns a common implementation of both site-to-site and remote access VPN's. The student must demonstrate the ability to implement a basic firewall that simulates the perimeter of a basic business network. Tools include: ASA5512-X, Cisco Any-Connect VPN client. Prerequisite: 10-150-121.

10-150-196 Intrusion Detection 3 credits
 This course provides a broad overview of the tools and techniques commonly used for detecting network sourced attacks. In depth hands-on exercises are used to instruct the student in the proper selection and application of a given tool for the intended task. Also included are basic strategies for documenting and reporting on detected events. The student must demonstrate the ability to plan, design, and build a network IDS that fulfills the security needs of a common business or organization. Open Source tools include: tcpdump, snort, barnyard, etc. Prerequisites: 10-150-127 and 10-154-190.

10-150-197 Network Security Internship 3 credits
 An on-the-job experience in Madison area companies that maintain, manage and secure computer networks. The emphasis is on hands-on design, installation, configuration, management, documentation, troubleshooting, maintenance and securing of LANs. By consent of instructor, a special project may be substituted for the internship. Prerequisites: 10-107-175, 10-150-185, and 10-150-196.

10-152-109 Python Programming 3 credits
 This is an introductory scripting course in the Python programming language. Topics include: basic programming techniques, I/O, data processing, file manipulation, program control logic, functions, modules, and exception handling.

10-152-120 Website Development-XHTML 3 credits
 Teaches the fundamentals and techniques of developing business websites using XHTML-compliant HTML5. Topics include webpage design, tables, image manipulation, image maps, forms, cascading style sheets (CSS) and an introduction to JavaScript in conjunction with forms. All work is done directly with HTML5. Prerequisite: working knowledge of Microsoft Windows (computer literacy, proficiency with a mouse, file management).

10-154-171 Windows Server 1 3 credits
 Gain the skills necessary for supporting and configuring a Windows server including the installation and configuration of Windows Active Directory environment. Configure and deploy network services such as DHCP and DNS. Learn the practical skills required to create and implement Group Policy and configure security policies while preparing for Microsoft MCSA Exam 70-410. Prerequisites: 10-107-111, 10-150-121, and 10-154-184.

10-154-172 Windows Server 3 credits
 Gain the skills to support and maintain Windows Active Directory environment. Gain practical experience managing a Windows Active Directory infrastructure with DNS and VPNs. Configure Network Policy Services, Active Directory account policies and advanced Group Policy processes while preparing for Microsoft MCSA exam 70-411.

10-154-184 Windows Client 3 credits
 Learn how to install, configure and administer a Windows desktop operating system. Work in a computer laboratory setting to develop the real-world expertise needed to set up and support the Windows desktop environment. As you progress through topics including Windows installation, hardware device configuration and establishing network connectivity, you are also preparing for a current Microsoft Exam. As an added bonus you will learn the operation of VMWare Workstation.

10-154-190 Linux Server 3 credits
 Introduces Linux with a focus on system administration skills. Topics include installation, file and directory management, command execution, input/output redirection and pipes, shell scripts, network services, security, troubleshooting and the X Window system. Prerequisite: 10-154-184 (or concurrent enrollment).

Career Potential:

Entry level positions can include:

- Network Control Operator
- Network Support Technician
- Network Support Services
- Network Technician
- Network Specialist
- Network Professional
- Networking Services
- Assistant LAN Manager
- Assistant LAN Administrator
- Assistant Network Administrator

With experience, networking specialist can find work as:

- LAN Manager
- LAN Administrator
- Network Support Services Manager
- Network Engineer
- Network Administrator
- Web Designer

Upper Management positions can include:

- Networking Manager
- Manager of Voice/Data Networks
- Intranet (sic) Designer
- Data Communications Analyst
- Director of Networks
- Network Security Specialist
- Cyber Security Professional

More detailed and updated information on this program may be available at: madisoncollege.edu. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

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Madison Area Technical College Information Technology— Network Specialist

Effective: 2015-2016

Program Number: 10-150-2

Associate in Applied Science Degree

Information Technology Program Cluster

School of Business and Applied Arts

Program offered at Madison Campuses

For information call: (608) 246-6003 or
(800) 322-6282 Ext. 6003

About the Program

The Information Technology-Network Specialist program prepares qualified individuals to administer, install, maintain and troubleshoot data and voice networks. The Network Specialist has a working knowledge of Local Area Networks (LANs); Wide Area Networks (WANs), and their interconnectivity to nodes, servers, and other end user devices in the enterprise network. Students receive hands-on training in network operating systems, user administration, network security, network design, and implementing voice over IP (VoIP). Instruction includes: managing Network Operating Systems (NOS) and client software, network security measures, user accounting, and monitoring network event logs for problem resolution. The program also prepares the graduates to test for the Cisco CCNA (Cisco Certified Networking Associate), the Cisco CCNA-Voice, the Microsoft Certifications for Windows Configuration and Configuring Windows Server 2012, the CompTIA A+, and the CompTIA Network+ certifications, as well as CCNA Security.

Admission Requirements

To review program admission requirements and application processing dates, visit the program's website at:

<http://madisoncollege.edu/program-info/it-network-specialist>

NOTE: Students starting this program in a spring semester will need a minimum of 5 semesters to complete the program due to some courses being offered fall only or spring only. These students (and students going part-time) are advised to use the Planner in their student center account to map out the order in which to take the required courses semester by semester, taking into account any limited semesters courses are offered and any pre-requisites for the sequence of courses.

Program Courses

10-107-111 Exploration of Information Technology 1 credit
Introduces students to the various careers available in the vast field of Information Technology and examines the Network Specialist, Mobile Applications Developer, Web Software Developer, Computer Systems Administration Specialist, Help Desk Specialist, and Security Specialist career paths. Students create an individualized career path plan as the capstone project for the course. Prerequisite: working knowledge of Microsoft Windows (computer literacy, proficiency with a mouse, file management) and experience sending and receiving email.

10-107-175 Preparation for an IT Career 1 credit
Introduction to planning and organizing a search for careers in information technology. Activities include the development of a personalized job search plan, correspondence and portfolio. Note: IT students must have completed all IT courses in the first two semesters. Prerequisites: 10-107-111 and 10-150-122.

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

		Credits	Hrs/week Lec-Lab
First Semester			
10-107-111	Exploration of Information Technology.....	1	1-0
10-150-160	IT Security Awareness.....	1	1-0
10-150-121	Intro to Cisco Networking.....	3	2-2
10-154-184	Windows Client.....	3	2-2
10-154-189	Computer Hardware Essentials.....	3	2-2
10-801-195	Written Communication.....	3	3-0
10-804-144	Math of Finance.....	3	3-0
Semester Total		17	

Second Semester			
10-150-122	Cisco Networking 2.....	3	2-2
10-154-122	IT Service Concepts.....	3	2-2
10-154-171	Windows Server 1.....	3	2-2
10-154-190	Linux Server.....	3	2-2
10-801-196	Oral/Interpersonal Communication.....	3	3-0
10-809-199	Psychology of Human Relations.....	3	3-0
Semester Total		18	

Third Semester			
10-107-175	Preparation for an IT Career.....	1	1-0
10-150-123	Cisco Networking 3*.....	3	2-2
10-150-124	Cisco Networking 4*.....	3	2-2
10-150-150	VOIP Convergence Fundamentals*.....	3	2-2
10-801-197	Technical Reporting.....	3	3-0
10-809-166	Introduction to Ethics: Theory and Application.....	3	3-0
Semester Total		16	

Fourth Semester			
10-150-151	Advanced Networking Topics**.....	3	2-2
10-150-194	Firewall/VPN Technologies**.....	3	2-2
10-150-195	Networking Internship**.....	3	2-2
10-152-109	Python Programming.....	3	2-2
10-809-197	Contemporary American Society.....	3	3-0
	Elective.....	3	E
Semester Total		18	

Recommended Electives

Electives must be associate degree (10-level) or college transfer (20-level) courses

10-150-155	CCNP Route*	3 credits
10-152-120	Website Development-HTML5	3 credits
10-154-172	Windows Server 2*	3 credits
10-154-194	Windows Server Pro**	3 credits

* Offered fall semester only

** Offered spring semester only

Graduation Requirement

Note: All Information Technology courses require a grade of C or better in order to graduate.

Note: Students are assessed for correct placement in English or mathematics courses based on their scores on the COMPASS test or on completion of the appropriate prerequisite/s. Additionally, there may be courses in other subject areas that may use COMPASS scores as prerequisites when reading, writing, math, or critical thinking competencies are required.



Program Courses (continued)

10-150-121 Intro to Cisco Networking 3 credits

This is an introductory course that introduces the architecture, structure, function and components of computer networks. Dynamic and static routing will be introduced. Students will learn technology concepts with the support of interactive media and apply and practice this knowledge through a series of hands-on and simulated activities. Prerequisite: working knowledge of Microsoft Windows (computer literacy, proficiency with a mouse, file management). NOTE: must take Cisco Networking 2, 10-150-122, within one year of completion of Intro to Cisco Networking, 10-150-121.

10-150-122 Cisco Networking 2 3 credits

Students learn how to configure a router and a switch for basic functionality. Students will be able to configure and troubleshoot routers and switches and resolve common issues with protocols, virtual WANs and inter-VLAN routing in both IPv4 and IPv6. Prerequisite: 10-150-121. NOTE: must follow Intro to Cisco Networking, 10-150-121, within one year.

10-150-123 Cisco Networking 3 3 credits

Students learn how to apply the internetworking skills from Intro to Cisco and Cisco Networking 2 by building networks using EIGRP, multi-area OSPF, Spanning Tree Protocol, and Link Aggregation. Prerequisite: 10-150-122. NOTE: must follow Cisco Networking 2, 10-150-122 within one year.

10-150-124 Cisco Networking 4 3 credits

Students learn how to connect networks using WAN circuits, including PPP, Frame Relay and Broadband Solutions. Students will also implement NAT and become introduced to Virtual Private Networks and network monitoring. Prerequisite: 10-150-122. NOTE: must follow Cisco Networking 2, 10-150-122, within one year.

10-150-150 VOIP Convergence Fundamentals 3 credits

This class prepares students for the Cisco CCNA-Voice certification. It will introduce students to the terms and definitions of Analog phone systems and Voice over IP (VOIP) networks. Topics included in this course will be configuring and maintaining an IP Telephony system, provisioning phones and users, configuring call features, and establishing voicemail. Cisco Call Manager, Call Manager Express, Cisco Unity Connection Voicemail, and Cisco VoIP phones are used to configure and build a converged IP telephony infrastructure suitable for a business. Troubleshooting will be emphasized. Prerequisite: 10-150-122.

10-150-151 Advanced Networking Topics 3 credits

This class introduces more advanced networking topics from the CCNP exams, such as: Implementing VLAN based solutions with secure layer 2 and layer 3 services, implementing High Availability in a LAN and WAN, implementing QoS on converged networks, specific IP QoS mechanisms for implementing the DiffServ QoS model, wireless security and basic wireless management. Quality of Service (QoS) will be used to design and implement a structure to prioritize voice and data applications across the network. Wireless will include mobility between lightweight access points. Troubleshooting and teamwork will be emphasized. Prerequisite: 10-150-150.

10-150-160 IT Security Awareness 1 credit

Provides a basic survey of the importance of IT security awareness and data confidentiality. This course walks users through basic aspects of information security in a very broad, easy to understand way and explains the value of securing data. The course will also present best practices in access control and password policies.

10-150-194 Firewall/VPN Technologies 3 credits

This course introduces the security student to the common technologies used for defending the perimeter of a modern business network. In depth hands-on exercises are used to instruct the student in the related technologies including NAT, PAT, ACL construction, application gateways, and stateful packet inspection. The student additionally learns a common implementation of both site-to-site and remote access VPN's. The student must demonstrate the ability to implement a basic firewall that simulates the perimeter of a basic business network. Tools include: ASA5512-X, Cisco Any-Connect VPN client. Prerequisite: 10-150-121

10-150-195 Networking Internship 3 credits

An on-the-job experience, with instructor supervision, in Madison area networking companies and in companies that maintain and manage computer networks. The emphasis is on hands-on design, installation, configuration, management, documentation, troubleshooting and maintenance of LANs.

Prerequisites: 10-107-175, 10-150-150, and 10-150-176.

10-152-109 Python Programming 3 credits

This is an introductory scripting course in the Python programming language. Topics include: basic programming techniques, I/O, data processing, file manipulation, program control logic, functions, modules, and exception handling.

10-154-122 IT Service Concepts 3 credits

This course is an introduction to the broad range of topics than an entry-level user support specialist is expected to know. The course delves into the kinds of knowledge, skills and abilities they need to find employment in the support industry. Students develop skills to handle troubleshooting and problem solving, successfully communicate with technology users, determine a user's specific needs, and train end-users, as well as handle budgeting and other management priorities. Course addresses awareness of the evolution of IT support and best practices of the ITIL framework.

10-154-171 Windows Server 1 3 credits

Gain the skills necessary for supporting and configure a Windows Network infrastructure including name resolution, file and print services, and remote access. Learn the practical skills required to troubleshoot and monitor network problems while preparing for Microsoft MCTS Exam 70-642.

Prerequisites: 10-101-111, 10-154-184, and 10-150-121.

10-154-184 Windows Client 3 credits

Learn how to install, configure and administer a Windows desktop operating system. Work in a computer laboratory setting to develop the real-world expertise needed to set up and support the Windows desktop environment. As you progress through topics including Windows installation, hardware device configuration and establishing network connectivity, you are also preparing for a current Microsoft Exam. As an added bonus you will learn the operation of VMware Workstation.

10-154-189 Computer Hardware Essentials 3 credits

This course presents a comprehensive overview of computer system fundamentals and an introduction to operating systems. Students working through hands-on activities and labs gain skills in assembling components, install, configure and maintain devices, PCs and operating system software, understand the basics of networking and security, laptops, printers, and properly diagnose, resolve common hardware and software issues while applying troubleshooting skills. CompTIA's A+ Certification is a widely accepted IT industry standard certification for PC technology for an entry-level IT professional. This course prepares students for CompTIA's A+ 220-801 exam. Prerequisite: working knowledge of Microsoft Windows (computer literacy, proficiency with a mouse, file management).

10-154-190 Linux Server 3 credits

Introduces Linux with a focus on system administration skills. Topics include installation, file and directory management, command execution, input/output redirection and pipes, shell scripts, network services, security, troubleshooting and the X Window system. Prerequisite: 10-154-184 or concurrent enrollment.

Career Potential:

Entry level positions can include:

- Network Control Operator
- Network Support Technician
- Network Support Services
- Network Technician
- Network Specialist
- Network Professional
- Networking Services
- Assistant LAN Manager
- Assistant LAN Administrator
- Assistant Network Administrator

With experience, networking specialist can find work as:

- LAN Manager
- LAN Administrator
- Network Support Services Manager
- Network Engineer
- Network Administrator
- Web Designer

Upper Management positions can include:

- Networking Manager
- Manager of Voice/Data Networks
- Intranet (sic) Designer
- Data Communications Analyst
- Director of Networks

More detailed and updated information on this program may be available at: madisoncollege.edu. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

Madison Area Technical College provides equal opportunity in education and employment.

Information Technology—

PHP Professional Web Developer Certificate

Program Number: 90-152-8

Certificate

Information Technology Program Cluster

School of Business and Applied Arts

Program offered at Madison Campuses

For information call: (608) 246-6003 or
(800) 322-6282 Ext. 6003

About the Certificate

This certificate is designed to prepare information systems professionals to use the PHP programming language for web development. Classes include advanced web application features such as shopping carts, content management system using Drupal, web forums and connecting to web services. The certificate classes are used to teach students the necessary skills to make them successful in PHP web development.

Admission Requirements

To review admission program admission requirements and application processing dates, visit the program's website at: <http://madisoncollege.edu/program-info/it-php-professional-web-developer-certificate>.

Requirements for Completion

The certificate will be awarded upon completion of the requirements with a minimum of a 2.0 grade average and no course grade lower than a C. The certificate will be awarded when completion of all requirements is verified after the semester the last course has been completed.

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

Courses	Credits	Hrs/week Lec-Lab
10-152-166 PHP Web Development with MySQL**	3	2-2
10-152-167 Advanced PHP and MySQL Web Development*	3	2-2
Total	6	

Note: All Information Technology courses require a grade of C or better in order to receive the certificate.

***Offered Fall semester only**

****Offered Spring semester only**

Courses

- 10-152-166 PHP Web Development with MYSQL 3 credits**
This course introduces the student to dynamic web page development using the PHP programming language. Students will learn how PHP works, how to effectively use many of its powerful features, and how to design and build their own PHP web applications. The popular MySQL open source database management software (DBMS) will also be introduced as a powerful backend for PHP websites. Prerequisite: admission to certificate.
- 10-152-167 Advanced PHP and MySQL Web Development 3 credits**
This course prepares the student to implement professional PHP and MySQL web applications. Students will learn advanced techniques for session management, validation, and authentication. Advanced web application features such as shopping carts, content management using Drupal, web forums and connecting to web services are discussed. Installation and customization of open source PHP web applications is also covered. Prerequisite: grade of C or better in 10-152-166.

More detailed and updated information on this program may be available at: madisoncollege.edu. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

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Rev. 04/15



Systems Administration Specialist

Program Number: 10-154-7

Associate in Applied Science Degree

Information Technology Program Cluster

School of Business and Applied Arts

Program offered at Madison Campuses

For information call: (608) 246-6003 or
(800) 322-6282 Ext. 6003

About the Program

The System Administration program exposes students to a variety of skills utilized in entry-level computer systems administration positions. Students are exposed to various aspects of data networking, data storage, computer hardware and operating systems software. Special emphasis is placed on understanding Microsoft Windows server and client systems and virtualization technologies using VMware. During the final semester an on-the-job internship with an area employer can help students find the jobs they desire. Optionally, students can work to obtain industry certifications such as the CompTIA A+ or Microsoft Certified Technology Specialist (MCTS).

Typical job duties include the installation, configuration, administration and operation of client and server systems including Microsoft Windows server, Windows client, Linux and VMware. Graduates are often involved in the integration of hardware and software required to support new IT initiatives. Employees in this field often work extensively with end users and other members of a technology team on both individual and group projects. Strong interpersonal and communications skills are desirable to employers.

Admission Requirements

To review program admission requirements and application processing dates, visit the program's website at: <http://madisoncollege.edu/program-info/it-computer-systems-administration-specialist>.

NOTE: Students starting this program in a spring semester will need a minimum of 5 semesters to complete the program due to some courses being offered fall only or spring only. These students (and students going part-time) are advised to use the Planner in their student center account to map out the order in which to take the required courses semester by semester, taking into account any limited semesters courses are offered and any pre-requisites for the sequence of courses.

Program Courses

10-107-111 Exploration of Info Technology 1 credit

Introduces students to the various careers available in the vast field of Information Technology and examines the Network Specialist, Mobile Applications Developer, Web Software Developer, Computer Systems Administration Specialist, Help Desk Specialist, and Security Specialist career paths. Students create an individualized career path plan as the capstone project for the course.

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2014-2015 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

First Semester	Credits	Hrs/week Lec-Lab
10-107-111 Exploration of Information Technology	1	1-0
10-150-121 Intro to Cisco Networking.....	3	2-2
10-150-160 IT Security Awareness	1	1-0
10-154-184 Windows Client	3	2-2
10-154-189 Computer Hardware Essentials	3	2-2
10-801-195 Written Communication.....	3	3-0
10-809-197 <u>Contemporary American Society</u>	3	3-0
Total	17	

Second Semester

10-154-122 IT Service Concepts.....	3	2-2
10-154-146 Help Desk Tools and Techniques.....	3	3-0
10-154-171 Windows Server 1	3	2-2
10-154-191 A+ IT Technician	3	2-2
10-801-196 Oral/Interpersonal Communication.....	3	3-0
10-804-144 <u>Math of Finance</u>	3	3-0
Total	18	

Third Semester

10-107-175 Preparation for an IT Career	1	1-0
10-154-172 Windows Server 2*.....	3	2-2
10-154-174 Trends in Computer Systems Administration*.....	3	2-2
10-154-190 Linux Server	3	2-2
10-809-166 Introduction to Ethics: Theory and Application	3	3-0
<u>Elective</u>	3	E
Total	16	

Fourth Semester

10-154-175 VMware Certified Professional (VCP)**.....	3	2-2
10-154-194 Windows Server Pro**	3	2-2
10-154-198 Systems Administration Internship**.....	3	2-2
10-801-197 Technical Reporting	3	3-0
10-809-199 Psychology of Human Relations.....	3	3-0
<u>Elective</u>	3	E
Total	18	

*Offered fall semester only

**Offered spring semester only

Graduation Requirement

Note: All Information Technology courses require a grade of C or better in order to graduate.

Note: Students are assessed for correct placement in English or mathematics courses based on their scores on the COMPASS test or on completion of the appropriate prerequisite/s. Additionally, there may be courses in other subject areas that may use COMPASS scores as prerequisites when reading, writing, math, or criticalthinking competencies are required.

Recommended Electives

Electives must be associate degree (10 -level) or college transfer (20 -level) courses.

10-106-101 Introduction to Keyboarding	1 credit
10-152-109 Python Programming	3 credits
10-152-120 Website Development – HTML5	3 credits



Program Courses

10-107-175 Preparation for an IT Career 1 credit
Introduction to planning and organizing a search for careers in information technology. Activities include the development of a personalized job search plan, correspondence and portfolio. Prerequisite: (minimum grade C): Careers in IT, 10-107-111, and all courses in the first two semesters of the program.

10-150-121 Intro to Cisco Networking 3 credits
This is an introductory course that introduces the architecture, structure, function and components of computer networks. Dynamic and static routing will be introduced. Students will learn technology concepts with the support of interactive media and apply and practice this knowledge through a series of hands-on and simulated activities. NOTE: Must take Cisco Networking 2, 10-150-122, within one year of completion of Intro to Cisco Networking, 10-150-121. Prerequisite: working knowledge of Microsoft Windows (computer literacy, proficiency with a mouse, file management).

10-150-160 Security Awareness 1 credit
Provides a basic survey of the importance of IT security awareness and data confidentiality. This course walks users through basic aspects of information security in a very broad, easy to understand way and explains the value of securing data. The course will also present best practices in access control and password policies.

10-154-122 IT Service Concepts 3 credits
This course is an introduction to the broad range of topics that an entry-level user support specialist is expected to know. The course delves into the kinds of knowledge, skills and abilities they need to find employment in the support industry. Students develop skills to handle troubleshooting and problem solving, successfully communicate with technology users, determine a user's specific needs, and train end-users, as well as handle budgeting and other management priorities. Course addresses awareness of the evolution of IT support and best practices of the ITIL framework.

10-154-146 Help Desk Tools and Techniques 3 credits
Explores the customer service roles and responsibilities of an IT support professional. Examines the support software options for tracking and managing data: log, track, and escalate calls; resolve problems using a knowledge base. Covers documentation/reporting tools, asset management, change management, incident management, hotline support, performance reports, trends, and career resources. Includes hands-on, real-world projects using current Help Desk software.

10-154-171 Windows Server 1 3 credits
Gain the skills necessary for supporting and configuring a Windows server including the installation and configuration of Windows Active Directory environment. Configure and deploy network services such as DHCP and DNS. Learn the practical skills required to create and implement Group Policy and configure security policies while preparing for Microsoft MCSA Exam 70-410. Prerequisites: 10-107-111, 10-150-121, and 10-154-184.

10-154-172 Windows Server 2 3 credits
Gain the skills to support and maintain Windows Active Directory environment. Gain practical experience managing a Windows Active Directory infrastructure with DNS and VPNs. Configure Network Policy Services, Active Directory account policies and advanced Group Policy processes while preparing for Microsoft MCSA exam 70-411. Prerequisite: 10-154-171.

10-154-174 Trends in Computer Systems Administration 3 credits
This class introduces topics surrounding current and evolving trends in Information Technology. Students learn about these technologies and how they are used. Through lab scenarios and coursework, students develop the skills necessary to manage these new technologies. Topics may include current trends such as storage management, cloud computing, and virtual desktop infrastructures as well as other technologies as they evolve. Prerequisite: 10-154-171.

10-154-175 VMware Certified Professional (VCP) 3 credits
This hands-on training course explores installation, configuration, and management of VMware® vSphere™, which consists of VMware ESXi™ and VMware vCenter™ Server. Students are introduced to virtualization and storage management concepts using VMware server virtualization products. Prerequisite: 10-154-172.

10-154-184 Windows Client 3 credits
Learn how to install, configure and administer a Windows desktop operating system. Work in a computer laboratory setting to develop the real-world expertise needed to set up and support the Windows desktop environment. As you progress through topics including Windows installation, hardware device configuration and establishing network connectivity, you are also preparing for a current Microsoft Exam. As an added bonus you will learn the operation of VMWare Workstation.

10-154-189 Computer Hardware Essentials 3 credits
This course presents a comprehensive overview of computer system fundamentals and an introduction to operating systems. Students working through hands-on activities and labs gain skills in assembling components, install, configure and maintain devices, PCs and operating system software, understand the basics of networking and security, laptops, printers, and properly diagnose, resolve common hardware and software issues while applying troubleshooting skills. CompTIA's A+ Certification is a widely accepted IT industry standard certification for PC technology for an entry-level IT professional. This course prepares students for CompTIA's A+ 220-801 exam. Prerequisite: working knowledge of Microsoft Windows (computer literacy, proficiency with a mouse, and file management).

10-154-190 Linux Server 3 credits
Introduces Linux with a focus on system administration skills. Topics include installation, file and directory management, command execution, input/output redirection and pipes, shell scripts, network services, security, troubleshooting and the X Window system. Prerequisite: 10-154-184 or concurrent enrollment.

10-154-191 A+ IT Technician 3 credits
This course presents a comprehensive advanced exposure to computer operating systems and hardware. Students working through hands-on activities and labs gain skills in assembling components, install, configure and maintain devices, PCs and software, understand the basics of networking and security/forensics, laptops, printers and properly diagnose, document, resolve common hardware and operating system software issues while applying troubleshooting skills. Students also gain understanding of appropriate customer support; understand the basics of virtualization, desktop imaging, and deployment. CompTIA's A+ Certification is a widely accepted IT industry standard certification for PC technology for an entry-level IT professional. This course prepares student for CompTIA's A+ 220-802 exam. Prerequisite: 10-154-189.

10-154-194 Windows Server Pro 3 credits
Complete your education in Windows Server Support—and prepare for Microsoft Exam 70-646—while learning the day to day skills required for supporting Windows web, infrastructure and application servers. Learn the essentials of Windows scripting and batch files and other desktop tools required to profile and monitor Windows Servers. Prerequisite: 10-154-172.

10-154-198 Systems Administration Internship 3 credits
Provides work experience in an area data center environment offering a variety of experiences managing and operating computer systems. The student spends approximately 15 hours per week at the internship site. By consent of instructor, a special project may be substituted for the internship. Prerequisites: 10-107-175, 10-154-172, and 10-154-174; or consent of instructor.

Career Potential:

- Microsoft Certified Technology Specialist (MCTS)
- Computer Systems Administrator
- Computer System Operator
- Systems Technician
- IS Technical Services Specialist
- Help Desk Analyst
- Email Administrator

With additional education and/or work experience, graduates may find employment as:

- Network Administrator
- Computer Operations Shift Supervisor
- Data Center Manager
- Chief Information Officer (CIO)
- Microsoft Certified Solutions Associate (MCSA)

More detailed and updated information on this program may be available at: madisoncollege.edu. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

Madison Area Technical College provides equal opportunity in education and employment.

Madison Area Technical College Information Technology— VMware Certified Professional Certificate

Effective: 2015-2016

Program Number: 90-154-3

Certificate

Information Technology Program Cluster

School of Business and Applied Arts

Program offered at Madison Campuses

For information call: (608) 246-6003 or
(800) 322-6282 Ext. 6003

About the Certificate

This certificate is designed for students who have already graduated with a degree in Computer Information Systems, Information Technology, or have significant IT industry work experience. The VCP certificate program provides students the skills required to install, configure, and manage VMware server virtualization infrastructures such as VMware vSphere. Upon completion of this course, you can take the examination to become a VMware Certified Professional.

VMware is the industry standard and most widely used server virtualization platform. VMware runs many of the IT infrastructures of small, medium, and large sized businesses world-wide. The VMware Certified Professional certification designates individuals who have demonstrated superior knowledge and skill levels with VMware virtualization infrastructures. It is a highly sought after certification for many prospective employers. For more information on this certification, see the VMware website at
<http://mylearn.vmware.com/mgr/Reg/plan.cfm?plan=12457&ui=www>

Requirements: Associate in Applied Science Degree in Networking, Network Security, or Computer Systems Administration, or industry experience with Windows, Linux, and Networking.

Admission Requirements

To review program admission requirements and application processing dates, visit the program's website at:
<http://madisoncollege.edu/program-info/it-vmware-certified-professional-certificate>.

Requirements for Completion

The certificate will be awarded upon completion of the requirements with a minimum of a 2.0 grade average and no course grade lower than a C. The certificate will be awarded when completion of all requirements is verified after the semester the last course has been completed.

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

Courses	Hrs/week	
	Credits	Lec-Lab
10-154-175 VMware Certified Professional (VCP)**	3	2-2

*Offered fall semester only

**Offered spring semester only

Note: All Information Technology courses require a grade of C or better in order to receive the certificate.

Courses

10-154-175 VMware Certified Professional (VCP) 3 credits

This hands-on training course explores installation, configuration, and management of VMware® vSphere™, which consists of VMware ESXi™ and VMware vCenter™ Server. Students are introduced to virtualization and storage management concepts using VMware server virtualization products. Prerequisite: must be enrolled in VMware Certified Professional Certificate (or have obtained a grade of "C" or better in Windows Active Directory, 10-154-172; or have consent of the instructor).

More detailed and updated information on this program may be available at:
madisoncollege.edu. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

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Madison Area Technical College Information Technology— Web Programmer

Effective: 2015-2016

Program Number: 31-152-6

Technical Diploma

Information Technology Program Cluster

School of Business and Applied Arts

Program offered at Madison Campuses

For information call:

(608) 246-6003 or (800) 322-6282 Ext. 6003

About the Program

The Fundamentals of Web Software Development Technical Diploma Program focuses on quickly developing the skills necessary for employment in the web development field. This program is structured in a manner that allows a full-time student to achieve these skills within one year. The courses in this program include all the first year technical security courses within the Associate in Information Technology Web Software Developer program and can also be applied toward that program.

Admission Requirements

To review program admission requirements and application processing dates visit the programs website at:

<http://programs.madisoncollege.edu/programs/it-web-programmer>

Program Courses

10-107-111 Exploration of Information Technology

1 credit

Introduces students to the various careers available in the vast field of Information Technology and examines the Network Specialist, Mobile Applications Developer, Web Software Developer, Computer Systems Administration Specialist, Help Desk Specialist, and Security Specialist care paths. Students create an individualized career path plan as the capstone project for the course. Prerequisite: working knowledge of Microsoft Windows (computer literacy, proficiency with a mouse, file management).

10-150-160 IT Security Awareness

1 credit

Provides a basic survey of the importance of IT security awareness and data confidentiality. This course walks users through basic aspects of information security in a very broad, easy to understand way and explains the value of securing data. The course will also present best practices in access control password policies.

10-152-119 Introduction to Programming with JavaScript

3 credits

Teaches the basic concepts of programming using the JavaScript language. Topics include: embedding JavaScript in HTML, event-driven programming techniques, program control logic, and an introduction to object-oriented programming. Co-requisite: 10-152-120.

10-152-120 Website Development-HTML5

3 credits

Teaches the fundamentals and techniques of developing business websites using XHTML-compliant HTML5. Topics include webpage design, tables, image manipulation, image maps, forms, cascading style sheets (CSS) and an introduction to JavaScript in conjunction with forms. All work is done directly with HTML5. Prerequisite: working knowledge of Microsoft Windows (computer literacy, proficiency with a mouse, file management).

10-152-124 Introduction to Database

3 credits

Introduces the student to relational database concepts using the MS Access database environment. Students then study concepts that lead to good relational database design including an introduction to normalization. Basic SQL statements are practiced also. Prerequisite: working knowledge of Microsoft Windows (computer literacy, proficiency with a mouse, file management).

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

First Semester		Credits	Hrs/week Lec-Lab
10-107-111	Exploration of Information Technology	1	1-0
10-150-160	IT Security Awareness	1	1-0
10-152-119	Introduction to Programming with JavaScript	3	2-2
10-152-120	Website Development-HTML5.....	3	2-2
10-152-124	Introduction to Database.....	3	2-2
10-801-195	Written Communication.....	3	3-0
Second Semester			
10-152-125	SQL Database Programming.....	3	2-2
10-152-130	Object-Oriented Design with UML	3	2-2
10-152-166	PHP Web Development with MySQL**.....	3	2-2
10-809-199	Psychology of Human Relations.....	3	3-0
Semester Total		12	

*Offered fall semester only

**Offered spring semester only

Note: All Information Technology courses require a grade of C or better in order to graduate.

Note: Students are assessed for correct placement in English or mathematics courses based on their scores on the COMPASS test or on completion of the appropriate prerequisite(s). Additionally, there may be courses in other subject areas that may use COMPASS scores as prerequisites when reading, writing, math, or critical thinking competencies are required.

10-152-125 SQL Database Programming

3 credits

Presents relational database concepts and teaches beginning to intermediate Structured Query Language (SQL) using an Oracle database. Students learn to create and maintain database objects and to store, retrieve, and manipulate data. Demonstrations and hands-on practice reinforce the fundamental concepts. Prerequisite: 10-152-124.

10-152-130 Object-Oriented Design w/UML

3 credits

Practical, introductory-level systems analysis experience. Emphasis is on the physical system elements: data design (record, file, database and entity-relationship diagrams), object-oriented design (use case, class and sequence diagrams), user interface design (screen and report) and system interface design (platforms and factoring). The use of CASE tools is integrated throughout the course. Prerequisites: 10-152-119 and 10-152-124.

10-152-166 PHP Web Development with MySQL

3 credits

This course introduces the student to dynamic web page development using the PHP programming language. Students will learn how PHP works, how to effectively use many of its powerful features, and how to design and build their own PHP web applications. The popular MySQL open source database management software (DBMS) will also be introduced as a powerful backend for PHP websites. Prerequisites: 10-152-119 and 10-152-124.

Career Potential:

More detailed and updated information on this program may be available at: madisoncollege.edu. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

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Madison Area Technical College Information Technology— Web Software Developer

Effective: 2015-2016

Program Number: 10-152-4

Associate in Applied Science Degree

Information Technology Program Cluster

School of Business and Applied Arts

Program offered at Madison Campuses

For information call: (608) 246-6003 or
(800) 322-6282 Ext. 6003

About the Program

The Web Software Developer program meets the specific skills and knowledge requirements of technical and professional jobs within the Information Technology field for an entry-level web analyst/programmer. It is designed to meet entry-level educational needs of most segments of the IT field which utilize a variety of computers. Training blends general educational development and required IT technical skills. Graduates are prepared for entry-level web developer jobs in government, insurance, manufacturing, service, software development, wholesale and retail sales, utilities, banking and accounting.

Admission Requirements

To review program admission requirements and application processing dates visit the programs website at:

<http://programs.madisoncollege.edu/programs/it-web-software-developer/>

NOTE: Students starting this program in a spring semester will need a minimum of 5 semesters to complete the program due to some courses being offered fall only or spring only. These students (and students going part-time) are advised to use the Planner in their student center account to map out the order in which to take the required courses semester by semester, taking into account any limited semesters courses are offered and any pre-requisites for the sequence of courses.

Program Courses

10-152-103 Web Application Development

Using ASP.NET

3 credits

Students learn to develop Microsoft ASP.NET applications that deliver dynamic content to the web. An emphasis is placed on server-side programming and the role of ASP.NET plays. As part of the class, students create web forms with server controls, display dynamic data from a database using Microsoft ADO.NET, read XML configuration files and learn to debug ASP.NET web pages. Prerequisites: 10-152-107 and 10-152-121.

10-152-106 C# Programming

3 credits

Teaches the basic concepts of C# programming. Topics include the Visual Studio Integrated Development Environment, program logic constructs, event-driven programming techniques, and development in an object-oriented context. Prerequisites: 10-107-111, 10-152-119, and 10-152-124.

10-152-107 Advanced C# Programming

3 credits

Provides students with a comprehensive understanding of object-oriented system development. It examines and uses the prewritten .NET Framework classes and explores the MSDN help facility. Topics include: collections, exception handling, interfaces and advanced development techniques such as XML and database programming using ADO.NET. Prerequisites: 10-152-106 and 10-152-125.

10-152-111 Java Programming

3 credits

Introduces programming and object-oriented design concepts using the Java programming language. Students learn all the Java programming basics and use a simple text editor as a development environment. Design concepts and programming tools will be integrated with an emphasis on practical business solutions. Prerequisites: 10-107-119 and 10-152-124.

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

First Semester	Credits	Hrs/week Lec-Lab
10-107-111 Exploration of Information Technology	1	1-0
10-150-160 IT Security Awareness	1	1-0
10-152-119 Introduction to Programming with JavaScript	3	2-2
10-152-120 Website Development-HTML5	3	2-2
10-152-124 Introduction to Database	3	2-2
10-801-195 Written Communication	3	3-0
10-804-144 Math of Finance	3	3-0
Semester Total	17	

Second Semester

Course #1 Emphasis Area Course #1 (see below)	3	2-2
10-152-125 SQL Database Programming	3	2-2
10-152-130 Object-Oriented Design with UML	3	2-2
10-152-166 PHP Web Development with MySQL**	3	3-0
10-801-196 Oral/Interpersonal Communication	3	3-0
10-809-199 Psychology of Human Relations	3	3-0
Semester Total	18	

Third Semester

Course #2 Emphasis Area Course #2 (see below)	3	2-2
10-107-175 Preparation for an IT Career	1	1-0
10-152-121 Advanced Website Development	3	2-2
10-152-131 Object-Oriented Systems Analysis*	3	2-2
10-801-197 Technical Reporting	3	3-0
Elective	3	E
Semester Total	16	

Fourth Semester

Course #3 Emphasis Area Course #3 (see below)	3	2-2
10-152-132 Web Software Developer Internship**	3	2-2
10-152-168 AJAX and JavaScript Web Development**	3	2-2
10-809-166 Introduction to Ethics: Theory and Application	3	3-0
10-809-197 Contemporary American Society	3	3-0
Elective	3	E
Semester Total	18	

.NET Emphasis

	Course Sequence
10-152-106 C# Programming**	#1
10-152-107 Advanced C# Programming*	#2
10-152-103 Web Application Development Using ASP.NET**	#3

Java Emphasis

	Course Sequence
10-152-111 Java Programming**	#1
10-152-112 Advanced Java Programming*	#2
10-152-113 Enterprise Java Programming**	#3

PHP Emphasis

	Course Sequence
10-154-190 Linux Server	#1
10-152-167 Advanced PHP & MySQL Web Development*	#2
10-152-157 Ruby on Rails Development** OR	#3
10-201-181 Intro to Computer Graphics	#3

*Offered fall semester only

**Offered spring semester only

Note: All Information Technology courses require a grade of C or better in order to graduate.

Note: Students are assessed for correct placement in English or mathematics courses based on their scores on the COMPASS test or on completion of the appropriate prerequisite(s). Additionally, there may be courses in other subject areas that may use COMPASS scores as prerequisites when reading, writing, math, or critical thinking competencies are required.

Recommended Electives

Electives must be associate degree (10-level) or college transfer (20-level) courses.

10-150-121 Intro to Cisco Networking	3 credits
10-152-143 iPhone Applications Development *	3 credits
10-152-189 Android Applications Development*	3 credits
10-154-190 Linux Server	3 credits



Program Courses (continued)

10-152-112 Advanced Java Programming 3 credits

Focuses on the server side of application programming for the web. Topics include: Java servlets, database access with JDBC, JavaServer Pages and JavaBeans. A portion of the class deals with application design issues in a web environment. Prerequisites: 10-152-111 and 10-152-125.

10-152-113 Enterprise Java Programming 3 credits

The third class of the Java sequence explores advanced concepts related to development within an enterprise environment. Topics include: information assurance and programmatic security, unit and regression testing, iterative development, parallelism, data access architectures, programmatic XML, and distributed object architectures. Prerequisites: 10-152-112 and 10-152-121.

10-152-119 Introduction to Programming with JavaScript 3 credits

Teaches the basic concepts of programming using the JavaScript language. Topics include: embedding JavaScript in HTML, event-driven programming techniques, program control logic, and an introduction to object-oriented programming. Co-requisite: 10-152-120.

10-152-120 Website Development-HTML5 3 credits

Teaches the fundamentals and techniques of developing business websites using XHTML-compliant HTML5. Topics include webpage design, tables, image manipulation, image maps, forms, cascading style sheets (CSS) and an introduction to JavaScript in conjunction with forms. All work is done directly with HTML5. Prerequisite: working knowledge of Microsoft Windows (computer literacy, proficiency with a mouse, file management).

10-152-121 Advanced Website Development-XML 3 credits

Provides the student with experience in the design and implementation of business internet websites using advanced command syntax. Topics include: JavaScript, browser object models, dynamic HTML, advanced cascading style sheets (CSS), XML, document type definitions, extensible stylesheet language transformations (XSLT), and XML schemas. Prerequisite: 10-152-120.

10-152-124 Introduction to Database 3 credits

Introduces the student to relational database concepts using the MS Access database environment. Students then study concepts that lead to good relational database design including an introduction to normalization. Basic SQL statements are practiced also. Prerequisite: working knowledge of Microsoft Windows (computer literacy, proficiency with a mouse, file management).

10-152-125 SQL Database Programming 3 credits

Presents relational database concepts and teaches beginning to intermediate Structured Query Language (SQL) using an Oracle database. Students learn to create and maintain database objects and to store, retrieve, and manipulate data. Demonstrations and hands-on practice reinforce the fundamental concepts. Prerequisite: 10-152-124.

10-152-130 Object-Oriented Design w/UML 3 credits

Practical, introductory-level systems analysis experience. Emphasis is on the physical system elements: data design (record, file, database and entity-relationship diagrams), object-oriented design (use case, class and sequence diagrams), user interface design (screen and report) and system interface design (platforms and factoring). The use of CASE tools is integrated throughout the course. Prerequisites: 10-152-119 and 10-152-124.

10-152-131 Object-Oriented Systems Analysis 3 credits

In this course, the student learns to analyze the business organization as a system, to structure both the information and processes of a business or organization, and to complete the systems development process through the logical design phase. The course utilizes an object-oriented methodology for the systems development process. Prerequisite: 10-152-130.

10-152-132 Web Software Developer Internship 3 credits

Opportunities for students to learn and practice web programming and analysis techniques through activities and experiences in an actual information systems department. Students will seek internship opportunities and interview to be selected for internships. The student spends approximately 216 hours over the course of the semester at the internship site. If no internship is available, a special project may be substituted for the internship by consent of the instructor. Activities include designing and testing new web programs, designing and modifying existing web programs, object oriented systems analysis and design, and sharing experiences with other interns. Prerequisites: 10-107-175, 10-152-121, and 10-152-131 and one of the following: 10-152-107 or 10-152-112, or 10-152-167.

10-152-157 Ruby on Rails Development 3 credits

Introduces the student to dynamic web page development using the Ruby on Rails web development framework. The course will also use the popular MySQL open source database management system. Topics will include an introduction to the Ruby programming language, installing Ruby and Ruby on Rails, an overview of the Rails Framework, ActiveRecord basics, ActionController coding, Action Views, AJAX and the Web 2.0, ActionMailer basics, security, deployment, and scaling. Students will produce a very modern web application that can be adapted to many professional web development needs. Prerequisite (one of the following): 10-152-107, 10-152-112, or 10-152-167.

10-152-166 PHP Web Development with MySQL 3 credits

This course introduces the student to dynamic web page development using the PHP programming language. Students will learn how PHP works, how to effectively use many of its powerful features, and how to design and build their own PHP web applications. The popular MySQL open source database management software (DBMS) will also be introduced as a powerful backend for PHP websites. Prerequisites: 10-152-119 and 10-152-124.

10-152-167 Advanced PHP and MySQL Web Development 3 credits

This course prepares the student to implement professional PHP and MySQL web applications. Students will learn advanced techniques for session management, validation, and authentication. Advanced web application features such as shopping carts, content management using Drupal, web forums and connecting to web services are discussed. Installation and customization of open source PHP web applications is also covered. Prerequisites: 10-152-125 and 10-152-166.

10-152-168 AJAX and JavaScript Web Development 3 credits

AJAX turns static web pages into interactive applications, allowing you to deploy rich-client applications. Course covers the basics of DHTML, JavaScript, and the XMLHttpRequest call. Students learn how to add JavaScript and AJAX to existing programs, and design new applications to exploit the power of Web 2.0. Students learn the three layers of AJAX framework, and when (and how) to use each. Students learn how to create rich clients, use visual effects, add client-side validation, and handle forms. Prerequisites: 10-152-121 and one of the following: 10-152-107, 10-152-112, or 10-152-167

10-154-190 Linux Server 3 credits

Introduces Linux with a focus on system administration skills. Topics include installation, file and directory management, command execution, input/output redirection and pipes, shell scripts, network services, security, troubleshooting and the X Window system. Prerequisite: 10-152-119.

10-201-181 Intro to Computer Graphics 3 credits

Introductory course in electronic layout and design, illustration, and photo manipulation, using the following Adobe Creative Suite software programs: InDesign, Illustrator, Photoshop, Bridge and Acrobat.

Career Potential:

- **Web Developer**
- **Web Application Developer**
- **Programmer/Analyst**

With additional education and/or work experience, graduates may find employment as:

- **Web Designer**
- **Web Architect**
- **Systems Analyst**
- **Systems Programmer**
- **Database Programmer**
- **Project Manager**
- **Information Systems Department Manager**

More detailed and updated information on this program may be available at: madisoncollege.edu. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

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Rev. 04/15

Certificate

Protective Services Program Cluster

School of Human and Protective Services

Program offered at Truax Campus

**For information call: (608) 246-5297 or
(800) 322-6282 Ext. 5297**

About the Certificate

The Basic Jail Academy provides the curriculum required for jail officer certification with the Wisconsin Department of Justice, Law Enforcement Standards Board. This 160 hour course focuses on the philosophical and tactical principles of working as a correctional officer in Wisconsin. It includes a skills-assessment examination prior to completion to verify student competence. Topics covered include state law and administration code provisions governing county jail operations, the basic constitutional rights of prisoners, as established by Federal Courts, and basic guidelines regarding effective correctional practices and procedures. Upon the successful completion of the program, a student will be eligible for certification with the Wisconsin Department of Justice, Law Enforcement Training and Standards Board as a jail officer.

Admission Requirements

To review program admission requirements and application processing dates, visit the program's website at:
<http://madisoncollege.edu/program-info/jail-officer>.

Requirements for Completion

The certificate will be awarded upon completion of the requirements with a minimum of a 2.0 grade point average and no course grade lower than a C. The certificate will be awarded when completion of all requirements is verified.

Career Potential:

- Jail Officer
- Corrections Officer

With additional education and/or work experience, may find employment as:

- Secure Detention Worker
- Deputy Sheriff

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

Courses	Credits	Hrs/week Lec-Lab
30-504-350 Basic Jail Officer Certification	4	30-10
Total	4	

Courses

30-504-350 Basic Jail Officer Certification 4 credits

Jail Officer Certification Academy provides the curriculum required for jail officer certification required by the Wisconsin Law Enforcement Standards Board. This course focuses on the philosophical and tactical principles of working as a correctional officer in Wisconsin. It includes a skills-assessment examination prior to completion to verify student competence. Topics covered include state law and administration code provisions governing county jail operations, the basic constitutional rights of prisoners, as established by Federal Courts, and basic guidelines regarding effective correctional practices and procedures. Upon the successful completion of the program, a student will be eligible for certification with the Wisconsin Department of Justice, Law Enforcement Training and Standards Board as a jail officer.

Students seeking admission to the Jail Officer Certification must be at least 18 years of age; possess a high school diploma or equivalent; complete the Wisconsin Department of Justice Application for Enrollment - Jail Officer Training (DJ-LE-327); possess a valid Wisconsin Driver's License; complete a criminal history records check; and complete a satisfactory oral interview. Students accepted into the Jail Officer Certification Course must undergo a physical assessment by a Wisconsin licensed physician.

Contact the Criminal Justice Department in the School of Human and Protective Services at (608) 246-5297 for specific application materials.

Enrollment is regulated by the Wisconsin Department of Justice.

More detailed and updated information on this program may be available at: madisoncollege.edu. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

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Journalism

Program Number: 90-801-2

Certificate

School of Arts and Sciences

Program offered at Madison Campus

For information call:

(608) 246-6246 or 258-2389

OR (800) 322-6282 ext. 6246 or ext. 2389

About the Certificate

The Journalism Certificate gives students the basic understanding and skills needed to work as an entry-level journalist. Students acquire the skills to work as a news reporter, feature writer, public relations writer, social media writer, video journalist, web writer, or copy editor. The certificate can also be used as a "platform" to a four-year degree in journalism or communications. Students need only complete the curriculum requirements to earn the certificate.

5 Reasons For a Journalism Certificate

Students completing the Madison College Journalism Certificate Program can use this certificate in different ways:

- 1) Gain employment in the field of journalism. Past students have left the Madison College Certificate Program and have landed full-time or part-time jobs in journalism or public relations. Oftentimes students have used the skills they acquired in the program to specialize as freelance writers or to work in intern positions.
- 2) Use as "platform" to four-year school. Students can gain journalism credits that transfer to colleges and universities in Wisconsin and elsewhere.
- 3) Develop a portfolio of published work. Students develop their own portfolios of published work. Each student will also leave the Journalism Certificate Program with a quality cover letter/resume.
- 4) Use journalism credits for associate degree. Journalism credits can be used as electives for the Liberal Arts associate degree.
- 5) Enhance your media literacy and communication skills. The Journalism Certificate program will show you how the media operates in our society. At the same time, you will sharpen your communication skills.

Admission Requirements

To review program admission requirements and application processing dates visit the program's website at:

<http://madisoncollege.edu/program-info/journalism-certificate>.

Requirements for Completion

The certificate will be awarded upon completion of the requirements with a minimum of a 2.75 grade average, and no course grade lower than a BC. The certificate will be awarded when completion of all requirements is verified after the semester the last course has been completed. No more than 50% of the certificate credits may be through advanced standing.

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

Required Courses		Credits	Hrs/week Lech-Lab
20-801-245	News Writing.....	3	3-0
20-801-246	Feature Writing.....	3	3-0
20-801-253	Documentary Storytelling.....	3	2-2
20-801-262	Social Media Writing.....	3	3-0
20-801-271	Journalism Practicum 1.....	1-2	2-0

Electives

Students must also complete at least/a minimum 5 credits from the following electives:

10-203-173	Photojournalism.....	2	0-4
10-206-147	Intro to DSLR Video Production.....	2	0-4
20-801-251	Intro to Mass Communication.....	4	4-0
20-801-252	World Issues Journalism.....	3	3-0
20-801-272	Journalism Practicum 2.....	1-2	2-0
20-801-273	Journalism Practicum 3.....	1-2	2-0
20-801-273	Journalism Practicum 4.....	1-2	0-4
20-815-239	Digital Photography.....	3	0-6
Total		5 (minimum)	

Certificate Total

19 (minimum)

Note:

- Students must earn a grade of BC or higher in all courses to be awarded the certificate.
- In addition to the successful completion of 18 credits, students must do the following:
 - Submit a portfolio of written work that includes at least three quality news articles or

- b) Submit a quality cover letter/resume.

Courses

10-203-173 Photojournalism 2 credits

Photography for publication with the visual image used to relate events, ideas or circumstances. Students are exposed to techniques in which news stories can be communicated through visual images in print. Prerequisite: 10-203-107 or consent of instructor

10-206-147 Introduction to DSLR Video Production 2 credits

Photography for publication with the visual image used to relate events, ideas or circumstances. Students are exposed to techniques in which news stories can be communicated through visual images in print. Prerequisite: 10-203-107 or consent of instructor

20-801-245 News Writing 3 credits

Immerses the student in the world of journalism. Students will learn the foundations of journalism with a focus on reporting and writing the news. Students who successfully complete the course will have demonstrated their ability to interview sources, research issues, and write news stories that are timely, compelling and accurate. Students will learn how to report and write about community issues in areas such as politics, crime, and entertainment (i.e., sports and music).



Courses (cont.)

20-801-246 Feature Writing 3 credits

In Feature Writing students develop skills of reportage and story development to create feature articles appropriate to journalism, freelance writing, etc. Reading assignments allow students to become familiar with principles and practice of feature writing. Class meetings follow a newsroom format where deadlines, correspondence, and interview skills are learned and practiced. Prerequisite: English 1, 20-801-201 or Communication Skills 1, 10-801-151, or the instructor's consent.

20-801-251 Intro to Mass Communication 4 credits

Focuses on the history, evolution, and societal role of our media. This course is divided into three modules. Module 1 ("Storytelling and the Written Word") focuses on the evolution of books, newspapers, and magazines. In addition, students will learn how the written communication is changing because of social media and media convergence. Module 2 ("Sound and Visual Stories") examines the music industry, radio, television, and film. In addition, the video gaming industry is explored. Module 3 ("The Business, Ethics, and Laws of Media") focuses on advertising, public relations, and media conglomeration. In addition, laws and ethical situations affecting our media will be discussed. Prerequisite: English 1, 20-801-201, or Written Communication, 10-801-195, or the instructor's consent.

20-801-252 World Issues Journalism 3 credits

This course focuses on radio news reporting skills that are applied to world issues: water, energy, food, war, and free speech. Students will investigate these issues to produce audio podcast news stories. Students will learn how to write radio news scripts before orally presenting them using audio podcast software. Prerequisites: English 1, 20-801-201 or Written Communications, 10-801-195 or Communication Skills 1, 10-801-151 or the instructor's consent.

20-801-253 Documentary Storytelling 3 credits

Documentary Storytelling is an introduction to the craft of telling non-fiction and news stories through the medium of digital video. This course will teach news reporting and writing skills needed for the documentary format, along with journalism theory, law, and ethics of video journalism. Students will also learn basic digital camcorder operation, storyboard development, video editing, sound editing, and podcasting. Pre-requisite: English 1, 20-801-201 or Written Communications, 10-801-195 or the instructor's consent.

20-801-262 Social Media Writing 3 credits

This course examines the rhetorical and publishing strategies used for innovative new media formats, in particular social media platforms. Students will look at the differences between linear and interactive writing, interactive publishing, and the role of the interactive writer. An emphasis is placed on the skills needed for quality storytelling via social media communication. Students will also learn how social media platforms can be used as researching tools (i.e. crowd sourcing), and they will implement social media research campaigns. Throughout the course, the students' writing and research work will be showcased as text, video, and audio stories published on their own Web/blog sites.

20-801-271 Journalism Practicum 1 1-2 credits

Journalism Practicum 1 provides real-world journalism skills and experiences for students. Students will spend the semester working on the staff of The Clarion, which is the student media organization, consisting of its newspaper, Web platform, television news program, and outreach services (i.e. classroom presentations; volunteer events; co-sponsorship of lecture series). In Journalism Practicum 1 students will perform service hours contributing news and feature stories and photographs to The Clarion. Students of Journalism Practicum 1 will attend editorial meetings, contribute story ideas and report, write and edit news and feature stories. Students who take Journalism Practicum 1 as a one-credit course must spend at least 36 hours working as a news reporter for The Clarion. Students who take Journalism Practicum 1 as a two-credit course must spend 72 hours working as a Clarion journalist.

20-801-272 Journalism Practicum 2 1-2 credits

Journalism Practicum 2 is a follow-up to Journalism Practicum 1. It provides real-world journalism skills and experiences for students. Students will spend the semester working on the staff of The Clarion. In Journalism Practicum 2 students will perform service hours engaged in issue-based journalism for The Clarion media organization. These students will develop enterprise and investigative news and feature stories for The Clarion; they will also copy, edit and fact check these longer, issue-based news stories. Students of Journalism Practicum 2 will attend editorial meetings, contribute story ideas and then develop these story ideas according to the deadlines. Students who take Journalism Practicum 2 as a one-credit course must spend at least 36 hours working as a news reporter for The Clarion. Students who take Journalism Practicum 2 as a two-credit course must spend 72 hours working as a Clarion journalist. Prerequisite: 20-801-271

20-801-273 Journalism Practicum 3 1-2 credits

Journalism Practicum 3 is a follow-up to Journalism Practicum 2. Students will spend the semester working on the staff of The Clarion. In Journalism Practicum 3 students perform service hours engaged in news reporting, copyediting and new media activities for The Clarion media organization. In addition to continuing the news reporting and writing that they did for Journalism Practicums 1 and 2, students will develop visual and digital video stories, as well as work with basic elements of newspaper design. Students of Journalism Practicum 3 will attend editorial meetings, contribute news and new media story ideas and then develop these story ideas according to deadlines. Students who take Journalism Practicum 3 as a one-credit course must spend at least 36 hours working as a news reporter for The Clarion. Students who take Journalism Practicum 3 as a two-credit course must spend 72 hours working as a Clarion journalist. Prerequisite: 20-801-272

20-801-274 Journalism Practicum 4 1-2 credits

Journalism Practicum 4 is a follow-up to Journalism Practicum 3. Students will spend the semester working on the staff of The Clarion. In Journalism Practicum 4, students will perform service hours engaged in high-level editing, managing and directing activities for The Clarion media organization. In addition to continuing the news reporting, news writing, video journalism, and photojournalism that they did for Journalism Practicums 1, 2, and 3, students will assume high-level management roles, as well as work with advanced elements of newspaper design and broadcast direction. Students of Journalism Practicum 4 will lead editorial meetings, direct supporting staff, and manage the development of all Clarion operations. Students who take Journalism Practicum 4 as a one-credit course must spend at least 36 hours working as a news reporter for The Clarion. Students who take Journalism Practicum 4 as a two-credit course must spend 72 hours working as a Clarion journalist. Prerequisite: 20-801-273

20-815-239 Digital Photography 3 credits

Journalism Practicum 4 is a follow-up to Journalism Practicum 3. Students will spend the semester working on the staff of The Clarion. In Journalism Practicum 4, students will perform service hours engaged in high-level editing, managing and directing activities for The Clarion media organization. In addition to continuing the news reporting, news writing, video journalism, and photojournalism that they did for Journalism Practicums 1, 2, and 3, students will assume high-level management roles, as well as work with advanced elements of newspaper design and broadcast direction. Students of Journalism Practicum 4 will lead editorial meetings, direct supporting staff, and manage the development of all Clarion operations. Students who take Journalism Practicum 4 as a one-credit course must spend at least 36 hours working as a news reporter for The Clarion. Students who take Journalism Practicum 4 as a two-credit course must spend 72 hours working as a Clarion journalist. Prerequisite: 20-801-273

Career Potential:

- News Reporter
- Feature Writer
- Public Relations Editor
- Copy Editor
- Radio Reporter
- Social Media Writer
- Video Journalist
- Web Writer

More detailed and updated information on this program may be available at: madisoncollege.edu. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

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Rev. 07/15

Criminal Justice— Law Enforcement 720 Academy

Program Number: 30-504-2

Less-Than-One-Year Diploma

Protective Services Program Cluster

School of Human and Protective Services

Program offered at Truax Campus

For information call:

(608) 243-5400 or (800) 322-6282 Ext. 5400

About the Program

The Law Enforcement Academy prepares candidates for entry-level positions as law enforcement officers at the municipal, county and state level. This program is limited to sworn law enforcement officers assigned by their department with the approval of the Wisconsin Department of Justice. Exceptions to this are granted on a space available basis to candidates who complete the process identified below. Admission is restricted to those who qualify under the Administrative Code of the Wisconsin Law Enforcement Standards Board.

Graduates seeking employment will be required to pass a physical exam and meet physical fitness standards; have possession of a valid driver's license and a good driving record; and have no conviction of a felony offense. Positions require a background investigation, psychological testing and mandatory drug testing. An applicant for employment as a law enforcement officer must possess either 1) a two-year associate degree from a Wisconsin technical college or its accredited equivalent from another state or 2) a minimum of 60 fully accredited college-level credits.

Admission Requirements

To review admissions program requirements and application processing dates, visit the program's website at: <http://madisoncollege.edu/program-info/law-enforcement-academy>.

Certification Requirements

Completion of the basic course does not equal certification. Certification is granted by the Law Enforcement Standards Board (LESB) only upon employment as a law enforcement officer and after meeting all employment and training standards required by the LESB.

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

Course	Credits
30-504-310 Application of Investigations	2
30-504-311 Application of Traffic Response.....	2
30-504-312 Health and Fitness	1
30-504-313 Overview of Criminal Justice	1
30-504-314 Overview of Investigations	2
30-504-315 Overview of Patrol Response	2
30-504-316 Overview of Tactics	1
30-504-317 Principles of Emergency Vehicle Response.....	2
30-504-318 Principles of Investigations.....	2
30-504-319 Principles of Patrol Response	2
30-504-320 Principles of Tactics	3
Total	20

Note: A copy of the essential functions necessary to successfully complete the program of study is available upon request from the department office.

Program Courses

30-504-310 Application of Investigations 2 credits

Through classroom lecture, and on-campus lab, and WI Department of Justice 720 Academy integration exercises students will learn and apply skills addressed in the following Phase III topics of the Department of Justice 720 Academy curriculum framework: Ethics II: Moral Reasoning and Professional Responsibility, Cultural Competence II: Fair and Impartial Policing, Victims, Sexual Assault, Child Maltreatment, Interrogations, Testifying in Court, and Crimes III. The Department of Justice Phase III written examination will be administered at the conclusion of this course..

30-504-311 Application of Traffic Response 2 credits

Through classroom lecture, and on-campus lab, students will learn and apply skills addressed in the following Phase III topics from the WI Department of Justice 720 Academy curriculum framework: Traffic Law Enforcement - Core and Radar, Traffic Crash Investigations & Incident Management, Operating a Motor Vehicle While Intoxicated (OMVWI), Standardized Field Sobriety Tests (SFST), and Report Writing. The Department of Justice Phase III written examination will be administered at the conclusion of this course.

30-504-312 Health and Fitness 1 credit

Through classroom lecture and on-campus lab students will apply Phases I-III Health Fitness WI Department of Justice 720 Academy curriculum framework program requirements. The Department of Justice Phase III written examination will be administered at the conclusion of this course.

30-504-313 Overview of Criminal Justice 1 credit

Through classroom lecture and WI Department of Justice 720 Academy integration exercises, students will learn and apply skills addressed in the following WI Department of Justice 720 Academy Phase I curriculum framework topics: Academy Orientation, Fundamentals of Criminal Justice, Ethics, Cultural Competency, Agency Policy, and Professional Communication. The Department of Justice Phase I written examination will be administered at the conclusion of this course.

30-504-314 Overview of Investigations 2 credits

Through classroom lecture, on-campus lab, and WI Department of Justice 720 Academy integration exercises students will learn and apply skills addressed in the following Department of Justice 720 Academy curriculum framework Phase I topics: Constitutional Law I, Crimes I, Juvenile Law I, Interviews, Report Writing, and Physical Evidence. The Department of Justice Phase I written examination will be administered at the conclusion of this course.

30-504-315 Overview of Patrol Response 2 credits

Through classroom lecture, and on-campus lab, and WI Department of Justice integration exercises students will learn and apply skills addressed in the following WI Department of Justice 720 Academy curriculum framework Phase I topics: Critical Thinking and Decision-Making, Basic Response (RESPOND), Radio Procedures, Introduction to TraCS, Traffic Law Enforcement, and First Aid/CPR/AED. This course will also include the WI DOJ 720 Academy Integration Exercises. The Department of Justice Phase I written examination will be administered at the conclusion of this course.

30-504-316 Overview of Tactics 1 credit

Through classroom lecture, and on-campus lab and WI Department of Justice 720 Academy integration exercises, students will learn and apply skills addressed in the following Department of Justice 720 Academy curriculum framework Phase I topics: Fundamentals of Firearms, Vehicle Contacts I, Officer Wellness, and DAAT. The Department of Justice Phase I written examination will be administered at the conclusion of this course.

30-504-317 Principles of Emergency Vehicle Response 2 credits

Through classroom lecture, and on-campus lab, and WI Department of Justice 720 Academy integration exercises students will learn and apply skills addressed in the following Department of Justice 714 Academy Phase II topics: Emergency Vehicle Operation and Control (EVOC) and Vehicle Contacts II. The Department of Justice Phase II written examination will be administered at the conclusion of this course.

30-504-318 Principles of Investigations 2 credits

Through classroom lecture, and on-campus lab, and WI Department of Justice 720 Academy integration exercises students will learn and apply skills addressed in the following Phase II topics of the WI Department of Justice 720 Academy curriculum framework: Constitutional Law II, Crimes II, Domestics, and Report Writing. The Department of Justice Phase II written examination will be administered at the conclusion of this course.

30-504-319 Principles of Patrol Response 2 credits

Through classroom lecture, and on-campus lab, and WI Department of Justice 720 Academy integration exercises students will learn and apply skills addressed in the following WI Department of Justice 720 Academy curriculum framework Phase II topics: Professional Communication Skills II, Incident Command Systems and NIMS, Hazardous Materials and WMD, Tactical Response, Crisis Management, and Tactical Emergency Casualty Care. The Department of Justice Phase II written examination will be administered at the conclusion of this course.

30-504-320 Principles of Tactics 3 credits

Through classroom lecture and on-campus lab students will learn and apply skills addressed in the following Phase II topics from the Department of Justice 720 Academy curriculum frameworks: DAAT and Firearms II. The Department of Justice Phase II written examination will be administered at the conclusion of this course.

Career Potential:

- Revenue Agent
- Deputy Sheriff
- Police Officer
- Special Agent
- Park Ranger
- Conservation Warden

With additional education and/or work experience, graduates may find employment as:

- Detective
- Sergeant
- Lieutenant
- Captain
- Chief

More detailed and updated information on this program may be available at: madisoncollege.edu. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

Madison Area Technical College provides equal opportunity in education and employment.

Liberal Arts Transfer

Program Numbers: Arts - 20-800-1A
Science – 20-800-1S

School of Arts and Sciences

Courses offered at Madison, Fort Atkinson, Portage, Reedsburg, Watertown, and Online

For information call: (608) 246-6246 or (800) 322-6282 Ext. 6246

Mission Statement

The Liberal Arts Transfer program serves students who wish to earn an Associate in Arts (AA) or Associate in Science (AS) degree and/or who intend to transfer to a four-year university. The program provides students with an excellent foundation for continuing in higher education.

By completing the AA or AS degree at Madison College, students will generally satisfy the first two years of general education requirements for four-year colleges and universities and obtain an educational foundation in English, humanities, mathematics, natural sciences, social and behavioral sciences, and world languages. Students who have a particular four-year institution in mind should verify the transferability of their courses to that school to satisfy requirements for the major and for graduation.

The Liberal Arts Transfer program provides courses in:

Discipline	Subject Code
• Art	815
• Anthropology	809
• Biology	806
• Chemistry	806
• Communication & Performing Arts	810
• Economics	809
• English	801
• History	803
• Journalism	801
• Mathematics	804
• Music	805
• Philosophy	809
• Physical Education	807
• Physical Science	806
• Political Science	809
• Psychology	809
• Sociology	809
• World Languages	802

Admission Requirements

To review program admission requirements and application processing dates, visit the program website at: <http://madisoncollege.edu/liberal-arts-transfer-program>

Honors Courses are available in the following disciplines: English, history, mathematics, computer science, biology, chemistry, psychology, anthropology, economics, philosophy, political science, and sociology.

To participate in the Honors Program contact:
Julia Haseleu JHaseleu@madisoncollege.edu
Honors Website: <http://madisoncollege.edu/honors-program>

Associate in Arts Degree

64 credits

The requirements below are in effect for students officially admitted in the 2015-2016 academic year. Requirements for the degree may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

Minimum Requirements

Credits

English and Speech	9
Six credits must be in composition - English 1 and one other composition course (English 2 recommended) - and three credits must be in public speaking.	
Health/Wellness/Physical Education	1
Humanities/Fine Arts	15
Courses must be from at least three disciplines; one course in literature is required. Select from art appreciation/history, creative writing, drama, film, literature, communications, music history or theory, philosophy, and world languages. A maximum of three credits of studio/hands-on courses in art, creative writing, drama, and music may be applied.	
Mathematics and Natural Science	11
Intermediate Algebra meets the minimum requirement in mathematics. Select one biological science and one physical science; one of the science courses must include a laboratory.	
Social Science	15
Select from at least three disciplines: anthropology, economics, history, political science, psychology, sociology, and interdisciplinary social science.	
Electives	13
Select college transfer courses beyond the minimum requirements. A maximum of one credit of a physical education activity course may be selected. A maximum of six credits from a two-year occupational/applied associate degree program may be used.	
Ethnic Studies	
One course required. Course may also count toward Humanities/Fine Arts, Social Science, or Electives.	
World Languages	
May be met with one year in high school with a grade of 'C' or better OR one semester in college. College course may also count toward Humanities/Fine Arts or Electives.	

Associate in Science Degree

64 credits

Minimum Requirements

Credits

English and Speech	9
Six credits must be in composition - English 1 and one other composition course (English 2 recommended) - and three credits must be in public speaking.	
Health/Wellness/Physical Education	1
Humanities/Fine Arts	9
Courses must be from at least <u>two</u> disciplines; one course in literature is required. Select from art appreciation/history, creative writing, drama, film, literature, communications, music history or theory, philosophy, and world languages. A maximum of three credits of studio/hands-on courses in art, creative writing, drama, and music may be applied.	
Mathematics and Natural Science	20
Calculus and Analytic Geometry 1 must be completed. Select one biological science and one physical science; both of the science courses must include a laboratory.	
Social Science	9
Select from at least <u>two</u> disciplines: anthropology, economics, history, political science, psychology, sociology, and interdisciplinary social science.	
Electives	16
Select college transfer courses beyond the minimum requirements. A maximum of one credit of a physical education activity course may be selected. A maximum of six credits from a two-year occupational/applied associate degree program may be used.	
Ethnic Studies	
One course required. Course may also count toward Humanities/Fine Arts, Social Science, or Electives.	
World Languages	
May be met with one year in high school with a grade of 'C' or better OR one semester in college. College course may also count toward Humanities/Fine Arts or Electives.	



English and Speech Requirement

Credits Category

Composition Courses

20-801-201	English 1 (required).....	3	ENGLISH
20-801-202	English 2.....	3	COMP
20-801-245	News Writing.....	3	COMP, *HM
20-801-246	Feature Writing.....	3	COMP, *HM
20-801-251	Intro to Mass Communication.....	4	COMP, HM

Public Speaking Courses

10-801-198	Speech.....	3	SPCH
20-810-202	Theory & Practice of Argumentation and Debate.....	3	SPCH
20-810-211	Oral Interpretation.....	3	SPCH

Health/Wellness/Physical Education Requirement

20-807-210	Conditioning/Weight Training.....	1	PE
20-807-223	Beginning Volleyball.....	1	PE
20-807-229	Swimming for Fitness.....	1	PE
20-807-230	Beginning Swimming.....	1	PE
20-807-232	Water Exercise.....	1	PE
20-807-233	Lifeguard Training.....	2	PE
20-807-236	Beginning Tennis.....	1	PE
20-807-245	Social Dance.....	1	PE
20-807-247	Jazz 1.....	1	PE
20-807-248	Ballet.....	1	PE
20-807-250	Badminton.....	1	PE
20-807-252	Beginning Pilates.....	1	PE
20-807-254	Beginning Yoga.....	1	PE
20-807-255	Prevention and Care of Athletic Injuries.....	2	PE
20-807-260	Martial Arts Fundamentals.....	1	PE
20-807-264	Intermediate Yoga.....	1	PE
20-807-266	Wellness Today.....	2	PE
20-807-267	Health & Fitness for Life.....	1	PE
20-807-271	Bicycle Conditioning.....	1	PE
20-807-289	Aerobics and Weight Training.....	1	PE

Humanities/Fine Arts Requirement

Literature Courses

20-801-204	Introduction to Literature.....	3	HM, LIT
20-801-207	World Indigenous Literatures.....	3	HM, LIT, ETH
20-801-210	American Short Story.....	3	HM, LIT
20-801-211	Gay & Lesbian Literature.....	3	HM, LIT
20-801-212	Ethnic Literature.....	3	HM, LIT, ETH
20-801-213	Native American Literature.....	3	HM, LIT, ETH
20-801-214	African American Literature.....	3	HM, LIT, ETH
20-801-215	British Literature 1.....	3	HM, LIT
20-801-216	British Literature 2.....	3	HM, LIT
20-801-217	American Literature 1.....	3	HM, LIT
20-801-218	American Literature 2.....	3	HM, LIT
20-801-219	Western World Lit: Classical Antiquity to the Middle Ages.....	3	HM, LIT
20-801-220	Western World Lit: Early Renaissance to Present.....	3	HM, LIT
20-801-221	Literature and Popular Culture.....	3	HM, LIT
20-801-222	U.S. Latino Literature.....	3	HM, LIT, ETH
20-801-223	Peace, Conflict, and Literature: The Arts of the Contact Zone.....	3	HM, LIT
20-801-226	Intro to African Literature.....	3	HM, LIT
20-801-227	Children's Literature.....	3	HM, LIT
20-801-229	Contemporary Literature.....	3	HM, LIT
20-801-230	Classical Mythology.....	3	HM, LIT
20-801-231	19th c. Russian Literature.....	3	HM, LIT
20-801-232	20th c. Russian Literature.....	3	HM, LIT
20-801-250	Women in Literature.....	3	HM, LIT
20-802-250	Literature in Translation.....	3	HM, LIT

Communications Courses

20-801-251	Intro to Mass Communication.....	4	COMP, HM
20-810-205	Small Group and Interpersonal Communication.....	3	HM

Art History/Appreciation Courses

20-815-200	Introduction to Art History.....	3	HM
20-815-201	Basic Design.....	3	*HM
20-815-202	Color and Design.....	3	*HM
20-815-203	Three-Dimensional Design.....	3	*HM
20-815-205	Drawing Fundamentals.....	3	*HM
20-815-208	Contemporary Art Survey.....	3	*HM
20-815-210	Art History: The Modern Era.....	3	HM
20-815-211	Women in the Arts.....	1	HM
20-815-214	Modern Art Survey.....	3	*HM
20-815-215	Drawing 2.....	3	*HM
20-815-218	Independent Project in Studio Art.....	2-3	*HM
20-815-219	Life Drawing.....	3	*HM
20-815-220	Advanced Life Drawing.....	3	*HM
20-815-232	Digital Design Fundamentals.....	3	*HM
20-815-234	Photography.....	3	*HM
20-815-235	Creative Photography.....	3	*HM
20-815-236	Advanced Creative Photography.....	3	*HM
20-815-239	Digital Photography 1.....	3	*HM
20-815-241	Painting 1.....	3	*HM
20-815-242	Painting 2.....	3	*HM
20-815-253	Jewelry 1—Art Metal.....	3	*HM
20-815-254	Jewelry 2—Art Metal.....	3	*HM
20-815-256	Art Metal Welding.....	3	*HM
20-815-290	Ceramics 1.....	3	*HM
20-815-291	Ceramics 2.....	3	*HM
20-815-292	Watercolor 1.....	3	*HM
20-815-294	Sculpture 1.....	3	*HM
20-815-295	Sculpture 2.....	3	*HM
20-815-296	Ceramics Firing Techniques.....	3	*HM
20-815-297	Watercolor 2.....	3	*HM

Creative Writing/Journalism Courses

20-801-240	Creative Writing.....	3	*HM
20-801-241	Creative Writing/Fiction.....	3	*HM
20-801-242	Creative Writing/Drama.....	3	*HM
20-801-243	Creative Writing/Poetry.....	3	*HM
20-801-244	Creative Writing/Nonfiction.....	3	*HM
20-801-245	News Writing.....	3	COMP, *HM
20-801-246	Feature Writing.....	3	COMP, *HM
20-801-249	Film Writing.....	3	*HM
20-801-252	World Issues Journalism.....	3	*HM
20-801-253	Documentary Storytelling.....	3	*HM
20-801-262	Social Media Writing.....	3	*HM
20-801-271	Journalism Practicum 1.....	1-2	*HM
20-801-272	Journalism Practicum 2.....	1-2	*HM
20-801-273	Journalism Practicum 3.....	1-2	*HM
20-801-274	Journalism Practicum 4.....	1-2	*HM

Drama Courses

20-810-230	Intro to Theatre.....	3	HM
20-810-232	International Arts Intensive-Theater (study abroad).....	3	HM
20-810-235	Stagecraft 1.....	3	*HM
20-810-236	Stagecraft 2.....	3	*HM
20-810-238	Cultural Diversity in Contemporary Amer Theater.....	3	HM
20-810-260	Drama Practicum.....	1-2	*HM
20-810-262	Acting 1.....	3	*HM
20-810-263	Acting 2.....	3	*HM
20-810-270	Movement Theory and Training for Actors.....	1	*HM

Film Courses

20-8
 20-8

Requirement Category Key:

COMP Composition	BIO Biological Science (*indicates with lab)
LIT Literature	HM Humanities/Fine Arts (*indicates studio/hands-on)
SPCH Speech	PE Health/Wellness/Physical Education
ETH Ethnic Studies	PHYS Physical Science (*indicates with lab)
MTH Mathematics	WL World Language
SS Social Science	EL Elective

**Madison Area Technical College
Liberal Arts Transfer**

Humanities/Fine Arts Requirement cont'd

Program Numbers: 20-800-1A & 20-800-1S

Credits Category

Credits Category

Music History/Theory Courses

20-805-205	Class Voice 1	1	*HM
20-805-206	Class Voice 2	1	*HM
20-805-207	World Music	3	HM
20-805-209	Swing Choir	1	*HM
20-805-211	Orchestra 1	1	*HM
20-805-212	Orchestra 2	1	*HM
20-805-216	Concert Band 1	1	*HM
20-805-217	Concert Band 2	1	*HM
20-805-219	Jazz Ensemble 1	1	*HM
20-805-220	Jazz Ensemble 2	1	*HM
20-805-221	Class Piano 1	1	*HM
20-805-222	Class Piano 2	1	*HM
20-805-227	Music Appreciation	3	HM
20-805-232	International Arts Intensive-Music (study abroad)	3	HM
20-805-260	Music Theory Fundamentals	3	HM
20-805-261	Music Theory 1	3	HM
20-805-262	Music Theory 2	3	HM
20-805-263	Jazz History	3	HM
20-805-267	Aural Skills 1	1	HM
20-805-268	Aural Skills 2	1	HM
20-805-270	Madison College Chorale	1	*HM
20-805-271	Madison College Chorale 2	1	*HM
20-805-272	Madrigal Choir	1	*HM
20-805-278	History of Pop and Rock Music	3	HM
20-805-279	World Drumming Ensemble 1	1	*HM
20-805-280	World Drumming Ensemble 2	1	*HM
20-805-281	World Drumming Ensemble 3	1	*HM
20-805-282	World Drumming Ensemble 4	1	*HM

Philosophy Courses

20-809-259	Classics in Philosophy	3	HM
20-809-260	Intro Philosophy	3	HM
20-809-261	Elementary Logic	4	HM
20-809-262	Contemporary Moral Issues	3	HM
20-809-263	East/West Worldviews	3	HM
20-809-264	Introduction to Logic and Critical Thinking	3	HM
20-809-266	Ethics in Medicine	3	HM
20-809-268	Social Ethics	3	HM
20-809-276	Business Ethics	3	HM

World Languages Courses

20-802-211	Spanish 1 or Spanish 1 (Refresh)	4	HM, WL
20-802-212	Spanish 2	4	HM, WL
20-802-213	Spanish 3	4	HM, WL
20-802-214	Spanish 4	4	HM, WL
20-802-215	Spanish 5	3	HM, WL
20-802-217	Spanish for Heritage Speakers	4	HM, WL
20-802-221	French 1	4	HM, WL
20-802-222	French 2	4	HM, WL
20-802-223	French 3	4	HM, WL
20-802-224	French 4	4	HM, WL
20-802-230	Intro to Mandarin Chinese 1	3	HM, WL
20-802-231	Intro to Mandarin Chinese 2	3	HM, WL
20-802-240	Intro to Modern Arabic 1	3	HM, WL
20-802-241	Intro to Modern Arabic 2	3	HM, WL

Math and Natural Science Requirement

Mathematics Courses

20-804-201	Intermediate Algebra	4	MTH
20-804-202	Intermediate Algebra 1	3	MTH
20-804-203	Intermediate Algebra 2	3	MTH
20-804-208	Computer Science	4	MTH
20-804-210	Math for Elementary Teachers	3	MTH
20-804-211	Quantitative Reasoning	3	MTH
20-804-212	College Algebra	3	MTH
20-804-213	Trigonometry	3	MTH
20-804-220	Finite Math	3	MTH
20-804-221	Calc Methods for Business and Social Sciences I	5	MTH
20-804-223	Calc Methods for Business and Social Sciences II	3	MTH

Mathematics Courses

cont'd

20-804-228	Calculus w Algebra & Trigonometry I	5	MTH
20-804-229	Mathematical Analysis	5	MTH
20-804-230	Calculus w Algebra & Trigonometry II	5	MTH
20-804-231	Calculus and Analytic Geometry 1	5	MTH
20-804-232	Calculus and Analytic Geometry 2	5	MTH
20-804-233	Calculus 3	5	MTH
20-804-240	Basic Statistics	4	MTH
20-804-241	Intro to Engineering Statistics	3	MTH
20-804-255	Techniques in Ordinary Differential Equations	3	MTH
20-804-256	Elementary Matrix and Linear Algebra	3	MTH
20-804-265	Introduction to Discrete Mathematics	3	MTH

Biology Courses

20-806-203	Introductory Zoology	5	*BIO
20-806-204	Biological Greek & Latin Terminology	3	BIO
20-806-206	General Anatomy and Physiology	4	*BIO
20-806-207	Anatomy and Physiology 1	4	*BIO
20-806-208	Anatomy and Physiology 2	4	*BIO
20-806-215	Botany	5	*BIO
20-806-226	Introduction to Human Biology	5	*BIO
20-806-273	Microbiology-University Medical	5	*BIO
20-806-274	General Microbiology	5	*BIO
20-806-281	Ecology and Conservation Biology	3	BIO
20-806-286	Environmental Science	4	*BIO
20-806-280	Environmental Issues	3	BIO

Chemistry Courses

20-806-200	Liberal Arts Chemistry	5	*PHYS
20-806-201	General, Organic and Biological Chemistry	5	*PHYS
20-806-209	College Chemistry 1	5	*PHYS
20-806-212	College Chemistry 2	5	*PHYS
20-806-213	Organic Chemistry 1	5	*PHYS
20-806-214	Organic Chemistry 2	5	*PHYS
20-806-216	Chemistry for Biotechnology	3	*PHYS

Physical Science Courses

20-806-220	Physics of Everyday Life	3	PHYS
20-806-221	University Physics 1	5	*PHYS
20-806-222	University Physics 2	5	*PHYS
20-806-223	University Physics 1-Calculus Based	5	*PHYS
20-806-224	University Physics 2-Calculus Based	5	*PHYS
20-806-232	Statics	3	PHYS
20-806-241	Earth Science	3	PHYS
20-806-244	General Geology	4	*PHYS
20-806-245	Weather and Climate	3	PHYS
20-806-246	Survey of Oceanography	3	PHYS
20-806-248	Weather and Climate Laboratory	1	*PHYS
20-806-250	Climate & Climate Change	3	PHYS
20-806-252	Natural Hazards	3	PHYS
20-806-253	Astronomy: The Solar System	4	*PHYS
20-806-254	Astronomy: Stars & Galaxies	4	*PHYS
20-806-291	Intro to Renewable Energy	3	PHYS

Social Science Requirement

Anthropology Courses

20-809-279	Intro to the Archaeology of Native North America	3	SS
20-809-280	General Anthropology	3	SS
20-809-281	Archaeology and the Prehistoric World	3	SS
20-809-283	Cultural Anthropology and Human Diversity	3	SS, ETH
20-809-285	The Anthropology of Myth, Magic and Religion	3	SS
20-E			
20-E			

Requirement Category Key:

COMP Composition	BIO Biological Science (*indicates with lab)
LIT Literature	HM Humanities/Fine Arts (*indicates studio/hands-on)
SPCH Speech	PE Health/Wellness/Physical Education
ETH Ethnic Studies	PHYS Physical Science (*indicates with lab)
MTH Mathematics	WL World Languages
SS Social Science	EL Elective

**Madison Area Technical College
Liberal Arts Transfer
Social Science Requirement cont'd**

Program Numbers: 20-800-1A & 20-800-1S

Anthropology Courses cont'd

	Credits	Category
20-809-288 Human Biology & Physical Anthropology	3	SS
20-809-289 World Regional Geography.....	3	SS
20-809-292 Agriculture, Food, and Society.....	3	SS

Economics Courses

20-809-211 Macroeconomics.....	3	SS
20-809-212 Microeconomics.....	3	SS
20-809-214 Introduction to International Economics.....	3	SS
20-809-228 Environmental Economics.....	3	SS
20-809-269 Energy and Society.....	3	SS

History Courses

20-803-204 Making of Modern Europe.....	3	SS
20-803-205 Europe and the Modern World.....	3	SS
20-803-211 American History 1607-1865.....	3	SS
20-803-212 American History 1865 to the Present.....	3	SS
20-803-214 Native American History.....	3	SS, ETH
20-803-215 American History Since 1945.....	3	SS
20-803-220 History of Western Civilization 1.....	3	SS
20-803-224 History of the Sub-Saharan Africa.....	3	SS
20-803-225 The World in the Twentieth Century.....	3	SS
20-803-229 Vietnam and America: 1945-Present.....	3	SS
20-803-233 Gender & Women's History/Cultural Representation.....	3	SS
20-803-234 Gender and Women's History/Global Perspectives.....	3	SS
20-803-240 Afro-American History.....	3	SS, ETH

Political Science Courses

20-809-218 Law and Society.....	3	SS
20-809-220 American Foreign Policy.....	3	SS
20-809-221 American National Government.....	3	SS
20-809-222 State and Local Government.....	3	SS
20-809-223 International Relations.....	3	SS
20-809-227 Political Theory.....	3	SS
20-809-242 Public Policy.....	3	SS
20-809-243 Comparative Politics.....	3	SS
20-809-244 Russian Politics.....	3	SS
20-809-245 Latin American Politics.....	3	SS
20-809-246 African Politics.....	3	SS
20-809-247 East Asian Politics.....	3	SS
20-809-248 Politics of India.....	3	SS
20-809-254 Methods of Political Inquiry.....	3	SS

Psychology Courses

20-809-201 Human Sexuality.....	3	SS
20-809-225 Social Psychology.....	3	SS
20-809-231 Intro Psychology.....	3	SS
20-809-233 Developmental Psychology.....	3	SS
20-809-234 Psychology of Women.....	3	SS
20-809-237 Abnormal Psychology.....	3	SS
20-809-239 Child Human Development.....	3	SS
20-809-249 Educational Psychology.....	3	SS

Sociology Courses

20-809-202 Social Problems.....	3	SS
20-809-203 Intro Sociology.....	3	SS
20-809-204 Marriage and the Family.....	3	SS
20-809-207 Criminology.....	3	SS
20-809-229 Social Movements.....	3	SS
20-809-230 Statistics for the Social Sciences.....	4	SS
20-809-240 Introduction to Latin America.....	3	SS
20-809-251 Sociology of Middle East and North Africa.....	3	SS
20-809-252 Race and Ethnicity in the U.S.....	3	SS, ETH
20-809-253 Sociology of Gender.....	3	SS
20-809-275 Sociology of Religion.....	3	SS
20-809-277 Couple Relationships.....	1	SS
20-809-291 Technology and Society.....	3	SS

Interdisciplinary Social Science Courses

20-809-206 Introduction to Women Studies.....	3	SS
20-809-210 Psychology of Men.....	3	SS

Optional Electives

Credits Category

Humanities

Course

20-810-267 Leadership as an Art.....	3	HM
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*this course counts toward the Humanities requirement but does not count as any specific discipline within Humanities.

Mathematics Courses

10-804-134 Mathematical Reasoning.....	3	EL
20-804-200 Principles of Geometry.....	3	EL

Social Science Course

10-809-195 Economics.....	3	EL
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Student Success Courses

20-890-200 College Success.....	3	EL
20-890-201 Study Skills.....	1	EL
20-890-202 Career Development.....	1	EL

Ethnic Studies Requirement

English Courses

20-801-207 World Indigenous Literatures.....	3	HM, LIT, ETH
20-801-212 Ethnic Literature.....	3	HM, LIT, ETH
20-801-213 Native American Literature.....	3	HM, LIT, ETH
20-801-214 African American Literature.....	3	HM, LIT, ETH
20-801-222 U.S. Latino Literature.....	3	HM, LIT, ETH

History Courses

20-803-214 Native American History.....	3	SS, ETH
20-803-240 African-American History.....	3	SS, ETH

Anthropology Courses

20-809-283 Cultural Anthropology and Human Diversity.....	3	SS, ETH
20-809-286 Anthropology of Globalization & Multiculturalism.....	3	SS, ETH

Sociology Course

20-809-252 Race and Ethnicity in the U.S.....	3	SS, ETH
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World Languages Requirement

20-802-211 Spanish 1 or Spanish 1 (Refresh).....	4	HM, WL
20-802-212 Spanish 2.....	4	HM, WL
20-802-213 Spanish 3.....	4	HM, WL
20-802-214 Spanish 4.....	4	HM, WL
20-802-215 Spanish 5.....	3	HM, WL
20-802-217 Spanish for Heritage Speakers.....	4	HM, WL
20-802-221 French 1.....	4	HM, WL
20-802-222 French 2.....	4	HM, WL
20-802-223 French 3.....	4	HM, WL
20-802-224 French 4.....	4	HM, WL
20-802-230 Intro to Mandarin Chinese 1.....	3	HM, WL
20-802-231 Intro to Mandarin Chinese 2.....	3	HM, WL
20-802-240 Intro to Modern Arabic 1.....	3	HM, WL
20-802-241 Intro to Modern Arabic 2.....	3	HM, WL

Requirement Category Key:

COMP Composition	BIO Biological Science (*indicates with lab)
LIT Literature	HM Humanities/Fine Arts (*indicates studio/hands-on)
SPCH Speech	PE Health/Wellness/Physical Education
ETH Ethnic Studies	PHYS Physical Science (*indicates with lab)
MTH Mathematics	WL World Languages
SS Social Science	EL Elective

Detailed and updated information on this program may be available at: madisoncollege.edu. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

Madison Area Technical College provides equal opportunity in education and employment.

Rev. 3/15

Machine Tooling Technics

Program Number: 32-420-5

Two-Year Technical Diploma

Manufacturing Program Cluster

School of Applied Science, Engineering, and Technology

Program offered at Madison Campuses

For information call: (608) 246-6800 or (800) 322-6282 Ext. 6800

About the Program

Emphasis in Machine Tool is on training graduates for employment in tool and die making, mold making, Computer Numerical Control (CNC) Programming or as quality control inspectors or precision and repair machinists. Students utilize CAD/CAM (Computer Aided Design/Computer Aided Manufacturing) and state-of-the-art machining centers, turning centers and Electrical Discharge Machines (EDM). This knowledge is blended with basic hands-on skills learned throughout the two-year program. Students gain the knowledge and skills necessary to design, build and inspect a machined part, injection mold or stamping die. This is the program for students seeking interesting and challenging work in a clean, high tech work environment, job stability and a career that rewards growth and experience.

Admissions Requirements

To review admissions program requirements and application processing dates visit the programs website at: <http://madisoncollege.edu/program-info/machine-tooling-technics>.

Requirements for Graduation

Students must meet two 2.0 GPA requirements to graduate: 1) GPA for entire program must be 2.0 or above; 2) GPA of combined occupational courses (420) must be 2.0 or above.

Courses

Note: Due to space constraints, prerequisite information has not been included in with most of the course descriptions. Please check our website for prerequisite and co-requisite information for each course.

10-623-200 Interpreting Engineering Drawings 2 credits

Basic principles of engineering drawings and manufacturing procedures. Through interpretation and sketching, students learn to visualize the part, section or assembly. Uses drawings pertinent to the trades with examples in Welding, Facilities, Piping and Instrumentation (P & ID's), Sheet Metal, Equipment Manuals (technical documents, installation/repair manuals), Electrical Symbols, and Fluid Power Symbols.

10-623-300 Fluid Power 1 for Industry 1 credit

Fundamentals of fluid power (hydraulic and pneumatic) and is intended to gain an understanding of components and terminology as well as principles and functions. This course has a heavy emphasis on recognizing hydraulic and pneumatic symbols and circuits.

10-623-310 Mechanisms for Industry 1 credit

Emphasizes measurement, lubrication, energy, power, machines and fluid and chemical properties, as well as installation, timing and synchronization of machine drive components. Includes hands-on disassembly and assembly of industrial components.

32-420-304 Intermediate Metrology Applications 1 credit

Course studies precision inspection methods while utilizing optical and electronic precision measuring instruments such as the profilometer, optical comparator, microscope, laser alignment machines, the Coordinate Measuring Machine and state-of-the-art computerized vision system.

32-420-322 Machine Tool 1 4 credits

Introduces the basic concepts and skills using engine lathes, milling machines, power saws, Drill presses and bench applications. Emphasizes safety and proper operation of tools and machines, speeds, feeds, cutting tools, tool geometry, tool grinding and work-holding devices. Stresses dimensional accuracy, finish and quality as well as team-building and work ethics.

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

First Semester		Credits	Hrs/week Lec-Lab
10-623-200	Interpreting Engineering Drawings.....	2	0-4
32-420-322	Machine Tool 1*	4	4-12
32-420-323	Machine Tool 2*	4	4-12
32-420-346	Intro to CNC – G-code Programming.....	2	3-1
32-420-351	Elements of Basic Metrology.....	2	2-2
31-801-356	Communications 1.....	1	2-0
31-804-381	Machine Tool Mathematics 1	2	4-0
Semester Total		17	

Second Semester

32-420-304	Intermediate Metrology Applications.....	1	1-1
32-420-324	Machine Tool 3*	4	4-12
32-420-325	Machine Tool 4*	4	4-12
32-420-337	Manufacturing w/Solid Modeling-2D	2	4-0
32-420-348	Applied CNC- Conversational & Setup	2	1-3
32-420-388	Tool and Fixture Design	1	2-0
32-420-390	Fundamentals of Metallurgy.....	2	4-0
31-804-382	Machine Tool Mathematics 2	1	2-0
Semester Total		17	

Third Semester

32-420-326	Machine Tool 5 (Die Making)*.....	4	4-12
32-420-327	Machine Tool 6*	5	5-13
32-420-336	Manufacturing w/Solid Modeling – 3D	2	4-0
32-420-389	Applied CNC-Intermediate Operations	2	1-3
32-420-394	Tool Making Theory 1 (Die Making).....	2	4-0
31-806-363	Science 1.....	2	2-2
Semester Total		17	

Fourth Semester

10-623-300	Fluid Power 1 for Industry	1	0-2
10-623-310	Mechanisms for Industry	1	0-2
32-420-328	Machine Tool 7 (Mold Making)*	4	4 -12
32-420-329	Machine Tool 8*	5	5 -13
32-420-370	Manufacturing w/Solid Modeling - Advanced.....	1	2-0
32-420-391	Applied CNC- Advanced Operations	1	0-2
32-420-393	Job Orientation	1	1-0
32-420-395	Tool Making Theory 2 (Mold Making)	2	4-0
32-442-313	Related Welding	1	1-1
Semester Total		17	

*Meets for 9 weeks.

Note: Students are placed in English or mathematics courses based on their scores on the COMPASS or ASSET test or on completion of the appropriate prerequisite/s.

Courses (continued)

32-420-323 Machine Tool 2

Expands on basic concepts and skills using engine lathes, milling machines, power saws, drill presses, bench applications, CNC setup and operation. Emphasizes safety and proper operation of tools and machines, speeds feeds, cutting tools, tool geometry, tool grinding and work-holding devices. Stresses dimensional accuracy, finish and quality with team-building and work ethics.

32-420-324 Machine Tool 3

Expands the concepts and skills using engine lathes, milling machines, power saws, drill presses, bench applications, and advanced CNC setup and operation. Emphasizes safety and proper operation of tools and machines, speeds feeds, cutting tools, tool geometry, tool grinding and work-holding devices. Stresses dimensional accuracy, finish and quality with team-building and work ethics.

32-420-325 Machine Tool 4 4 credits

Expands on basic concepts and skills using engine lathes, milling machines, power saws, drill presses, bench applications, CNC setup and operation. Emphasizes safety and proper operation of tools and machines, speeds feeds, cutting tools, tool geometry, tool grinding and work-holding devices. Stresses dimensional accuracy, finish and quality with team-building and work ethics.

32-420-326 Machine Tool 5 4 credits

Skills and knowledge necessary for advanced setups and procedures on milling machines, grinders, and lathes. Introduces both tool and cutter grinding and the selection and use of carbide tooling. Special emphasis is given to Electrical Discharge Machine and electrode development. CNC machining applications to complete course projects is enhanced. Safety, precision measurement and craftsmanship are stressed.

32-420-327 Machine Tool 6 5 credits

Provides the student with the skills and knowledge necessary for advanced setups and procedures on milling machines, grinders, and lathes. Students are also introduced both tool and cutter grinding and the selection and use of carbide tooling. Special emphasis is given to Electrical Discharge Machine and electrode development. CNC machining applications to complete course projects is also enhanced. Building a stamp die. Safety, precision measurement and craftsmanship are stressed.

32-420-328 Machine Tool 7 4 credits

Set-up and operate a CNC EDM machine, CNC machining center, and select and use superabrasives for grinding and machining. Advanced machining setups, procedures, and operations will be covered to enable students to accomplish the machining projects. Safety, precision measurement, and craftsmanship are stressed.

32-420-329 Machining Tool 8 5 credits

Set-up and operate a CNC EDM machining center, and select and use superabrasives for grinding and machining. Includes advances machining setups, procedures, and operations to accomplish the machining of a small MUD plastic injection mold or special machining project. Safety, precision measurement, and craftsmanship are stressed.

32-420-336 Manufacturing w/ Solid Modeling - 3D 2 credits

This course builds on the concepts learned in Manufacturing w Solid Modeling--2D. Learners will utilize Solid Modeling software and CAM software to create true 3D models with surfacing concepts. Students will gain competency in file management by saving, converting, and working with different file types. Learners will create geometry in each application and convert files between CAD and CAM. Students will apply various tool paths theories to the designs they have created. Such theories include Surfacing, High Speed Machining, Hard Milling/Turning, 2 and 4 Axis Wire, Live lathe tooling, and 4 Axis milling. Prerequisites: 32-420-337, 32-420-346, 32-420-348; Co- requisite: 320420-389.

32-420-337 Manufacturing w/Solid Modeling - 2D 2 credits

This course offers instruction on individual computer workstations in a computer lab. This computer-aided drafting (CAD) instruction uses Solid Modeling software that is capable of creating 3D models and manufacturing drawings. In this course you will spend half of the time creating 3D models using 2 and 2.5D features while exploring the concepts of working in 3D space. Once the solid models are created students will import the solid models into CAM (Computer-aided manufacturing) software and utilize machining concepts to produce manufactured part using 2.5D programming methods such as pocketing, contouring & drilling for milling machines as well as turning, facing, grooving and threading for turning centers.

32-420-346 Intro to CNC – G-code Programming 2 credits

Hands-on and lecture course exposing students to CNC (Computer Numerical Control). Emphasizes CNC vertical milling machines and CNC turning centers. Covers history, basic CNC understanding and beginning programming including G-codes, M-codes. Students will utilize simulation software that will verify manually written code.

32-420-348 Applied CNC – Conversational & Setup 2 credits

This introductory Applications class familiarizes students with the basic setup procedures of CNC milling machines and CNC turning centers. They will set up rough stock and execute existing programs to produce finished parts. Once students learn these concepts they utilize the conversational programming software on the various CNC machines to program and produce parts.

32-420-351 Elements of Basic Metrology 2 credits

This course introduces the principles of basic dimensional measurement, layout techniques for machines, use of direct and indirect measuring tools as well as the use of length standards relative to calibration of measuring instruments and the basic operation of the Coordinate Measuring Machine.

32-420-370 Manufacturing w/Solid Modeling--Advanced 1 credit

The advanced course requires students to draw complex wire-frame models utilizing CAD software. These Models will then be imported into CAM software to use advanced programming methods to produce high quality parts. Mill Programming will include 2D, 2.5D, 3D, 4-Axis and an introduction to 5 Axis and 3+2 techniques. Lathe programming will include advanced turning and live tooling.

32-420-388 Tool and Fixture Design 1 credit

Introduces tool design and gauging. Emphasizes jigs, fixture design, clamping, locating devices and tooling and production methods. Presents preset and qualified tooling for NC/CNC as they relate to conventional practice.

32-420-389 Applied CNC-Intermediate Operations 2 credits

This applications class builds on CNC concepts learned in previous classes. Emphasis is on CNC Turning Center, CNC Milling machine, and CNC Wire set up and operation. Students will produce parts that they have modeled and programmed in Manufacturing w/Solid Modeling 1 and 2 as well as instructor provided programs.

32-420-390 Fundamentals of Metallurgy 2 credits

Introduces metallurgy, emphasizing applications, selection, identification methods and alloy influences. Studies metal properties using testing, micro-structure interpretation and heat-treatment processes. Covers tool steels, weld heat effects, failure analysis and machinability variations in cast iron, alloy steels and non-ferrous materials in detail.

32-420-391 Applied CNC – Advanced Operations 1 credit

Our most advanced CNC applications course devoted to machining complex toolpaths, including mold cavities and graphite electrodes. Stresses hands-on instruction and operation of CNC turning centers, vertical milling machines, and machining centers.

32-420-393 Job Orientation 1 credit

Covers specific occupational information including personal data sheets, job interviews, resumes and recommendations. Guest speakers lecture on employment, management and industry trends. Prerequisite: third semester standing; Co-requisite: 32420328.

32-420-394 Tool Making Theory 1 2 credits

Lecture course supporting Machine Tool 3 lab activities. Major emphasis on the nomenclature, theory, construction features, design, and the technology of stamping and forming dies. Student also will spend time designing and planning a special die, mold or advanced CNC project.

32-420-395 Tool Making Theory 2 2 credits

Lecture course supporting Machine Tool 4 lab activities. Major emphasis on nomenclature, theory, construction features, design and the technology of mold dies. The seven molding processes will be discussed. Students also will spend time designing and planning a special mold, tool, or CNC project.

32-442-313 Related Welding 1 credit

Students learn basic welding processes, equipment operations, and safety procedures. Emphasizes welding procedures and practices commonly used in the machine tool industry.

Career Potential:

- Tool and Die Apprentice
- Mold Making Apprentice
- Millwright Apprentice
- Precision Machinist
- CNC Machinist
- CNC Programmer
- Machine Repair Specialist

With additional education and/or work experience, graduates may find employment as:

- Journey-level Tool and Die Maker
- Journey-level Mold Maker
- Journey-level Millwright
- Shop Owner
- Shop Manager
- Industrial Engineer
- Manufacturing Engineer
- Industrial Sales Engineer
- Die and/or Mold Designer
- Educator

More detailed and updated information on this program may be available at: madisoncollege.edu. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

Madison Area Technical College provides equal opportunity in education and employment.

Rev. 04/15

Machine Tool Operations Certificate

Program Number: 90-420-2

Certificate

Manufacturing Program Cluster

School of Applied Science, Engineering, and Technology

Program offered at Madison Campuses

For information call:

(608) 246-6800 or (800) 322-6282 Ext. 6800

About the Certificate

The Machine Tool Operations certificate prepares students for employment in the machining and metalworking industries.

Students learn to operate machine tools such as milling machines, manual lathes, and drill presses. Studies will also include an introduction on using CAD-CAM to operate and program CNC machines.

After students have completed this program, an additional year of training is available through the Machine Tooling Technics program.

This is for students interested in:

- 1.) Advancing their CAD-CAM / CNC skills
- 2.) Developing skills to design, build, and inspect a machine part

Admissions Requirements

To review admissions program requirements and application processing dates visit the programs website at: <http://madisoncollege.edu/program-info/machine-tool-operations-certificate>.

Requirements for Completion

The certificate will be awarded upon completion of the requirements with a minimum of a 2.0 grade average. The certificate will be awarded when completion of all requirements is verified after the semester the last course has been completed.

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

Courses	Credits	Hrs/week	
		Lec	Lab
10-623-200 Interpreting Engineering Drawings.....	2	0	4
32-420-346 Intro to CNC – G-code Programming ^o	2	3	1
32-420-351 Elements of Basic Metrology ^o	2	2	2
32-420-322 Machine Tool 1 ^o	4	4	12
32-420-323 Machine Tool 2 ^o	4	4	12
31-801-356 Communications 1 ^o	1	2	0
31-804-381 Machine Tool Mathematics 1 ^o	2	4	0
32-420-304 Intermediate Metrology Applications [♦]	1	1	1
32-420-324 Machine Tool 3 [♦]	4	4	12
32-420-325 Machine Tool 4 [♦]	4	4	12
32-420-388 Tool and Fixture Design [♦]	1	2	0
32-420-390 Fundamentals of Metallurgy [♦]	2	4	0
32-420-348 Applied CNC-Conversational and Setup [♦]	2	1	3
32-420-337 Manufacturing w/Solid Modeling- 2D [♦]	2	4	0
31-804-382 Machine Tool Mathematics 2 [♦]	1	2	0
Total	34		

*Meets for 9 weeks

^o Fall course offering

[♦] Spring course offering

Note:

Courses are listed in suggested sequence. Enrollment for courses adhere to course prerequisites and co-requisites as indicated at the end of each course description.

Note: Students are placed in English or mathematics courses based on their scores on the COMPASS or ASSET test or on completion of the appropriate prerequisite/s.



Certificate Courses

10-623-200 Interpreting Engineering Drawings 2 credits

Basic principles of engineering drawings and manufacturing procedures. Through interpretation and sketching, students learn to visualize the part, section or assembly. Uses drawings pertinent to the trades with examples in Welding, Facilities, Piping and Instrumentation (P & ID's), Sheet Metal, Equipment Manuals (technical documents, installation/repair manuals), Electrical Symbols, and Fluid Power Symbols.

32-420-304 Intermediate Metrology Applications 1 credit

Course studies precision inspection methods while utilizing optical and electronic precision measuring instruments such as the profilometer, optical comparator, microscope, laser alignment machines, the Coordinate Measuring Machine and state-of-the-art computerized vision system. Prerequisites: 32-420-351 and 10-623-200.

32-420-322 Machine Tool 1 4 credits

Introduces the basic concepts and skills using engine lathes, milling machines, power saws, Drill presses and bench applications. Emphasizes safety and proper operation of tools and machines, speeds, feeds, cutting tools, tool geometry, tool grinding and work-holding devices. Stresses dimensional accuracy, finish and quality as well as team-building and work ethics. Co-requisites: 32-420-323, 32-420-351, 32-420-345.

32-420-323 Machine Tool 2 4 credits

Expands on basic concepts and skills using engine lathes, milling machines, power saws, drill presses, bench applications, CNC setup and operation. Emphasizes safety and proper operation of tools and machines, speeds feeds, cutting tools, tool geometry, tool grinding and work-holding devices. Stresses dimensional accuracy, finish and quality with team-building and work ethics. Co-requisites: 32-420-322, 32-420-351, and 32-420-345.

32-420-324 Machine Tool 3 4 credits

Expands the concepts and skills using engine lathes, milling machines, power saws, drill presses, bench applications, and advanced CNC setup and operation. Emphasizes safety and proper operation of tools and machines, speeds feeds, cutting tools, tool geometry, tool grinding and work-holding devices. Stresses dimensional accuracy, finish and quality with team-building and work ethics. Prerequisites: 32-420-323, 32-420-351, and 32-420-345; Co-requisites: 32-420-325, 32-420-390, and 32-420-304.

32-420-325 Machine Tool 4 4 credits

Expands on basic concepts and skills using engine lathes, milling machines, power saws, drill presses, bench applications, CNC setup and operation. Emphasizes safety and proper operation of tools and machines, speeds feeds, cutting tools, tool geometry, tool grinding and work-holding devices. Stresses dimensional accuracy, finish and quality with team-building and work ethics. Co-requisite: 32-420-324.

32-420-337 Manufacturing w/Solid Modeling--2D 2 credits

This course offers instruction on individual computer workstations in a computer lab. This computer-aided drafting (CAD) instruction uses Solid Modeling software that is capable of creating 3D models and manufacturing drawings. In this course you will spend half of the time creating 3D models using 2 and 2.5D features while exploring the concepts of working in 3D space. Once the solid models are created students will import the solid models into CAM (Computer-aided manufacturing) software and utilize machining concepts to produce manufactured part using 2.5D programming methods such as pocketing, contouring & drilling for milling machines as well as turning, facing, grooving and threading for turning centers.

32-420-346 Intro to CNC --G-code Programming 2 credits

Hands-on and lecture course exposing students to CNC (Computer Numerical Control). Emphasizes CNC vertical milling machines and CNC turning centers. Covers history, basic CNC understanding and beginning programming including G-codes, M-codes. Students will utilize simulation software that will verify manually written code.

32-420-348 Applied CNC -- Conversational and Setup 2 credits

This introductory Applications class familiarizes students with the basic setup procedures of CNC milling machines and CNC turning centers. They will set up rough stock and execute existing programs to produce finished parts. Once students learn these concepts they utilize the conversational programming software on the various CNC machines to program and produce parts.

32-420-351 Elements of Basic Metrology 2 credits

This course introduces the principles of basic dimensional measurement, layout techniques for machines, use of direct and indirect measuring tools as well as the use of length standards relative to calibration of measuring instruments and the basic operation of the Coordinate Measuring Machine.

32-420-388 Tool and Fixture Design 1 credit

Introduces tool design and gauging. Emphasizes jigs, fixture design, clamping, locating devices and tooling and production methods. Presents preset and qualified tooling for NC/CNC as they relate to conventional practice. Prerequisite: 32-240-345.

32-420-390 Fundamentals of Metallurgy 2 credits

Introduces metallurgy, emphasizing applications, selection, identification methods and alloy influences. Studies metal properties using testing, micro-structure interpretation and heat-treatment processes. Covers tool steels, weld heat effects, failure analysis and machinability variations in cast iron, alloy steels and non-ferrous materials in detail.

Career Potential:

A graduate of this program will have the potential for employment in the following areas:

- CNC Machine Operator
Machine Tool Operator
- Maintenance / Repair
Machinist
- Machinist Apprentice

With additional education and / or work experience graduates may find other opportunities for employment.

- Advanced Careers in
CAD/CAM and CNC
- CNC Programmer
- Precision Machinist
- Machine Builder
- Tool and Die maker
- Quality Control Inspector
- Machine Shop Supervisor
- Career laddering options
too numerous to mention

More detailed and updated information on this program may be available at: madisoncollege.edu. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

Madison Area Technical College provides equal opportunity in education and employment.

Rev. 04/15

Manufacturing Essentials Certificate

Program Number: 90-623-1

Certificate

Manufacturing Program Cluster

School of Applied Science, Engineering, and Technology

Program offered at Madison Campuses

For information call:

(608) 246-6800 or (800) 322-6282 Ext. 6800

About the Certificate

Manufacturing Essentials introduces students to the basic skills needed to enter the manufacturing workforce. Students develop an understanding of manufacturing processes, tools, safe work habits, and concern for quality, as well as build on mathematics and communication skills applicable to industry. The knowledge and skills learned in this entry-level training program provide students a foundation for pursuing careers and/or further education in manufacturing businesses, from machining and fabrication, to food production.

The U. S. Department of Labor's Employment and Training Administration has funded 100% of this project equaling \$1,209,253. This is an equal opportunity employer/program which provides auxiliary aids and services upon request to individuals with disabilities by calling 711.

Admissions Requirements

To review admissions program requirements and application processing dates visit the programs website at:
<http://madisoncollege.edu/program-info/manufacturing-essentials-certificate>.

Unique Requirements for Completion

The certificate will be awarded upon completion of the requirements with a minimum of a 2.0 grade average. The certificate will be awarded when completion of all requirements is verified after the semester the last course has been completed.

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

Courses	Credits	Hrs/week
10-623-100 Safety for Industry	1	0-2
10-623-200 Interpreting Engineering Drawings	2	0-4
30-442-323 Introduction to Gas Metal Arc Welding.....	1	1-1
31-420-317 Machining Basics.....	1	1-1
31-623-401 Foundations in Manufacturing	2	2-2
31-804-350 Math with Industrial Applications.....	1	2-0
32-801-350 Workplace Communication for Industry	1	2-0
Total	9	



Madison Area Technical College

Manufacturing Essentials Certificate

Program Number: 90-623-1

Courses

10-623-100 Safety for Industry 1 credit

Comprehensive safety program designed for anyone involved in general industry. Specifically devised for safety directors, foremen, and field supervisors; the program provides complete information on OSHA compliance issues.

10-623-200 Interpreting Engineering Drawings 2 credits

Basic principles of engineering drawings and manufacturing procedures. Through interpretation and sketching, students learn to visualize the part, section or assembly. Uses drawings pertinent to the trades with examples in Welding, Facilities, Piping and Instrumentation (P & ID's), Sheet Metal, Equipment Manuals (technical documents, installation/repair manuals), Electrical Symbols, and Fluid Power Symbols.

30-442-323 Introduction to Gas Metal Arc Welding 1 credit

Students develop manipulative skills while performing the gas metal arc welding process using 1/8" to 1/4" thick, hot rolled mild steel. Emphasis is placed on operating gas metal arc welding equipment in a safe manner and determining correct machine set-up for metal thickness, wire size, and specific weld joints. Welds are performed in the flat and horizontal positions using the short circuit mode of metal transfer. All weld competencies are evaluated using American Welding Society (AWS) visual inspection code standards.

31-420-317 Machining Basics 1 credit

Introduces the basic concepts and skills using engine lathes, power saws, drill presses and bench applications. Emphasizes safety and proper operation of tools and machines, speeds, feeds, cutting tools, tool geometry, tool grinding and work-holding devices. Stresses dimensional accuracy, finish and quality as well as team-building and work ethics.

31-623-401 Foundations in Manufacturing 2 credits

Designed to provide an overview and foundation for persons interested in a manufacturing career. The class provides the student basic instruction in a variety of skills that will be an important part of successful employment within the industry. Students will be introduced to manufacturing processes, principles and practices used in manufacturing environments. Topics include: types of materials, product design, manufacturing processes, production systems, automated systems and quality. Students will be expected to understand the product life cycle from conception through distribution. Overall, the class will explore the various roles and responsibilities of employees in careers related to manufacturing.

31-804-350 Math with Industrial Applications 1 credit

Math with Industrial Applications is an entry level mathematics course for students in manufacturing, machining, welding, maintenance and applied technology programs. It covers the essential mathematical skills including fractions, decimals, measurements, precision, basic statistics, geometry and basic trigonometry. Prerequisites: grade of C or better in Applied Math for Business and Trades, 74854749, OR Basic Algebra, 77854793; OR Basic Algebra, 74854793, OR COMPASS test score Pre-Algebra 43 or higher

32-801-350 Workplace Communications 1 credit

Workplace Communication for Industry is an introductory communications course designed to teach the speaking, listening, writing, and critical thinking skills needed in industrial occupations. The course focuses on communicating verbally with co-workers during and between shifts, as well as reading and writing documents in the workplace. A variety of job search skills are also covered, and students are introduced to essential computer skills. Individual sections might be tailored to a specific field, program, or career pathway.

Career Potential:

- Entry level employment in a manufacturing setting

Continue education in:

- Machine Tooling Technics
- Industrial Maintenance Technician
- Industrial Maintenance Mechanic
- Industrial Mechanic-HVAC
- Automated Manufacturing Systems Technology
- Welding

More detailed and updated information on this program may be available at: madisoncollege.edu. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

Madison Area Technical College provides equal opportunity in education and employment.

Rev. 04/15

Marketing

Associate in Applied Science Degree

Business and Marketing Program Cluster

School of Business and Applied Arts

For Information Call:

(608) 246-6003 or (800) 322-6282 Ext. 6003

For Online or Accelerated Programs:

(608) 245-5850 or (800) 322-6282 Ext. 5850

About the Program

Marketing is one of the most important areas of expertise for the next generation of business leaders. It is critical to the success of every organization — whether large or small, profit or nonprofit, product- or service-oriented. All organizations must identify and research target markets; determine customer needs; and establish how products and services can most effectively be created, priced, promoted and distributed.

Course formats include 16-week, compressed (8-week), online, hybrid, and accelerated options. Choose from a unique menu of options to meet your work and life schedule!

Program is offered in traditional, compressed, online, hybrid, Telepresence, and accelerated formats at the Madison campus (select courses offered in Fort Atkinson, Portage, Madison-West, and Watertown).

Take classes one night a week and earn your degree in about two years!

Admissions Requirements

To review admissions program requirements and application processing dates visit the programs website at: <http://madisoncollege.edu/program-info/marketing>.

Program Courses

10-104-102 Marketing Principles 3 credits
This foundation course introduces students to the marketing process and how it operates in today's dynamic organizations. The entire marketing mix is examined on a broad scale. Topics include: market segmentation and targeting strategies, market research, consumer behavior, product development, pricing policies, distribution and an overview of promotion. It provides a comprehensive overview of the exciting world of marketing.

10-104-103 Marketing Research 3 credits
Businesses today need current, accurate information upon which to base their decisions. In this class, students learn not only how to gather marketing information from primary and secondary sources using online and other sources, but also how to apply that information to make better marketing decisions. Prerequisites: 10-104-102, 10-103-133, 10-103-137, and 10-103-143.

10-104-104 Selling Principles 3 credits
Introductory course designed to acquaint the student to the basic principles, concepts, and theories of business and consumer selling. Special emphasis is given to developing the selling process which includes prospecting and qualifying, planning and pre-approaching, approaching the customer, the sales presentation/demonstration, handling objections, closing the sale and post-sale service and follow-up. This course will also provide the learner with an opportunity to explore careers, opportunities, and benefits of personal selling.

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

First Semester		Credits	Hrs/week
10-103-133	Excel-Beginning	1	0.25-1.5
10-103-137	Word-Beginning	1	0.25-1.5
10-103-143	PowerPoint-Beginning	1	0.25-1.5
10-104-102	Marketing Principles*	3	3-0
10-104-104	Selling Principles*	3	3-0
10-801-195	Written Communication OR	3	3-0
20-801-201	English 1.....	(3)	3-0
10-804-144	Math of Finance	3	3-0
Semester Total		15	

Second Semester		Credits	Hrs/week
10-104-112	Marketing Design Strategies**.....	3	3-0
10-104-113	LEAD (Leadership, Ethics and Development).....	3	3-0
10-104-114	Social Media Principles**	3	3-0
10-104-125	Principles of Advertising**.....	3	3-0
10-801-197	Technical Reporting OR.....	3	3-0
20-801-202	English 2.....	(3)	3-0
10-801-198	Speech	3	3-0
Semester Total		18	

Third Semester		Credits	Hrs/week
10-104-103	Marketing Research**	3	3-0
10-104-162	Mobile Marketing (Social Media)	3	3-0
10-104-180	International Marketing**.....	3	3-0
10-801-196	Oral/Interpersonal Communication OR.....	3	3-0
20-810-205	Small Group and Interpersonal Communication.....	(3)	3-0
10-809-195	Economics OR	3	3-0
20-809-211	Macro Economics.....	(3)	3-0
20-809-212	Micro Economics.....	(3)	3-0
Approved Marketing Elective		3	3-0
Semester Total		18	

Fourth Semester		Credits	Hrs/week
10-104-107	Marketing Management**	3	3-0
10-104-115	Capstone Campaign	3	3-0
10-104-188	Marketing Portfolio	1	0-2
10-809-199	Psychology of Human Relations OR	3	3-0
20-809-231	Introduction to Psychology.....	(3)	3-0
Approved Marketing Elective		3	3-0
General Elective		3	E
Semester Total		16	

- The **General Elective** may be filled from a wide variety of college-wide classes and/or transfer credits. Students are advised to plan for college transfer possibilities in advance of starting the program. For the most accurate transfer information, contact the Admissions Office of the transfer school.
- The **Approved Marketing Electives** must come from one of the following classes (please note that some of these classes are only offered once per year).

10-104-108	Business to Business Sales** Δ	3 credits
10-104-126	Public Relations ♦	3 credits
10-104-160	Sales Management** ♦	3 credits
10-104-165	Internship	3 credits
10-104-169	Internet Marketing** ♦	3 credits
10-104-187	Global Studies Seminar ^o	3 credits
o may be taken in lieu of International Marketing, 10-104-180		

Notes:

*Course is a prerequisite for many other Marketing courses and should be completed as soon as possible.

**Course has prerequisites (see course descriptions for more details)

♦ Fall Semester

Δ Spring Semester

D Summer Term



Mechanical Design Technology

Program Number: 10-606-1

Associate in Applied Science Degree

Applied Engineering Technologies Program Cluster

Center for Applied Science, Engineering, and Technology

Program offered at Madison Campus

For information call:

(608) 246-6800 or (800) 322-6282 Ext. 6800

About the Program

Mechanical design technicians assist engineers in the design of products and prepare engineering drawings for any manufactured product that you use in everyday life. The parts of a car, the chairs you sit on or the computer keyboard you use, are all examples of mechanical parts that have to be designed and drawn prior to being manufactured.

Mechanical design technicians are challenged through active involvement in the engineering design process creating more dependable, cost effective and unique product designs that will satisfy their customers. To assist in this process, mechanical design technicians use science, mathematics, engineering problem solving, computer-aided design (CAD) technology and parametric solid modeling.

Admission Requirements

To review program admission requirements and application processing dates visit the programs website at:

<http://madisoncollege.edu/program-info/mechanical-design-technology>

The Mechanical Design Technology program participates in MAAP (Mandatory Assessment, Advising and Placement). This requires new students to complete the COMPASS test. Advisement and course placement in English and math is done based on test results. Testing will be required prior to admission.

Program Courses

10-606-100 Engineering Technology Communications 3 credits
 Develops skills in creating engineering sketches through the application of drafting standards and procedures. Principles covered include view selection, orthographic projection, section and auxiliary views, and their utilization in working drawings. The need for engineering sketching is reinforced through a hands-on project requiring measurement, inspection and sketching of orthographic views. In addition, materials, fabrication and assembly methods related to the project will also be explored. Co-requisites: 10-606-120 and 10-606-130.

10-606-101 Engineering Technology Fundamentals 2 credits
 Introduces the student to the knowledge and skills required to function in today's engineering office environment. Engineering office format, procedures, standards, ethics and application level of engineering office related software is introduced. Students explore the engineering design process and participate in various problem solving and conflict resolution techniques. Career paths available to the Mechanical Design graduate will also be explored. Students utilize Net Meeting, video conferencing and Internet shared data.

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

FIRST YEAR		Credits	Hrs/week
First Semester			Lec-Lab
10-606-100	Engineering Technology Communications.....	3	1-4
10-606-101	Engineering Technology Fundamentals.....	2	1-2
10-606-120	2D CAD.....	2	1-2
10-606-130	SolidWorks 1.....	2	1-2
10-606-160	Fundamentals of Mfg/Eng Materials.....	2	1-2
10-801-195	Written Communication.....	3	3-0
10-804-114	College Technical Math 1B.....	2	2-0
Semester Total		16	

Second Semester		Credits	Hrs/week
10-606-131	SolidWorks 2.....	2	1-2
10-606-140	Dimensioning/GDT.....	3	2-2
10-606-155	Statics & Mechanics.....	3	2-2
10-606-161	Manufacturing Processes.....	2	1-2
10-606-170	Strength of Materials.....	3	2-2
10-804-116	College Technical Math 2.....	4	2-0
10-809-199	Psychology of Human Relations.....	3	3-0
Semester Total		20	

SECOND YEAR

First Semester		Credits	Hrs/week
10-606-104	Engineering Technology Practices.....	3	1-4
10-606-116	Machine Design.....	3	2-2
10-606-125	Plastics for Mechanical Design.....	3	2-2
10-606-163	Engineering Technology Project Management.....	2	1-2
10-606-164	Quality Systems.....	2	1-2
10-606-193	Career Development.....	1	1-0
10-809-166	Introduction to Ethics.....	3	3-0
Semester Total		17	

Second Semester		Credits	Hrs/week
10-606-112	Tool Design Technology.....	3	1-4
10-606-150	CAE Applications.....	2	1-2
10-606-152	PLC, Hydraulics, Pneumatics.....	2	1-2
10-606-186	Engineering Technology Applications.....	3	1-4
10-801-197	Technical Reporting.....	3	3-0
10-806-154	General Physics.....	4	3-2
Semester Total		17	

Note: Students are assessed for correct placement in English or mathematics courses based on their scores on the COMPASS test or on completion of the appropriate prerequisite(s). Additionally, there may be courses in other subject areas that may use COMPASS scores as prerequisites when reading, writing, math, or critical thinking competencies are required.



Program Courses (continued)

10-606-104 Engineering Technology Practices 3 credits

Focuses on the creation of complete sets of engineering detail and assembly drawings including the accompanying engineering documentation, bill of materials and the application of geometric dimensioning and tolerancing standards. Emphasis is placed on product design analysis, the engineering change process, product data management and an introduction to stress analysis and rapid prototyping. Other areas of study: threaded fasteners, non-threaded fasteners, springs and gears. Prerequisite: 10-606-140.

10-606-112 Tool Design Technology 3 credits

The fundamentals of tool design are presented to acquaint the student with the language and methods used in designing jigs and fixtures. Through the research and selection of standard tooling components, working tool design drawings are completed. Also explored are common plastic part design and tooling considerations through actual design problems. Prerequisite: 10-606-104.

10-606-116 Machine Design 3 credits

The principles of statics and strength of materials are reviewed and applied to the design of common machine elements. Typical elements studied include: fasteners, shafts, clutches, belts, chains, gears, bearings and springs combined to form machines. Prerequisite: 10-606-170.

10-606-120 2D CAD 2 credits

Introduces the basic capabilities of the current version of 2D CAD software as it applies to mechanical design. Emphasis is placed on basic commands and input required for their application in creating two-dimensional mechanical working drawings. Co-requisites: 10-606-100 and 10-606-130.

10-606-125 Plastics for Mechanical Design 3 credits

This course is an introduction to the main plastics processing industries, techniques, and commonly used polymers. Plastic processing principles will be studied and applied through learning activities designed for hands-on classroom manufacturing processing training centers. In addition, students will be provided with relevant information that will enable them to investigate the career possibilities in the plastic industry.

10-606-130 SolidWorks 1 2 credits

Introduces the students to the concepts commands of parametric solid modeling. Students create sketches and add relationships to the sketch segments, extrude the sketches to create models, add features such as fillets, cut extrude, chamfers, holes, draft, shell, lofts and sweeps. Emphasis is placed on the design intent of parametric solid models. In addition, students extract 2D documentation from the 3D models and add details to the drawings. Co-requisites: 10-606-100 and 10-606-120.

10-606-131 SolidWorks 2 2 credits

A continuation in the study of parametric design started in 10-606-130, Solid Modeling 1. Topics covered in the course include: assemblies and BOM, the use of equations, part configurations and design tables, derived and molded parts, thin features and sheet metal, and the application of photoworks, edrawings, toolbox and 3D meeting. Prerequisite: 10-606-130.

10-606-140 Dimensioning/GDT 3 credits

Mechanical drafting dimensioning fundamentals are developed including conventional tolerancing and basic hole and shaft tolerancing methods. The course continues with developing the technical knowledge and skills, which are required for meaningful application and interpretation of geometric dimensioning and tolerancing on mechanical drawings in accordance with the current ASME Y14.5M standard. Prerequisites: 10-606-100, 10-606-120, and 10-606-130.

10-606-150 CAE Applications 2 credits

Introduction to how engineering and manufacturing utilize a parametric modeled file. Students will follow parts through the product development cycle utilizing parametric design, computer aided manufacturing, stress analysis, computer simulation and rapid prototyping. Prerequisite/Co-requisite: 10-606-186.

10-606-152 PLC, Hydraulics, Pneumatics 2 credits

Overview of the basics of programmable logic controllers, hydraulics, and pneumatics. Basic system components, symbols and schematics are explored. Prerequisite: third or fourth semester standing.

10-606-155 Statics & Mechanics 3 credits

Introduces students to the basic fundamentals of statics. Learners study and analyze forces and loading conditions applied to structures and mechanical devices. Areas of study include resultant and equilibrant of forces, moments, nonconcurrent-coplanar forces (trusses), concurrent-noncoplanar forces and static friction. Prerequisite: 10-804-114; Co-requisite: 10-804-116.

10-606-160 Fundamentals Of Manufacturing/ Engineering Materials 2 credits

An introduction to the engineering materials and their properties used in industry. Material testing methods and their relevance to design applications are studied through various lab activities. In addition, this course begins the examination of various contemporary manufacturing processes used in industry today.

10-606-161 Manufacturing Processes 2 credits

Introduces students to computer aided design and manufacturing concepts through an integrated material removal project. Upon completing the project, students will use various measurement and inspection equipment to verify part conformance to engineering specifications. Prerequisites: 10-606-130 and 10-606-160.

10-606-163 Engineering Technology Project Management 2 credits

An introduction to Project Management and the Product Development Process, as they relate to the Mechanical Design Technology field. In this course, students will prepare a team Design Project Plan (DPP) for a future design project to be developed in the 10-606-186 Engineering Technology Applications course. Prior to the completion of the DPP, students will learn about interpersonal and leadership skills in team environments, as well as elements of the design process and project management including scope, time, cost, and quality of the design project. Note: 10-606-186 must be taken the following semester.

10-606-164 Quality Systems 2 credits

This course is an introduction to the foundational building blocks necessary for effective understanding and application of quality principles used today. The fundamentals of quality, measurement for quality, and statistics for quality will be explored as they relate to productivity, specifications, and inspections of processes. In addition, process capability and design of experiments is also explored. Prerequisite: 10-606-140.

10-606-170 Strength Of Materials 3 credits

An analysis of the principles of strength of materials as they apply to various fasteners, welded joints, beams and shafts through practical design and analysis problems. Topics covered include simple stresses, mechanical properties of materials, center of gravity, moment of inertia, shear force and bending diagrams and beam design. Related engineering analysis software is utilized throughout the course. Prerequisite: 10-606-155.

10-606-186 Engineering Technology Applications 3 credits

A comprehensive application of the Mechanical Design Technology program, in which student teams will implement the design project plan previously developed in the Project Management course. Implementation of the design project plan will be carried out through a 3-step concurrent engineering design process: Ideation, Refinement, and Implementation. A final presentation of the design project will be presented in a formal design project notebook, as well as through a formal team design project presentation. Prerequisite: 10-606-163.

10-606-193 Career Development 1 credit

Acquaints students with the process and the development of a plan for securing employment in the mechanical design field. Includes letters of introduction, resume design, personal data sheets, portfolio design and job interview techniques. Presentations by industry professionals in the areas of human resources, management, design, and job placement will overview the industry perspective and requirements for employment in the career of mechanical design. Prerequisite: third-semester standing.

Career Potential:

- Detailer
- Mechanical Design Technician
- Mechanical Drafter
- CAD Drafter

With additional education and/or experience, graduates may find employment as:

- Mechanical or Product Designer
- Lead Designer
- Project Engineer
- Technical Sales/Service Representative

More detailed and updated information on this program may be available at: madisoncollege.edu. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

Madison Area Technical College provides equal opportunity in education and employment.

Rev. 04/15

Medical Administrative Specialist

Program Number: 10-106-4

Associate in Applied Science Degree

Business Technology Program Cluster

School of Business and Applied Arts

Program offered at Truax and Fort Atkinson campuses; and completely online

For information call:
(608) 246-6003 or (800) 322-6282 Ext. 6003

About the Program

The Medical Administrative Specialist Program prepares students for work in the office of a doctor, clinic, hospital, or for employment wherever knowledge of medical terminology, professional procedures and ethics is required. It also provides excellent preparation for administrative positions in any business. The status of Certified Medical Assistant-Administrative can be acquired upon completion of the required job experience and written examinations. To graduate from the program, a student must receive a grade of C or higher in all program courses.

Graduates of this program typically earn from \$30,000 to \$40,000 per year.

Admissions Requirements

To review program admission requirements and application processing dates, visit the program's website at:
<http://madisoncollege.edu/program-info/medical-administrative-specialist>.

Note: It is vital that each program student has access to a computer. All Microsoft Office courses use the 2013 version.

Preparation for MOS Certification Microsoft Office Specialist (MOS) certification is an internationally recognized program that verifies knowledge, skills, and abilities needed to effectively use Microsoft Office Products. Completing the Medical Administrative Specialist program at Madison College prepares you to become MOS certified. For more information including where to take the certification exams, visit <http://certipoint.com/mos>.

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

First Semester		Credits	Hrs/week Lec-Lab
10-103-165	Outlook.....	1	0.25-1.5
10-106-107	Business Document Applications***.....	3	1-4
10-106-108	Proofreading and Editing.....	3	2-1
10-106-139	Keyboard Skillbuilding (Qtr. 2).....	1	0.25-1.5
10-106-178	Medical Language for Business Professionals 1.....	2	1-2
10-801-195	Written Communication.....	3	3-0
10-809-172	Intro to Diversity Studies.....	3	3-0
Semester Total		16	

Second Semester		Credits	Hrs/week Lec-Lab
10-106-109	Business Spreadsheet Applications***.....	3	1-4
10-106-165	Medical Administrative Procedures**.....	3	1-4
10-106-179	Medical Language for Business Professionals 2.....	2	0.5-3
10-501-153	Body Structure.....	3	3-0
10-801-196	Oral/Interpersonal Communication.....	3	3-0
10-809-197	Contemporary American Society.....	3	3-0
Semester Total		17	

Third Semester		Credits	Hrs/week Lec-Lab
10-106-166	Healthcare Documentation Techniques and Procedures*.....	3	1-2
10-106-190	Professional Development.....	1	0.25-1.5
10-106-191	Introduction to Healthcare Documentation.....	2	1-2
10-106-231	Business Presentations and Publications***.....	3	1-4
10-106-240	Business Information Management***.....	3	1-4
10-804-123	Math with Business Applications.....	3	3-0
Semester Total		15	

Fourth Semester		Credits	Hrs/week Lec-Lab
10-101-106	Accounting Fundamentals.....	3	3-0
10-106-134	Software Simulation.....	2	0.5-3
10-106-177	Specialized Insurance Claims**.....	2	1-2
10-106-186	Introduction to Project Management.....	2	0.5-3
10-106-194	Career Management.....	1	0.25-1.5
10-106-195	Internship.....	1	0-4
10-809-195	Economics.....	3	3-0
10-809-199	Psychology of Human Relations.....	3	3-0
Semester Total		17	

* Course offered only fall semester.

** Course offered only spring semester.

*** Due to changing technology, all technology courses must be completed within (5) years of program admission in order to satisfy graduation requirements.

Note: Students are assessed for correct placement in English or mathematics courses based on their scores on the COMPASS test or on completion of the appropriate prerequisite(s).

Additionally, there may be courses in other subject areas that may use COMPASS scores as prerequisites when reading, writing, math, or critical thinking competencies are required.



Program Courses

10-103-165 Outlook 1 credit
Use Microsoft's messaging and personal information management program. Communicate by email; schedule appointments, meetings and events; manage the Inbox, contact lists, tasks and notes; track and archive messages; configure and customize Outlook; record journal entries; manage Outlook components; integrate Outlook with other Office programs.

10-106-107 Business Document Applications 3 credits
Emphasis is placed on learning to use word processing software to efficiently and effectively produce business documents. Students will apply skills to solve practical problems in a project-based format. Explore fundamentals and best practices in document creation, editing, formatting, collaboration, tables, mail merge, desktop publishing, themes, templates, forms, and macros. Recommended: Windows competency, including solid file management skills. Prerequisite: sufficient COMPASS test scores to allow enrollment in Written Communication, 10-801-195.

10-106-108 Proofreading and Editing 3 credits
Develop proofreading skills: punctuation, grammar, spelling and usage errors. Edit documents: appropriate content, conciseness, clarity, point of view.

10-106-109 Business Spreadsheet Applications 3 credits
Create professional data-driven spreadsheets utilizing Excel spreadsheet software and information from a variety of data sources. Create charts and complex formulas; utilize advanced functions and apply conditional formatting; develop an Excel application with data validation, sheet protection, and macros. Work with financial tools and functions; perform what-if analysis with Scenario Manager, Data Tables, Goal Seek and Solver. Recommended: Windows competency, including solid file management skills. Prerequisite: sufficient COMPASS test scores to allow enrollment in Written Communication, 10-801-195.

10-106-134 Software Simulation 2 credits
This course uses a simulation that integrates multiple software applications and features of Windows, Word, Excel, Access, and PowerPoint programs. Students manage information, apply critical-thinking skills to solve problems, research topics, and compose documents. Prerequisites: 10-106-107, 10-106-109, 10-106-231, 10-106-240, 10-106-133, and either 10-106-165 or 10-106-166.

10-106-139 Keyboard Skillbuilding 1 credit
Refine keyboarding technique, increase speed, and improve accuracy through individualized practice. The student must be able to touch type, which is defined as using the correct key reaches and not looking at the keys while typing, at a minimum rate of 25 words per minute. Equipment requirement: Access to a PC Windows platform computer. Coursework cannot be completed using a Macintosh computer. Prerequisite: must be able to touch type, which is defined as using the correct key reaches and not looking at the keys while typing, at a minimum rate of 25 words per minute.

10-106-165 Medical Administrative Procedures 3 credits
This class is designed to emphasize administrative procedures in the diverse electronic medical office environment. Competencies include: communication, reception, appointment scheduling, telephone procedures, daily transactions, medical billing and collecting, insurance and coding basics, meeting management, and travel itineraries. Prerequisites/Co-requisites: 10-103-137, 10-106-178; AND sufficient scores on the COMPASS test to allow for enrollment in Written Communication, 10-801-195; or completion of or concurrent enrollment in Written Communication or English 1, 20-801-1.

10-106-166 Healthcare Documentation Techniques and Procedures 3 credits
Emphasizes the skilled proofreading, editing (including detailed coverage of grammar and punctuation), formatting and reference use techniques needed to produce high quality reports demanded by medical facilities. Prerequisite: 10-106-108; Co-requisite: 10-106-107.

10-106-177 Specialized Insurance Claims 2 credits
Identifies in-depth insurance knowledge for private and government insurance programs including indemnity, HMO, PPO, Medicare, medical Assistance, third party liability, worker's compensation, etc. Covers knowledge of deductibles, coinsurance, copayments, exclusions, medical necessity, referrals, prior authorization, coordination of benefits, COBRA, charity Care, collections, pre-existing periods, allowed amounts, malpractice, dental, inpatient and outpatient benefits, and lifetime maximums. Claims reimbursement methods, contractual allowances, fee schedules, and other rules to facilitate timely payment of claims are also incorporated. Prerequisite: 10-106-165.

10-106-178 Medical Language for the Business Professional 1 2 credits

This course is designed to give the beginning business student an insight into medical language. Students will explore how medical terms are formed, become familiar with the meaning of many word roots, prefixes, and suffixes, and spell, define, and pronounce many medical terms by understanding word components. Students will also exhibit mastery in the use of medical dictionaries and reference materials. Fundamentals will be discussed as they relate to evaluation of health practices by body system and by the body as a whole.

10-106-179 Medical Language for the Business Professional 2 2 credits

Continuation of Medical Language for the Business Professional 1, 10-106-178 covering the other half of the body. Prerequisite: 10-106-178.

10-106-186 Introduction to Project Management 2 credits

Plan and coordinate projects, develop timelines, determine priorities, increase individual and team productivity, control the workday and allocate resources using graphic tools such as MS Project or MS Excel software. Project management and coordination techniques and concepts are learned by participating in team projects and completing a personal project plan.

10-106-190 Professional Development 1 credit

Using the internet and traditional methods, research the job market, develop a job search/career portfolio, and explore networking. Create a professional image for job search. The portfolio includes a resume, cover letter, thank-you letter, reference sheet, work samples and other job search materials. Prerequisite: course is to be taken in the last year of the program.

10-106-191 Introduction to Healthcare Documentation 1 credit

This course provides an introduction to healthcare documentation practices and develops a working knowledge of basic document, medical language, and medical report formats. The student will develop technology, medical knowledge, English language, proofreading, editing, and research skills, achieving beginning production and accuracy standards. Prerequisites: 10-103-137 (or 10-106-107), 10-106-108, and 10-106-178.

10-106-194 Career Management 1 credit

Identification of factors associated with job success: conflict resolution, proper etiquette, harassment performance appraisal, employee benefits and adopting change.

10-106-195 Internship 1 credit

Students complete a 72-hour internship in an office setting supervised by a cooperating employer. The office setting is a business, medical, or legal office depending on the student's program. Must be in one of the last 2 semesters before graduation. Suggested completion in last semester of program. Prerequisites: 10-106-179, 10-106-108, 10-106-165, 10-106-194, 10-501-153, 10-106-240, and 10-106-109.

10-106-231 Business Presentations And Publications 3 credits

Create professional business presentations using PowerPoint and other presentation software. Explore best practices for designing and presenting. Work with graphics, slide master, sound, video, charts and tables. Add transitions, narration and animation to enhance your presentations. Explore desktop publishing using Publisher and other desktop publishing software. Apply basic design principles while creating flyers, newsletters, and brochures. Recommended: Windows competency, including solid file management skills. Prerequisite: sufficient COMPASS test scores to allow enrollment in Written Communication, 10-801-195.

10-106-240 Business Information Management 3 credits

Concentrates on the fundamentals of managing the record life cycle; supplies and equipment; charge-out procedures; retention schedules; transfer methods; control measurements; imaging systems and information security. Incorporates database skills including how to plan, create, and manage data; modify a database structure; relate tables; find, filter, query and sort data; and create forms and reports. Recommended: Windows competency, including solid file management skills. Prerequisite: sufficient COMPASS test scores to allow enrollment in Written Communication, 10-801-195.

10-501-153 Body Structure and Function 3 credits

A concise introduction to human body structure and function. Normal and abnormal states of the body and basic disease processes affecting the body are emphasized. Common problems encountered in a variety of health care settings are presented. Suggested completion of 10-106-178.

Career Potential:

- Medical Administrative Assistant
- Clinical Administrative Coordinator
- Patient Appointment Scheduler
- Medical Receptionist
- Medical Records Clerk
- Medical Secretary
- Health Unit Coordinator
- Medical Billing Specialist
- Insurance Claims Processor
- Program Assistant
- Word Processing Operator
- Admitting/Discharge Clerk
- Department/Clinic Assistant
- General Office Clerk
- General Office Receptionist

With additional education and/or work experience, graduates may find employment as:

- Medical Language Specialist
- Health Care Documentation Specialist
- Chart Analyst
- Health Record Technologist
- Patient Information Specialist
- Medical Coding Specialist
- Medical Office Manager

More detailed and updated information on this program may be available at: madisoncollege.edu. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

Madison Area Technical College provides equal opportunity in education and employment.

Medical Assistant

Program Number: 31-509-1

One-Year Technical Diploma

Health-Related Professions Program Cluster

School of Health Education

Program offered at Madison Campuses

For information call: (608) 246-6065, (608) 243-4774, or (800) 322-6282 Ext. 6065 or 4774

About the Program

The Madison Area Technical College Medical Assistant program is accredited by the Commission on Accreditation of Allied Health Education Programs (CAAHEP), on recommendation of the Curriculum Review Board of the American Association of Medical Assistants Endowment (AAMAE). Commission on Accreditation of Allied Health Education Programs, 1361 Park Street, Clearwater, FL 33756, (727) 210-2350. The program is designed to orient students to the duties of a physician's office employee, from general office procedures to the technical phases of examining room assisting and elementary medical laboratory techniques. Occupational experience is provided through placement in a local office/clinic during the last four weeks of the final semester. Graduates are eligible to sit for the national certification examination immediately after graduation. Aptitudes and interests that are helpful are a genuine interest in medicine and in helping people.

The Medical Assistant is a two-semester program which prepares students to work in doctors' offices, clinics and other medical facilities. As one of healthcare's most versatile and in demand professions, graduates perform various duties such as assisting in the physical exam, drawing blood, administering EKGs, and carrying out lab procedures. Clinical experiences are provided through placement in a local medical clinic during the last four weeks of the final semester. Graduates are eligible and encouraged to sit for the national certification examination offered by the American Associate of Medical Assistants (www.aama-ntl.org).

Admission Requirements

To review program admission program requirements and application processing dates visit the programs website at: <http://madisoncollege.edu/program-info/medical-assistant>.

Program Requirements

- 1) a physical health exam with the [Health History form](#) completed, including documentation of immunizations is required prior to beginning program lab courses;
- 2) a two-step TB test is required at least once per year;
- 3) current Healthcare Provider CPR Certification prior to Practicum;
- 4) Criminal Background Check prior to clinicals, for more information: www.dhfs.state.wi.us/caregiver.

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

First Semester		Credits	Hrs/week Lec-Lab
31-509-301	Medical Assistant Administrative Procedures	2	2-0
31-509-302	Human Body in Health and Disease** OR	3	5-0
20-806-206	General Anatomy & Physiology** OR	(4)	5-4
20-806-208	Anatomy & Physiology 1 & 2	(8)	3-2
10-501-101	Medical Terminology**	3	3-0
31-509-303	Medical Assistant Laboratory Procedures 1	2	2-2
31-509-304	Medical Assistant Clinical Procedures 1	4	4-4
10-103-133	Excel-Beginning**	1	0.25-1.5
10-103-137	Word-Beginning**	1	0.25-1.5
Semester Total		16	

Second Semester		Credits	Hrs/week Lec-Lab
31-509-305	Medical Assistant Laboratory Procedures 2	2	2-3
31-509-306	Medical Assistant Clinical Procedures 2	3	4-3
31-509-307	Medical Office Insurance and Finance	2	3-0
31-501-308	Pharmacology for Allied Health	2	4-0
31-509-309	Medical Law, Ethics and Professionalism OR	2	2-0
20-809-266	Ethics in Medicine	(3)	3-0
10-801-195	Written Communication** ### OR	3	3-0
20-801-201	English 1** ###	(3)	(3-0)
31-509-310	Medical Assistant Practicum	3	1
Semester Total		17	

**Course which may be taken prior to entering the program

English taken with second semester classes are to be completed in less than 12 weeks in order to participate in the Medical Assistant Clinicals and Practicum

Note: Students are placed in English or mathematics courses based on their scores on the COMPASS or ASSET test or on completion of the appropriate prerequisite/s.

Note: A copy of the [essential functions](#) necessary to successfully complete the program of study is available on the web site.



Program Courses

31-501-308 Pharmacology for Allied Health 2 credits
Introduces students to medication and basic pharmacology principles. Students apply basic pharmacodynamics to identify common medications and calculate dosages in preparation for medication administration. Prerequisite: All first semester courses. Co-requisites: 31-509-305 and 31-509-306.

31-509-301 Medical Assistant Administration Procedures 2 credits
Introduces medical assistant students to office management and business, business administration, and the electronic medical record (EMR) in the medical office. Students learn to schedule appointments, perform filing, record keeping, inventory of supplies, telephone and reception duties, to communicate effectively with patients and other medical office staff. Prerequisites or Co-requisites: computer classes and admitted to Medical Assistant program.

31-509-302 Human Body in Health & Disease 3 credits
Focuses on diseases that are frequently first diagnosed and treated in the medical office setting. Students learn to recognize the causes, signs and symptoms of diseases of the major body systems as well as the diagnostic procedures, usual treatment, prognosis and prevention of common diseases. Prerequisite or Co-requisite: 10-501-101.

31-509-303 Medical Assistant Lab Procedures 1 2 credits
Introduces medical assistant students to laboratory procedures commonly performed by medical assistants in a medical office setting. Students perform CLIA waived routine laboratory procedures commonly performed in the ambulatory care setting. Students follow laboratory safety requirements and federal regulations while performing specimen collection and processing, microbiology and urinalysis testing. Prerequisite or Co-requisite: all other first semester courses. Co-requisite: 31-509-304 and admitted to Medical Assistant program.

31-509-304 Medical Assistant Clinical Procedures I 4 credits
Introduces medical assistant students to the clinical procedures performed in the medical office setting. Students perform basic examining room skills including screening, vital signs, patient history, minor surgery and patient preparation for routine and specialty exams in the ambulatory care setting. Prerequisite or Co-requisite: all other first semester courses. Co-requisites: 31-509-303 and admitted to Medical Assistant program.

31-509-305 Medical Assistant Lab Procedures 2 2 credits
Prepares students to perform laboratory procedures commonly performed by medical assistants in the ambulatory care setting under the supervision of a physician. Students perform phlebotomy, immunology, hematology and chemistry laboratory procedures. Prerequisite: all first semester courses. Co-requisites: 31-509-306 and 31-509-310.

31-509-306 Medical Assistant Clinical Procedures 2 3 credits
Prepares students to perform EKG, spirometry, and administer medications including topical, oral, and injections. Prerequisite: all first semester courses. Co-requisites: 31-509-305 and 31-509-310.

31-509-307 Medical Office Insurance and Finance 2 credits
Introduces medical assistant students to health insurance and finance in the medical office. Students perform bookkeeping procedures, apply managed care guidelines and complete insurance claim forms. Students use medical coding and managed care terminology to perform insurance-related duties. Prerequisites: admitted to the program, 10-501-101, 31-509-302, and computer courses.

31-509-309 Medical Law, Ethics and Professionalism 2 credits
Prepares students to display professionalism and perform within ethical and legal boundaries in the health care setting. Students maintain confidentiality, examine legal aspects of the medical record, perform quality improvement procedures, examine legal and bioethical issues, and demonstrate awareness of diversity. Prerequisites: admitted to the program. Prerequisites or Co-requisites: 10-501-101 and 31-509-302.

31-509-310 Medical Assistant Practicum 3 credits
Requires medical assistant students to integrate and apply knowledge and skills from all previous medical assistant courses in actual ambulatory health care settings. Learners perform medical assistant administrative, clinical and laboratory duties under the supervision of trained mentors to effectively transition to the role of a medical assistant. This is a supervised, unpaid, clinical experience. Prerequisites: 31-509-303 and 31-509-304. Co-requisites: 31-509-305 and 31-509-306.

Career Potential:

- Medical Assistant
- Claims Analyst
- Medical Records Clerk
- Medical Office Assistant
- Phlebotomist
- Pharmacy Aide
- Receptionist
- EKG Technician

With additional education and/or work experience, graduates may find employment as:

- Laboratory Assistant
- Medical Office Manager
- Medical Transcriptionist

More detailed and updated information on this program may be available at: madisoncollege.edu. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

Madison Area Technical College provides equal opportunity in education and employment.

Rev. 02/15

Medical Billing Specialist Certificate

Program Number: 90-106-6

Certificate

Business Technology Program Cluster

School of Business and Applied Arts

Certificate courses are offered at Madison; most courses are also offered at the Fort Atkinson and Watertown campuses and online.

For information call:

(608) 246-6003 or (800) 322-6282 Ext. 6003

About the Certificate

Clerical jobs are among the top five occupations for projected growth nationally. Madison College has developed this certificate to help you get hired, promoted or to update your skills by providing medical billing skills used in today's modern medical offices. Full- and part-time positions are available in small and large healthcare organizations throughout Wisconsin and the United States. Typical working hours in this occupation are weekday business hours, generally 8:00 a.m. to 5:00 p.m., with some variation.

The skills obtained in the Medical Billing Specialist Certificate may be applied to the Medical Administrative Specialist Associate in Applied Science degree program. In addition, many of the certificate credits may be applied to other programs at Madison College.

This certificate is available to those working full time seeking skills to change careers. Current Madison College students may complete this certificate in conjunction with their existing course work. Most courses are available both online and in the classroom.

Students who successfully complete this certificate typically earn \$9.50 to \$15.00 per hour based on their experience and other job skills.

Admission Requirements

To review program admission requirements and application processing dates, visit the program's website at: <http://madisoncollege.edu/program-info/medical-billing-specialist-certificate>.

Requirements for Completion

The certificate will be awarded upon completion of the requirements with a minimum of a 2.0 grade average and no course grade lower than a C. The certificate will be awarded when completion of all requirements is verified after the semester the last course has been completed.

No more than 50% of the certificate credits may be through an advanced standing.

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

		Hrs/week	
		Credits	Lec-Lab
First Semester/Fall Courses			
10-106-101	Keyboarding Introduction (Q1).....	1.....	0.25-1.5
10-103-123	Windows 7 OR	1.....	0.25-1.5
10-103-122	Windows 8.....	(1).....	0.25-1.5
10-103-137	Word-Beginning (Q2) OR	1.....	0.25-1.5
10-106-107	Business Document Applications.....	(3).....	1-4
10-106-178	Medical Language for the Business Professional 1*.....	2.....	2-0
10-106-165	Medical Administrative Procedures.....	3.....	1-4
Total		8	

		Hrs/week	
		Credits	Lec-Lab
Second Semester/Spring Courses			
10-106-139	Keyboard Skillbuilding.....	1.....	0.25-1.5
10-106-179	Medical Language for the Business Professional 2*.....	2.....	1-2
10-103-133	Excel-Beginning (Q3) OR	1.....	0.25-1.5
10-106-109	Business Spreadsheet Applications.....	(3).....	1-4
10-103-139	Excel-Intermediate (Q4) OR	1.....	0.25-1.5
10-106-109	Business Spreadsheet Applications.....	(3).....	1-4
10-106-177	Specialized Insurance Claims**.....	2.....	1-2
10-106-164	Customer Contact Skills.....	1.....	0.25-1.5

*Course offered in fall semester only

**Course offered in spring semester only

Courses are listed in suggested sequence.

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Courses

10-103-123 Windows 7 1 credit

Introduces the Windows 7 operating system: work with common elements (Windows, menus, toolbars, panes, dialog boxes, and Help), use accessory programs, manage file/folders using MY Computer and Explorer, customize using the Control Panel and maintain the computer.

10-103-133 Excel–Beginning 1 credit

Introduction to Excel spreadsheet software. Create, edit, save, format, print, perform calculations, copy/move text and formulas, create charts, create complex formulas and expand use of functions. Prerequisite: competency in Windows operating system.

10-103-137 Word–Beginning 1 credit

Introduction to Microsoft's word processing software. Create, edit, save, format and print basic documents; cut/copy/paste and find/replace text; apply font styles and effects; add bullets and numbering; work with tabs and indents; align text; apply borders and shading; use wizards and templates to produce documents; insert headers/footers; apply different formatting to document sections; create columns; insert Clip Art. Create and format tables, modify rows and columns, perform calculations, sort table data, customize tables. Prerequisite: competency in Windows operating system.

10-103-139 Excel–Intermediate 1 credit

Work with financial functions, data tables, amortization schedules, hyperlinks, lists, templates, and multiple worksheets and workbooks. Prerequisite: 10-103-133 or equivalent.

10-106-101 Keyboarding Introduction 1 credit

Learn computer keyboarding (alphabetic and numeric keypad) using proper technique; develop speed and accuracy.

10-106-139 Keyboard Skillbuilding 1 credit

Refine keyboarding technique, increase speed, and improve accuracy through individualized practice. The student must be able to touch type, which is defined as using the correct key reaches and not looking at the keys while typing, at a minimum rate of 25 words per minute. Equipment requirement: Access to a PC Windows platform computer. Coursework cannot be completed using a Macintosh computer.

10-106-164 Customer Contact Skills 1 credit

Identify internal/external customers, develop verbal, nonverbal, and listening communication skills, develop problem-solving techniques, and ways of adding value to a customer interaction. Examine how technology impacts customer service, examine the impact on service breakdowns, and examine campaigns for customer loyalty.

10-106-165 Medical Administrative Procedures 3 credits

This class is designed to emphasize administrative procedures in the electronic medical office environment. Competencies include: Communication, reception, appointment scheduling, records management, telephone procedures, daily transactions, medical billing and collecting, insurance and coding basics, composing routine business correspondence, keeping an inventory of supplies, meeting management, and travel itineraries. Pre-/Co-requisites: 10-103-137 (or 10-106-107), 10-106-178, and sufficient scores on the COMPASS test (scores that allow for enrollment in Written Communication, 10-801-195), or completion or concurrent enrollment in Written Communication or English 1.

10-106-177 Specialized Insurance Claims 2 credits

Identifies in-depth insurance knowledge for private and government insurance programs including indemnity, HMO, PPO, Medicare, Medical Assistance, third party liability, worker's compensation, etc. Covers knowledge of deductibles, coinsurance, copayments, exclusions, medical necessity, referrals, prior authorization, coordination of benefits, COBRA, Charity Care, collections, pre-existing periods, allowed amounts, malpractice, dental, inpatient and outpatient benefits, and lifetime maximums. Claims reimbursement methods, contractual allowances, fee schedules, and other rules to facilitate timely payment of claims are also incorporated. Pre-/Co-requisite: 10-106-165.

10-106-178 Medical Language for the Business Professional 1 2 credits

Introduces medical terminology used in transcription and administrative assistant positions. Covers how medical terms are formed; the meaning of many word roots, prefixes and suffixes; spelling, definition, and pronunciation of word components; and how to use a medical dictionary. One half of the body is covered in this class.

10-106-179 Medical Language for the Business Professional 2 2 credits

Continuation of Medical Language for the Business Professional 1, 10-106-178, covering the other half of the body. Prerequisite: 10-106-178.

Career Potential:

- Medical Billing Specialist
- Billing Customer Service Representative
- Collections Analyst
- Patient Accounts Specialist
- Reimbursement Analyst
- Insurance Specialist
- Medical Customer Service Representative

With advanced training students may find employment as:

- Medical Coding Specialist
- Coding Technician
- Medical Administrative Specialist
- Medical Transcriptionist
- Medical Word Processing Operator
- Department/Clinic Assistant – Objective, Senior
- Health Unit Coordinator

More detailed and updated information on this program may be available at: madisoncollege.edu. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

Madison Area Technical College provides equal opportunity in education and employment.

Rev. 04/15

Medical Coding Specialist

One-Year Technical Diploma

Program Number: 31-530-2

Health-Related Professions Program Cluster

School of Health Education

Program offered at Madison Campuses

For information call: (608) 246-6065, (608) 246-6015, or
(800) 322-6282 Ext. 6065 or 6015

About the Program

The Medical Coding Specialist program prepares individuals for employment as entry-level coding specialists in health care facilities such as hospitals, clinics, physician practice groups, surgery centers, long-term care facilities and home health care agencies. Coding specialists are also employed by consulting firms, coding and billing services, insurance companies, governmental agencies and computer software companies.

The coding specialist reviews medical documentation provided by physicians and other health care providers and translates this into numeric codes. The coding specialist assigns and sequences diagnostic and procedural codes using universally recognized coding systems. Several uses of coded data are for payment of health care claims, statistics and medical research.

Aptitudes and interests which may be helpful for success in this program include the: 1) ability to be precise, exact and detail-oriented; 2) ability to adhere to standards and guidelines; 3) passion for learning about the medical field; 4) ability to communicate well with others; 5) ability to accept challenges and problem-solve; and 6) respect for confidential information.

A copy of the essential functions necessary to successfully complete the program of study is on the program's website.

Admission Requirements

To review program admission requirements and application processing dates, visit the program's website at: <http://madisoncollege.edu/program-info/medical-coding-specialist>.

Clinical Laboratory Experience

An 18-hour, unpaid clinical laboratory experience is part of the CPT Coding course (10-530-184). This takes place during regular business hours at a regional health care facility, insurance company, consulting firm or governmental agency.

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

Medical Coding Specialist Program

Pre-Program Courses		Credits	Hrs/week Lec-Lab
10-501-153	Body Structure and Function OR	3	3-0
20-806-206	General Anatomy & Physiology**	(4)	(3-2)
10-501-101	Medical Terminology	3	3-0
10-103-123	Windows 7 OR	1	0.25-1.5
10-103-122	Windows 8	(1)	(0.25-1.5)
10-103-137	Word-Beginning	1	0.25-1.5
10-103-133	Excel-Beginning	1	0.25-1.5
Core Program Courses			
Cluster 1			
10-530-181	Introduction to the Health Record	1	0.5-1
10-530-182	Human Diseases for the Health Professions	3	3-0
10-530-197	ICD Diagnosis Coding	3	2-2
10-530-199	ICD Procedure Coding	2	1-2
Cluster 2			
10-530-184	CPT Coding	3	2-2
10-530-185	Health Care Reimbursement	2	1-2
10-530-168	Advanced ICD Coding	3	2-2
Cluster 3			
10-530-176	Health Data Management	2	1-2
10-530-187	Advanced CPT Coding	3	2-2
10-530-188	Certification and Professional Development	1	1-0
10-530-189	Management of Coding Services	1	1-0
Total		33	

Course Delivery Format

Most core program courses are offered in both the face/face (on campus) format and the online format. All courses are not offered each semester. Please refer to the Medical Coding Specialist Handbook, Appendices E & G, for more information on the courses delivery format and courses schedules. The MCSP Handbook is available on the program's website under the Additional Info tab.

**General Anatomy and Physiology is recommended for those who plan to pursue an associate degree and/or a bachelor's degree



Program Courses

10-501-101 Medical Terminology 3 credits

Focuses on the component parts of medical terms: prefixes, suffixes and word roots. Students practice formation, analysis and reconstruction of terms. Emphasis is on spelling, definition and pronunciation. Introduction to operative, diagnostic, therapeutic and symptomatic terminology of all body systems, as well as systemic and surgical terminology, is included.

10-501-153 Body Structure & Function 3 credits

A concise introduction to human body structure and function. Normal and abnormal states of the body and basic disease processes affecting the body are emphasized. Common problems encountered in a variety of health care settings are presented.

10-530-168 Advanced ICD Coding 3 credits

Requires the student to apply and expand the knowledge gained from the basic courses, ICD Diagnosis Coding & ICD Procedure Coding, to more difficult cases. The student will develop critical-thinking skills by using current references to research coding questions and issues. Computerized encoding software is utilized. Prerequisite: Cluster 2 courses; Co-requisite: other Cluster 3 courses.

10-530-176 Health Data Management 2 credits

Introduces the use and structure of health care data elements, data sets, data standards, their relationships to primary and secondary record systems and health information processing. Prerequisites: Cluster 1 and 2 Core program courses; Co-requisite: Cluster 3 core program courses.

10-530-181 Introduction to the Health Record 1 credit

Prepares students to illustrate the flow of health information in various health care delivery systems and within the health information department. It prepares students to retrieve data from health records. Professional ethics, confidentiality and security of health information are emphasized. Prerequisite: Pre-Program courses; Co-requisite: other Cluster 1 courses.

10-530-182 Human Diseases for the Health Profession 3 credits

Focuses on the common diseases of each organ/body system as encountered in all types of health care settings by health professionals. Emphasis is placed on understanding the etiology (cause), signs and symptoms, diagnostic tests, treatment (including pharmacologic) of each disease. Prerequisite: Pre-Program courses; Co-requisite: other Cluster 1 courses.

10-530-184 CPT Coding 3 credits

Prepares students to assign CPT codes, supported by medical documentation with entry-level proficiency. Students apply CPT instructional notations, conventions, rules and official coding guidelines when assigning CPT codes to case studies and actual medical record documentation. Prerequisites: Cluster 1 courses; Co-requisites: other Cluster 2 courses.

10-530-185 Health Care Reimbursement 2 credits

Prepares the students to compare and contrast health care payers, illustrate the reimbursement cycle and to comply with regulations related to fraud and abuse. Students assign Diagnosis Related Groups (DRGs), Ambulatory Payment Classifications (APCs), and Resource Utilization Groups (RUGs) with entry-level proficiency using computer encoding and grouping software. Prerequisite: Cluster 1 courses; Co-requisite: other Cluster 2 courses.

10-530-187 Advanced CPT Coding 3 credits

Requires the student to apply and expand the knowledge gained from the basic course, CPT Coding, to more difficult cases. The student will develop critical-thinking skills by using current references to research coding questions and issues. Computerized encoding software is utilized. Prerequisite: Cluster 2 courses; Co-requisite: other Cluster 3 courses.

10-530-188 Certification and Professional Development 1 credit

This course prepares students for coding certification and includes mock coding certification exams. Students participate in professional development activities and discuss career progression opportunities. Prerequisite: Cluster 2 courses; Co-requisite: other Cluster 3 courses.

10-530-189 Management of Coding Services 1 credit

This course focuses on common coding management issues including coding quality, coding productivity, and workflow processes. Recruitment training and retention of coding staff are included. Prerequisite: Cluster 2 courses; Co-requisite: other Cluster 3 courses.

10-530-197 ICD Diagnosis Coding 3 credits

Prepares students to assign ICD diagnosis codes supported by medical documentation with entry-level proficiency. Students apply instructional notations, conventions, rules, and official coding guidelines when assigned ICD procedure codes to case studies and actual medical record documentation. Prerequisite: Pre-Program courses; Co-requisite: Cluster 1 core program courses.

10-530-199 ICD Procedure Coding 2 credits

Prepares students to assign ICD procedure codes supported by medical documentation with entry-level proficiency. Students apply instructional notations, conventions, rules and official coding guidelines when assigned ICD procedure codes to case studies and actual medical record documentation. Prerequisites: Pre-Program courses; Co-requisite: Cluster 1 core program courses.

Other required courses:

- 10-103-123 Windows 7
- 10-103-137 Word–Beginning
- 10-103-133 Excel–Beginning

Certification

Graduates may become certified by taking one or more of the following national coding certification examinations:

American Health Information Management Association (AHIMA)

- *Certified Coding Associate (CCA)
- *Certified Coding Specialist (CCS)
- *Certified Coding Specialist–Physician Based (CCS-P)

American Academy of Professional Coders (AAPC)

- *Certified Professional Coder (CPC)
- *Certified Professional Coder–Hospital Based (CPC-H)

Career Potential:

- Coder
- Coding Specialist
- Coding Technician

With additional education and/or work experience, graduates may find employment as:

- Certified Coding Specialist
- Certified Professional Coder
- Registered Health Information Technician
- Registered Health Information Administrator
- Reimbursement Specialist
- Supervisor
- Consultant
- Seminar Presenter/ Speaker

More detailed and updated information on this program may be available at: madisoncollege.edu. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

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Medical Laboratory Technician

Program Number: 10-513-1

Associate in Applied Science Degree

Health-Related Professions Cluster

School of Health Education

Program offered at Madison Campuses

For information call: (608) 246-6065, (608) 246-6459, or
(800) 322-6282 Ext. 6065 or 6459

About the Program

This program is approved by the National Accrediting Agency for Clinical Laboratory Science (5600 N River Road, Suite 720, Rosemont, IL 60018; 773-714-8880). A combination of fundamental laboratory techniques and clinical experience prepares graduates for work in laboratories serving the health care sector. The final semester of training is in laboratories in Madison and throughout Wisconsin. Students should anticipate the possibility of traveling or relocating to complete the clinical rotation. A list of laboratories used is available in the program director's office. Students are admitted for the fall semester.

Graduates of the program qualify for the American Society of Clinical Pathologists (ASCP) Board of Certification (BOC) exam for medical laboratory technicians. Passing this national exam results in MLT(ASCP) certification under the direction of the American Society of Clinical Pathologists. Graduation is not contingent on passing this exam.

Admission Requirements

To review program admission program requirements and application processing dates, visit the program's website at:
<http://madisoncollege.edu/program-info/medical-laboratory-technician>.

Program Requirements

1) Caregiver Background Check (CBC); 2) Current CPR "Professional Level" certification before beginning the first core courses. Students must maintain current CPR certification while attending the program; and 3) Physical exam and completed Health History Form on file prior to beginning the first semester clinical rotation.

Planning to pursue a four-year Clinical Laboratory Scientist degree?

Consider the following course substitutions: 20-806-207 and 20-806-208 (Anatomy and Physiology 1 and 2) for 20-806-206; 20-806-209 and 20-806-210 (College Chemistry 1 and 2) for 20-806-201. Both 20-806-208 and 20-806-210 can be used to meet elective requirements.

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

		Credits	Hrs/week Lec-Lab-Clin
First Semester			
10-513-110	Basic Lab Skills.....	1	0-2
10-513-111	Phlebotomy	2	0-4
10-513-113	QA Lab Math.....	1	0-2
10-513-114	Urinalysis	2	0-4
20-806-206	General Anatomy and Physiology*	4	3-2
20-806-201	General, Organic, & Biological Chemistry*	5	4-2
10-801-195	Written Communication* OR	3	3-0
20-801-201	English 1*.....	(3)	(3-0)
Semester Total		18	
Second Semester			
10-513-115	Basic Immunology Concepts.....	2	0-4
10-513-120	Basic Hematology.....	3	0-6
10-513-121	Coagulation.....	1	0-2
10-513-109	Blood Bank	4	2-4
10-801-198	Speech* OR	3	3-0
10-801-196	Oral/Interpersonal Communication* OR	(3)	(3-0)
20-810-201	Fundamentals of Speech*	(3)	(3)
20-806-273	Microbiology*	5	3-4
Semester Total		18	
Third Session (summer)			
10-809-197	Contemporary American Society* OR	3	3-0
20-809-203	Introduction to Sociology*	(3)	(3-0)
10-809-199	Psychology of Human Relations* OR	3	3-0
20-809-231	Introduction to Psychology*	(3)	(3-0)
Semester Total		6	
Fourth Semester			
10-513-130	Advanced Hematology	2	0-4
10-513-131	Clinical Chemistry 1	3	0-6
10-513-132	Clinical Chemistry 2	2	0-4
10-513-133	Clinical Microbiology.....	4	0-8
10-513-180	Body Fluids.....	1	0.5-1
	Elective	2	E
Semester Total		14	
Fifth Semester			
10-513-140	Advanced Microbiology	2	2-0
10-513-141	Preclinical Experience	2	0-0-6
10-513-151	Clinical Experience 1	3	0-6
10-513-152	Clinical Experience 2	4	0-8
10-513-153	Clinical Portfolio.....	1	0-2
Semester Totals		12	

Notes: *Courses which can be taken prior to entering the program may be taken at college transfer level. Science-based courses (such as 20-806-201, 20-806-273, 20-806-274 and 20-806-206) must have been taken within five years prior to program admission to receive credit. **Elective credits may be any combination of associate degree level or college transfer courses and may be taken prior to program admission. 1) A copy of the essential functions necessary to successfully complete the program of study is available on the program's web site. 2) All program students must meet the health requirements specified on the Madison College Health History Form prior to enrolling in program courses.



Program Courses

10-513-110 Basic Lab Skills 1 credit

Explores health career options and fundamental principles and procedures of the clinical laboratory. Incorporates medical terminology, basic laboratory equipment, safety and infection control procedures, and simple laboratory tests. Prerequisites: successful completion of the following high school courses with a grade of C or better: three years of English, one year of chemistry, one year of general biology, two years of algebra or one year algebra and one year of geometry; a satisfactory score on the COMPASS test or equivalent substitute, and acceptance into Medical Laboratory Technician program.

10-513-111 Phlebotomy 2 credits

Provides opportunities to perform routine venipuncture, capillary puncture, and special collection procedures. Co-requisite: 10-513-110.

10-513-113 QA Lab Math 1 credit

Focuses on mathematical calculations used in the laboratory. Explores concepts of quality control and quality assurance, regulatory compliance requirements, and certification and continuing education programs. Prerequisites: successful completion of the following high school courses with a grade of C or better: three years of English, one year of chemistry, one year of general biology, two years of algebra or one year algebra and one year of geometry; a satisfactory score on the COMPASS test or equivalent substitute and acceptance into Medical Laboratory Technician program. Co-requisites: 10-513-110 and 10-513-111.

10-513-114 Urinalysis 2 credits

Perform physical, chemical and microscopic analyses of urine. Explores renal physiology and correlates urinalysis results with clinical conditions. Co-requisites: 10-513-110, 10-513-111, and 10-513-113.

10-513-115 Basic Immunology Concepts 2 credits

Provides an overview of the immune system including testing methods for diagnosis of immune system disorders and viral and bacterial infections. Prerequisites: 10-513-110, 10-513-111, 10-513-113, and 10-513-114. Co-requisites: 10-513-120, 10-513-121, 10-513-122, 10-513-123, and 20-806-273.

10-513-120 Basic Hematology 3 credits

Covers theory and principles of blood cell production and function. Introduces basic practices and procedures in the hematology laboratory. Prerequisites: 10-513-110, 10-513-111, 10-513-113, and 10-513-114. Co-requisites: 10-513-115, 10-513-121, 10-513-122, 10-513-123, and 20-806-273.

10-513-121 Coagulation 1 credit

Introduces theory and principles of coagulation and explores mechanisms involved in coagulation disorders. Emphasis is placed on laboratory techniques used to diagnose disease and monitor treatment. Prerequisites: 10-513-110, 10-513-111, 10-513-113 and 10-513-114. Co-requisites: 10-513-115, 10-513-120, 10-513-122, 10-513-123 and 20-806-273.

10-513-109 Blood Bank 4 credits

Emphasis is focused on basic blood banking concepts and procedures including forward and reverse blood typing, screening for antibodies, antigen typing, selection of appropriate blood products and compatibility testing. Further work explores protocols to identify antibodies and workup adverse reactions to transfusions and hemolytic disease states. Prerequisites: 10-513-110, 10-513-111, 10-513-113 and 10-513-114. Co-requisites: 10-513-115, 10-513-120, and 20-806-273.

10-513-130 Advanced Hematology 2 credits

Explores mechanisms involved in the development of hematologic disorders. Emphasis is placed on laboratory techniques used to diagnose disorders and monitor treatment. Prerequisites: 10-513-115, 10-513-120, 10-513-121, 10-513-122, 10-513-123, and 20-806-273. Co-requisites: 10-513-131, 10-513-132, and 10-153-133.

10-513-131 Clinical Chemistry 1 3 credits

Introduces techniques and procedures for routine analysis using photometric, potentiometric and separation techniques. Covers pathophysiology and methodologies for carbohydrates, lipids, proteins, renal function, and blood gas analyses. Prerequisites: 10-513-115, 10-513-120, 10-513-121, 10-513-122, 10-513-123, and 20-806-273. Co-requisites: 10-513-130, 10-513-132, and 10-513-133.

10-513-132 Clinical Chemistry 2 2 credits

Covers pathophysiology and methodologies for liver, bone, cardiac markers, tumor markers, endocrine function, fetal function, miscellaneous body fluids, and toxicology. Includes techniques and procedures for analysis using sophisticated laboratory instrumentation. Prerequisites: 10-513-115, 10-513-120, 10-513-121, 10-513-122, 10-513-123, and 20-806-273. Co-requisites: 10-513-130, 10-513-131, and 10-513-133.

10-513-133 Clinical Microbiology 4 credits

Presents the clinical importance of infectious diseases with emphasis on the appropriate collection, handling, and identification of clinically relevant bacteria. Disease states, modes of transmission and methods of prevention and control, including antibiotic susceptibility testing, will be discussed. Prerequisites: 10-513-115, 10-513-120, 10-513-121, 10-513-122, 10-513-123, and 20-806-273. Co-requisites: 10-513-130, 10-513-131, and 10-513-132.

10-513-140 Advanced Microbiology 2 credits

Introduces laboratory methods used in the isolation and initial identification of acid-fast organisms, fungi, parasites and anaerobes. Prerequisite: 10-513-133.

10-513-141 Pre-Clinical Experience 2 credits

Provides opportunities to practice the principles and procedures of laboratory medicine in a clinical laboratory setting. Clinical content is reviewed and students run a mock-clinical laboratory from specimen acquisition to result reporting. Resume writing and interviewing techniques are also discussed. Prerequisites: satisfactory completion of 1st – 3rd semester Medical Laboratory Technician program courses and concurrent enrollment in 10-513-140 and 10-513-151.

10-513-151 Clinical Experience 1 3 credits

Provides opportunities to practice the principles and procedures of laboratory medicine on-site, in a clinical laboratory facility. Students will practice on state of the art instrumentation in the areas of clinical chemistry and hematology, including urinalysis and coagulation. Prerequisite: satisfactory completion of on campus pre-clinical experience, satisfactory completion of all courses and co-requisite of 10-513-141.

10-513-152 Clinical Experience 2 4 credits

Provides opportunities to practice the principles and procedures of laboratory medicine on-site, in a clinical laboratory facility. Students will practice in the areas of blood banking and microbiology, including serology and immunological procedures. Students also complete a case study for presentation. Prerequisite: satisfactory completion of all courses; Co-requisites: 10-513-141 and 10-513-151.

10-513-153 Clinical Portfolio 1 credits

Students prepare a portfolio of professional experiences, assessments and evaluations, clinical reports, class project summaries, a log of community service or professional activities performed while in the MLT program and resume for MLT employment. This course is graded pass/fail. Prerequisites: Satisfactory completion of all courses and Co-requisites: 10-513-151 and 10-513-152.

10-513-180 Body Fluids 1 credits

Covers principles and procedures related to laboratory analysis of body fluids, including serous fluids, cerebral spinal fluid, synovial fluid, and bronchoalveolar lavage (BAL) fluid. The major emphasis of the course is hematologic analysis, including cell counts and differentials. The completion of case studies allows the student to correlate laboratory results with disease states. Prerequisite: 10-513-120.

Career Potential:

- **Medical Laboratory Technician**
Performs routine laboratory tests on blood, urine, and body fluids to help in the diagnosis and treatment of disease and injury in a hospital, clinic laboratory, or reference laboratory.
- **Laboratory Technician/Research Assistant**
Performs routine and special laboratory tests in a variety of laboratory settings, including research, industrial, environmental and food science labs.

With additional training and/or work experience, graduates may find employment as:

- **Medical Technologist**
- **Medical Microbiologist**
- **Laboratory Computer Sales or Training Specialist**
- **Laboratory Sales/Product Representative**
- **Instrument Service Technician**
- **Quality Control Officer**
- **Biomedical Instrument Specialist**
- **Clinical Research Associate**
- **Safety Officer**
- **Laboratory Science Instructor/Trainer**

More detailed and updated information on this program may be available at: madisoncollege.edu. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

Madison Area Technical College provides equal opportunity in education and employment.

Meeting and Event Management

Program Number: 10-109-6

Associate in Applied Science Degree

Hospitality Program Cluster

School of Business and Applied Arts

Program offered at Madison Campuses and Online

For information call: (608) 246-6003 or
(800) 322-6282 Ext. 6003

About the Program

The Meeting and Event Management Degree program is designed to prepare students for highly responsible positions in the convention, conference and meeting planning industry. Develop negotiation, decision-making, problem-solving and communication skills. Learn about contract law, facilities, financial management and related areas of convention, conference and meeting management.

Major responsibilities of those employed in the meeting and event management industry include:

- On-site Management
- Marketing
- Client and Vendor Relations
- Contracts and Risk Management
- Program Development
- Budgeting
- Coordination of Logistics

Graduates may be employed by: professional associations, corporations, conference centers, hotels, resorts and special event venues.

This program is endorsed by Meeting Professionals International – Wisconsin Chapter, a community of the world's largest professional organization for meeting professionals.

Receive the most comprehensive meeting and event management education in the United States.

New! Entire Degree is offered Online and in the classroom.

Learn from the leaders in the meetings' industry that provides REAL information for REAL application in today's job market.

Admissions Requirements

To review admissions program requirements and application processing dates, visit the program's website at:

<http://madisoncollege.edu/program-info/meeting-and-event-management>.

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

		Credits	Hrs/week	
			Lec	Lab
First Semester				
10-103-133	Excel-Beginning.....	1	0.25	1.5
10-101-106	Accounting Fundamentals.....	3	3	0
10-109-102	Fundamentals of Meeting Management.....	3	3	0
10-109-111	Registration and Housing Logistics*.....	2	2	0
10-801-195	Written Communications.....	3	3	0
10-804-123	Math with Business Applications.....	3	3	0
Semester Total		15		
Second Semester				
10-104-114	Social Media Campaigns.....	3	3	0
10-109-104	Meeting Design*.....	3	3	0
10-109-108	Meetings Industry Budget and Financial Management*.....	2	2	0
10-109-110	Meeting Coordination.....	3	3	0
10-104-102	Marketing Principles.....	3	3	0
20-810-205	Interpersonal/Small Group Communication OR.....	3	3	0
10-801-196	Oral/Interpersonal Communication.....	(3)	(3)	0
Semester Total		17		
Third Semester				
10-109-109	Special Event Management*.....	3	3	0
10-109-112	Exposition Management*.....	2	2	0
10-109-116	Fundamentals of Green Meetings*.....	2	2	0
10-109-119	Event Professional Best Practices*.....	3	3	0
10-809-172	Intro to Diversity Studies.....	3	3	0
10-809-195	Economics.....	3	3	0
Semester Total		16		
Fourth Semester				
10-109-113	Risk Management, Negotiations and Legal Issues*.....	3	3	0
10-109-114	Meeting and Event Management Internship*.....	2	0	8
10-109-117	Partnership Development*.....	3	3	0
10-809-197	Contemporary American Society.....	3	3	0
10-809-199	Psych of Human Relations.....	3	3	0
	Elective.....	3		E
Semester Total		17		

*Courses offered only in semester shown.

Note: A grade of C or better is required for all Technical Studies courses in order to graduate from this program.

Program Courses

10-109-102 Fundamentals of Meeting Management 3 credits

Students explore the core issues of meeting planning from the fundamentals to the new trends shaping the meetings industry. Development of meeting timelines, checklists and request for proposal are introduced. Further focus includes the process meeting planners must use in site selections, the value of meeting objectives and format, and attendee expectations.

10-109-104 Meeting Design 3 credits

Designing meeting experiences that engage participants and deliver return on investment is critical for meeting professionals. Students explore adult learning styles and theories as well as develop tools and techniques to ensure the meetings success and a positive return on investment is delivered. This course takes an in-depth look at identifying the stakeholder objectives and learner outcomes, designing effective meetings and events, and measuring return on investment. Co-requisite: 10-109-102.

10-109-108 Meetings Industry Budget and Financial Management 2 credits

Establishing a realistic and sound budget is vital to creation of successful meetings. This course examines the steps in developing a meeting budget. Students learn techniques for projecting and managing budgets including per person methodology and break-even analysis. Emphasis is placed on situations oriented to the meeting industry. Co-requisites: 10-103-133 and 10-109-102.

10-109-109 Special Event Management 3 credits

Demonstrates professional practices used to create, market, plan and implement special events. Emphasis is on applying creativity to develop events with unique purposes and presentations combining elements such as site selection, décor, lighting, sound, and entertainment as well as food and beverage to reflect the theme of the event. Prerequisite: 10-109-102.

10-109-110 Meeting Coordination 3 credits

Provides a solid understanding of the numerous tasks and details involved in developing and coordinating a meeting and/or event. Students explore meeting room design, commonly used audio-visual equipment, the use of speakers, and how effective management of food and beverage impact successful meeting and event planning. Prerequisite: 10-109-102.

10-109-111 Registration and Housing Logistics 2 credits

Registration is the first impression that attendees have of your meeting. Careful planning in designing a registration process is critical to setting attendees expectations, perceptions and the tone of the meeting. Meeting participants want and need comfortable and convenient accommodations, to their exact requirements. Creating rooming lists, coordinating the housing logistics, and managing sleeping room blocks to reduce or eliminate attrition are critical success factors for the planner and the meeting. This course enables students to identify and develop tools that allow attendees a seamless meeting experience. Co-requisites: 10-103-133 and 10-109-102.

10-109-112 Exposition Management 3 credits

Provides the student with an understanding of the growing role of trade shows as a source of revenue for the sponsor as well as an opportunity for buyers and sellers to interact face-to-face in an educational environment. Building an exposition from the start of the planning process through the close of the show is presented. Students create a exhibitor prospectus; identify contractors necessary for producing the show; and learn how to effectively interact and communicate with exhibitors throughout the process. Post-show evaluations to measure results also are explored. Prerequisite: 10-109-102.

10-109-113 Risk Management, Negotiations and Legal Issues 3 credits

Includes crisis planning and risk management, the art and science of negotiations, and contract and legal issues in the meetings industry. Students learn how to identify issues that are negotiable, the steps in the negotiation process and commonly used negotiation techniques. The class also focuses on basic contract provisions and key clauses of a facility contract as well as the unique elements and differences of hotel and convention center contracts. Includes discussion of legal principles and precedents as they apply to the meetings industry. Prerequisites: 10-109-102.

10-109-114 Meeting and Event Management Internship 2 credits

Course provides both theoretical and hands-on experience planning, setting up and managing a meeting or event. Emphasis is on developing and implementing proper procedures to ensure professional results. The student is required to use their knowledge of finance, decision making, problem solving, organization and communication. Prerequisite: Third semester program student or consent of instructor.

10-109-116 Fundamentals of Green Meetings 2 credits

Provides solid foundation to execute a socially responsible and environmentally responsible meeting or event. Students will explore core strategies and principles of a green meeting as well as tools and resources available to plan a green meeting or event. Prerequisite: 10-109-102.

10-109-117 Partnership Development 3 credits

Students learn how to analyze a meeting to identify sponsorship and fundraising opportunities. These partnerships build support for a meeting, increase marketing effectiveness, and increase meeting profitability. Prerequisites: 10-109-102 and 10-109-108.

10-109-119 Event Professional Best Practices 3 credits

This course focuses on the core knowledge and skills that are crucial in the meetings and events industry. We will examine the factors involved with job success, including professional etiquette, ethics, communication and listening skills. Learn the foundation of customer service by implementing industry standards and expectations. Students will create a professional portfolio, as well as learn about proactive job search techniques, professional networking and interview skills. Prerequisite: 10-109-102. Third semester program student or consent of instructor.

Recommended Electives

10-102-170	Introduction to Sustainable Business	3 credits
10-103-139	Excel-Intermediate	1 credit
10-196-188	Project Management	3 credits
10-801-198	Speech (or)	3 credits
20-810-205	Small Group and Interpersonal Communication	3 credits

Career Potential:

- Conference Manager
- Marketing and Special Event Manager
- Convention Sales Manager
- Meetings Coordinator
- Director of Educational Programs
- Meetings Services Manager
- Project Manager of Meetings and Events
- Senior Event Coordinator
- Program Manager
- Special Event Coordinator
- Conference and Travel Service Manager
- Operations Manager

More detailed and updated information on this program may be available at: madisoncollege.edu. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

Madison Area Technical College provides equal opportunity in education and employment.

Rev. 04/15

Meeting & Event Management For the Administrative Professional

Program Number: 90-109-6

Certificate

Hospitality Program Cluster

School of Business and Applied Arts

Program offered at Madison Campuses and online

For information call:

(608) 246-6003 or (800) 322-6282 Ext. 6003

About the Certificate

This certificate is for the Administrative Professional whose job responsibilities include meeting and event management. The courses required for this certificate are ideal for individuals who need to broaden their knowledge of meeting and event planning and coordination. This certificate is available to those individuals who are currently working as an Administrative Professional or have been employed in a similar position for at least two years. A resume and/or letter of reference verifying administrative work experience is required to qualify for this certificate program.

Admissions Requirements

To review admissions program requirements and application processing dates visit the programs website at: <http://madisoncollege.edu/program-info/meeting-event-management-administrative-professional>.

Requirements for Completion

The certificate will be awarded upon completion of the requirements with a minimum of a 2.0 grade average and no course grade lower than a C. The certificate will be awarded when completion of all requirements is verified after the semester the last course has been completed.

Courses

10-103-133 Excel-Beginning 1 credit
Introduction to Excel spreadsheet software. Create, edit, save, format, print, perform calculations, copy/move text and formulas, create charts, create complex formulas and expand use of functions. Prerequisite: competency in Windows Operating System.

10-109-102 Fundamentals of Meeting Management 3 credits
Students explore the core issues of meeting planning from the fundamentals to the new trends shaping the meetings industry. Development of meeting timelines, checklists and request for proposal are introduced. Further focus includes the process meeting planners must use in site selections, the value of meeting objectives and format, and attendee expectations.

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

Courses	Credits	Hrs/week	
		Lec	Lab
10-103-133 Excel-Beginning.....	1	0.25	1.5
10-109-102 Fundamentals of Meeting Management.....	3	3	0
10-109-108 Meetings Industry Budget and Finance**.....	2	2	0
10-109-110 Meeting Coordination	3	3	0
10-109-111 Registration and Housing Logistics*	2	2	0

*Fall only
**Spring only

10-109-108 Meetings Industry Budget and Financial Management 2 credits

Establishing a realistic and sound budget is vital to creation of successful meetings. This course examines the steps in developing a meeting budget. Students learn techniques for projecting and managing budgets including per person methodology and break-even analysis. Emphasis is placed on situations oriented to the meeting industry. Prerequisites: 10-103-133, 10-109-102.

10-109-110 Meeting Coordination 3 credits

Provides a solid understanding of the numerous tasks and details involved in developing and coordinating a meeting and/or event. Students explore meeting room design, commonly used audio-visual equipment, the use of speakers, and how effective management of food and beverage impact successful meeting and event planning. Prerequisite: 10-109-102.

10-109-111 Registration and Housing Logistics 2 credits

Registration is the first impression that attendees have of your meeting. Careful planning in designing a registration process is critical to setting attendees expectations, perceptions and the tone of the meeting. Meeting participants want and need comfortable and convenient accommodations, to their exact requirements. Creating rooming lists, coordinating the housing logistics, and managing sleeping room blocks to reduce or eliminate attrition are critical success factors for the planner and the meeting. This course enables students to identify and develop tools that allow attendees a seamless meeting experience. Co-requisites: 10-103-133 and 10-109-102.

Career Potential:

- Administrative Professional
- Conference Assistant
- Event Planning Assistant
- Special Event Assistant
- Meeting Assistant

More detailed and updated information on this program may be available at: madisoncollege.edu. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

Madison Area Technical College provides equal opportunity in education and employment.



Metal Fabrication

Program Number: 31-457-2

One-Year Technical Diploma

Manufacturing Program Cluster

School of Applied Science, Engineering, and Technology

Program offered at Fort Atkinson Campus
(Future offering at Truax)

For information call:
(608) 246-6800 or (800) 322-6282 Ext. 6800

About the Program

The Fabrication Specialist Program will introduce students to the cutting, forming and joining of common manufacturing materials. Students will utilize a variety of manual and programmable equipment, techniques and processes. Hands-on training will promote mastery of fundamental concepts to include; safety, measurement, layout, forming, joining, assembly, finishing and production. Students will develop their technical knowledge of blueprint reading, layout metal fabrication, and welding by producing fabricated assemblies to detailed drawings conforming to industry quality control methods and standards.

Admissions Requirements

To review admissions program requirements and application processing dates visit the programs website at: <http://madisoncollege.edu/program-info/metal-fabrication>.

Requirements for Graduation

Students must meet two 2.0 GPA requirements to graduate: 1) GPA for entire program must be 2.0 or above; 2) GPA of combined occupational courses (442/457/623) must be 2.0 or above.

Welding Completion Option

Students who have graduated from the Metal Fabrication program, may take an additional semester of courses to obtain an additional degree of the Welding technical diploma.

To review admissions program requirements and application processing dates visit the programs website at: <http://madisoncollege.edu/program-info/welding>.

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

		Hrs/week	
		Credits	Lec-Lab
First Semester			
10-623-100	Safety for Industry.....	1	1-0
10-623-200	Interpreting Engineering Drawings.....	2	0-4
31-442-318	Gas Tungsten Arc Welding 1(GTAW/TIG).....	2	0-4
31-442-323	Basic Gas Metal Arc Welding (GMAW/MIG).....	2	2-2
31-442-332	Oxy Fuel Cutting 1.....	1	1-1
31-457-301	Fabrication 1.....	2	1-3
31-457-302	Fabrication 2.....	2	1-3
31-457-305	CNC Operation.....	2	1-3
32-420-349	Basic Metrology Part A.....	1	2-0
31-804-379	Vocational Mathematics 1.....	1	2-0
Semester Total		16	
Second Semester			
31-442-326	Flux Cored & Advanced Gas Metal Arc Welding (FCAW/GMAW).....	2	1-3
31-442-328	Gas Tungsten Arc Welding 2 (GTAW/TIG).....	2	1-3
31-442-390	Fundamentals of Metallurgy.....	2	4-0
31-457-303	Fabrication 3.....	2	1-3
31-457-304	Fabrication 4.....	2	1-3
31-457-306	CNC Programming.....	2	1-3
31-457-307	Jig and Fixture Development.....	2	1-3
32-801-350	Workplace Communication for Industry.....	1	1-0
Semester Total		15	

Notes:

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- Certain associate degree or higher post-secondary courses specific to the curriculum

Note: Students are placed in English or mathematics courses based on their scores on the COMPASS or ASSET test or on completion of the appropriate prerequisite/s.



Program Courses

10-623-100 Safety for Industry 1 credit
Comprehensive safety program designed for anyone involved in general industry. Specifically devised for safety directors, foremen, and field supervisors; the program provides complete information on OSHA compliance issues.

10-623-200 Interpreting Engineering Drawings 2 credits
Basic principles of engineering drawings and manufacturing procedures. Through interpretation and sketching, students learn to visualize the part, section or assembly. Uses drawings pertinent to the trades with examples in Welding, Facilities, Piping and Instrumentation (P & ID's), Sheet Metal, Equipment Manuals (technical documents, installation/repair manuals), Electrical Symbols, and Fluid Power Symbols.

31-420-349 Basic Metrology Part A 1 credit
This course introduces the principles of basic dimensional measurement, layout techniques for machines, use of direct and indirect measuring tools as well as the use of length standards relative to calibration of measuring instruments and the basic operation of the Coordinate Measuring Machine.

31-442-318 Gas Tungsten Arc Welding 1 (GTAW/TIG) 2 credits
Emphasis is placed on gas tungsten arc welding (TIG) techniques of stainless steel. Development of skills and techniques on all types of joints in flat and horizontal positions. Aluminum and steel techniques may also be covered.

31-442-323 Basic Gas Metal Arc Welding (GMAW/MIG) 2 credits
Students develop manipulative skills on all types of joints in the flat, horizontal and vertical up and down position using short circuiting transfer. Students will perform gas metal arc welding techniques using 1/8" to 1/2" structural fabricated parts, as per AWS code standards. Emphasis is placed on operating gas metal arc welding equipment in a safe manner and determining machine set-up for metal thickness, wire size and speed.

31-442-326 Flux Cored & Advanced Gas Metal Arc Welding (FCAW/GMAW) 2 credits
Continuation of development of skills and techniques on all types of joints in the flat, horizontal and vertical up and down positions, using short circuiting and spray arc transfer. Students will also learn flux-cored gas shielding and self-shielding welding techniques. Mild steel, stainless steel and aluminum (1/16" to 1" thickness) are the metals used in welding joint assemblies, as per AWS code standards. Prerequisite: 31-442-323.

31-442-328 Gas Tungsten Arc Welding 2 (GTAW/TIG) 2 credits
Students develop manipulative skills on all types of joints in the flat, horizontal, vertical, overhead and pipe positions. Gas tungsten arc welding of stainless, aluminum, and steel welding techniques will be covered using 1/8" to 1/32" (11 ga to 20 ga) structural fabricated parts, pipe, repair welding and for other related trades, as per AWS and ASME welding code standards. Prerequisite: 31-442-318.

31-442-332 Oxy Fuel Cutting 1 1 credit
The Oxy-Fuel Cutting 1 course will introduce the students to manual cutting using a handheld torch. The students will also be introduced to the plasma cutting process. Oxy-fuel and plasma cutting safety with proper handling of cylinders is covered.

31-442-390 Fundamentals of Metallurgy 2 credits
Introduction to metallurgy with emphasis on applications, selection, identification methods and alloy influences. Properties are studied utilizing testing, micro-structure interpretation and heat treatment processes. Tool steels, weld heat effects, failure analysis as well as machinability variations in cast iron, alloy steels and non-ferrous materials are covered in detail.

31-457-301 Fabrication 1 2 credits
In Fabrication 1 students will be introduced to the fundamentals of metal cutting and forming. Students will create assemblies from industrial drawings conforming to industry standards. Emphasis will be placed on the safety, basic layout techniques, bending calculations, and operation of manual and mechanical cutting/forming equipment.

31-457-302 Fabrication 2 2 credits
In Fabrication 2 students will translate the competencies established in Fabrication 1 to programmable forming equipment. Students will create assemblies from industrial drawings conforming to industry standards. Emphasis will be placed on safe operation procedures, the selection of tooling, and calculations required to properly operate programmable forming equipment. Prerequisite: 31-457-301.

31-457-303 Fabrication 3 2 credits
Fabrication 3 builds upon the competencies established in the prior Fabrication courses. Students will create assemblies from industrial drawings conforming to industry standards. Emphasis will expand upon operational safety, tooling types and selection, multiple types and combinations of bending, as well as assembly techniques. Prerequisite: 31-457-302.

31-457-304 Fabrication 4 2 credits
The Fabrication Capstone course utilizes all the program competencies learned and combines them into final projects. Students will choose from established projects and create material lists, operational procedures, fabricate components, assemble, join, and finish. All assemblies must be inspected per industry standards. Prerequisite: 31-457-303.

31-457-305 CNC Operation 2 credits
The CNC operation course will develop student's ability to operate Computerized Numerical Control cutting equipment. Students will be trained in safety, program selection, operational procedures, editing and the basic maintenance of the equipment. Students will be introduced to programming methods applicable to each OEM manufacturer.

31-457-306 CNC Programming 2 credits
The CNC programming class students will develop ability to generate component programs utilizing computer software. Students will generate shape geometry, create parts, develop nests and cut parts. Prerequisite: 31-457-305

31-457-307 Jig and Fixture Development 2 credits
Students will develop the concepts of design and building simple to intermediate jigs and assembly fixtures. Students will use computer software and metal fabrication equipment to build jig and fixtures for projects used in the class.

Career Potential:

- GMAW & GTAW Welder
- Press Brake Operator
- CNC Operator
- CNC Programmer
- Fabricator Fitter

With additional education and/or work experience, graduates may find employment as:

- Maintenance Welder
- Qualified Welder
- Structural Welder
- Welder/Fabricator

More detailed and updated information on this program may be available at: madisoncollege.edu. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

Madison Area Technical College provides equal opportunity in education and employment.

Rev. 07/15

Microsoft® Office Certificate -Core

Program Number: 90-103-1

Certificates

Business Technology Program Cluster

School of Business and Applied Arts

Certificate courses are offered at Madison; most courses are also offered at the Fort Atkinson, Reedsburg, Watertown and Portage campuses and online; some of them are also available in a bilingual format

For information call: (608) 246-6003 or
(800) 322-6282 Ext. 6003

About the Certificates

Madison College has developed two certificates in Microsoft® Office products that can help you get hired, get promoted, or update your skills. These computer skills are essential for work in today's modern offices. Both certificates are available either online or in the classroom.

Students who successfully complete this certificate typically earn \$12.00 to \$15.00 per hour based on their experience and other job skills.

Admission Requirements

To review program admission requirements and application processing dates, visit the program's website at:

<http://madisoncollege.edu/program-info/microsoft-office-certificate-core>.

Requirements for Completion

The certificate will be awarded upon completion of the requirements with a minimum of a 2.0 grade average and no course grade lower than a C. The certificate will be awarded when completion of all requirements is verified after the semester the last course has been completed.

Preparation for MOS Certification

Microsoft® Office Specialist is internationally recognized program that verifies knowledge, skills, and abilities needed to effectively use Microsoft® Office products. Completing the Microsoft® Office Certificates at Madison College prepares you to become MOS certified. For more information including where to take the certification exams, visit <http://certipoint.com/mos>.

Note: All Microsoft Office courses use the 2013 version.

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

Microsoft® Office Certificate-Core		Credits	Hrs/week Lec-Lab
10-103-122	Windows 8 OR	1.....	0.25-1.5
10-103-123	Windows 7	(1).....	0.25-1.5
10-103-165	Outlook.....	1.....	0.25-1.5
10-103-137	Word-Beginning OR	1.....	0.25-1.5
10-106-107	Business Document Applications.....	(3).....	1-4
10-103-133	Excel-Beginning OR	1.....	0.25-1.5
10-106-109	Business Spreadsheet Applications.....	(3).....	1-4
10-103-145	Access-Beginning OR	1.....	0.25-1.5
10-106-240	Business Information Management.....	(3).....	1-4
10-103-143	PowerPoint-Beginning OR	1.....	0.25-1.5
10-106-231	Business Presentations and Publications.....	(3).....	1-4
Total		6	

Microsoft

(Choose six courses from those listed below.)

10-103-125	Access-Intermediate.....	1.....	0.25-1.5
10-103-126	Word-Advanced*.....	1.....	0.25-1.5
10-103-127	Access-Advanced.....	1.....	0.25-1.5
10-103-132	Excel-Advanced**.....	1.....	0.25-1.5
10-103-136	Word-Intermediate*.....	1.....	0.25-1.5
10-103-139	Excel-Intermediate**.....	1.....	0.25-1.5
10-103-140	Publisher***.....	1.....	0.25-1.5
10-103-128	PowerPoint-Intermediate***.....	1.....	0.25-1.5

*10-106-107 Business Document Applications.....(3)..... 1-4
May be taken in lieu of Word-Intermediate and Word-Advanced

**10-106-109 Business Spreadsheet Applications.....(3)..... 1-4
May be taken in lieu of Excel-Intermediate and Excel-Advanced

***10-106-231 Business Presentations and Publications.....(3)..... 1-4
May be taken in lieu of Publisher and PowerPoint-Advanced

Microsoft® is a registered trademark of the Microsoft Corporation.



Microsoft® Office Certificate-Core

10-103-123 Windows 7 1 credit
Introduces the Windows 7 operating system: work with common elements (windows, menus, toolbars, panes, dialog boxes and Help), use accessory programs, manage files/folders, customize using the Control Panel and maintain the computer.

10-103-133 Excel-Beginning 1 credit
Introduction to Excel spreadsheet software. Create, edit, save, format, print, perform calculations, copy/move text and formulas, create charts, create complex formulas and expand use of functions. Prerequisite: competency in Windows operating system.

10-103-137 Word-Beginning 1 credit
Introduction to Microsoft's word processing software. Create, edit, save, format and print basic documents; cut/copy/paste and find/replace text; apply font styles and effects; add bullets and numbering; work with tabs and indents; align text; apply borders and shading; use wizards and templates to produce documents; insert headers/footers; apply different formatting to document sections; create columns; insert Clip Art. Create and format tables, modify rows and columns, perform calculations, sort table data, customize tables. Prerequisite: competency in Windows operating system.

10-103-143 PowerPoint-Beginning 1 credit
Introduction to PowerPoint presentation software. Create, edit, save, and print a presentation. Insert clip art, apply animation and slide transition effects, import text, customize background and bullets, create a table and a chart, create a WordArt object, and create a Webpage from a PowerPoint slide. Prerequisite: competency in Windows operating system AND experience using word processing software.

10-103-145 Access-Beginning 1 credit
Introduction to Access database software. Plan, create, edit, save, print and manage data; modify a database structure; relate tables; find, filter, query and sort data in tables; create forms and reports. Prerequisite: competency in Windows operating system.

10-103-165 Outlook 1 credit
Use Microsoft's messaging and personal information management program. Communicate by email; schedule appointments, meetings and events; manage the Inbox, contact lists, tasks and notes; track and archive messages; configure and customize Outlook; record journal entries; manage Outlook components; integrate Outlook with other Office programs. Prerequisite: competency in Windows operating system.

More detailed and updated information on this program may be available at: madisoncollege.edu. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

Madison Area Technical College provides equal opportunity in education and employment.

Microsoft® Office Certificate-Expert

10-103-125 Access-Intermediate 1 credit
Share data among applications; create reports, forms and combo boxes; enhance forms with OLE fields, hyperlinks, and subforms; work with switchboards, PivotTables, and PivotCharts. Prerequisite: 10-103-145 or equivalent.

10-103-126 Word-Advanced 1 credit
Integrate Word with other Office programs; explore advanced graphics; construct, format and protect forms; work with charts and diagrams; develop documents in collaboration with others (add comments, track changes and compare and protect documents); apply advanced find/replace options; create macros; customize Word menus and toolbars. Prerequisite: 10-103-136 or equivalent.

10-103-127 Access-Advanced 1 credit
Apply advanced report and form techniques; use SQL and create multi-page forms; administer a database system; review database design principles. Prerequisite: 10-103-125 or equivalent.

10-103-128 PowerPoint-Intermediate 1 credit
Create tables and charts; add action buttons and hyperlinks; insert movie and sound clips; modify graphics; add custom animation to graphics, charts and graphs; create self-running presentations; narrate a presentation. Use your creative side to make your own design template. Design a PowerPoint game. Prerequisite: 10-103-143 or equivalent.

10-103-132 Excel-Advanced 1 credit
Perform what-if analysis with Scenario Manager, data tables, Goal Seek and Solver; summarize data with PivotTables; exchange data with other programs including Access, Word and PowerPoint; audit and outline worksheets; program using Visual Basic for Applications. Prerequisite: 10-103-139 or equivalent.

10-103-136 Word-Intermediate 1 credit
Illustrate documents with graphics; create and format Webpages; add hyperlinks; merge Word documents; sort and filter records; work with Styles and Templates; use Outline view to develop multipage documents, adding footnotes/endnotes, a Table of Contents, cross-references, sections, and an Index. Prerequisite: 10-103-137 or equivalent.

10-103-139 Excel-Intermediate 1 credit
Work with financial functions, data tables, amortization schedules, hyperlinks, lists, templates, and multiple worksheets and workbooks. Prerequisite: 10-103-133 or equivalent.

10-103-140 Publisher 1 credit
An introduction to desktop publishing using Microsoft Publisher. Create, enhance and format publications; work with graphics objects; group and layer objects; insert tables; add special effects; use Publisher templates to design professional documents; draw and use shapes; produce multipage publications; and create an original Publisher publication. Prerequisite: competency in Windows operating system AND experience using word processing software.

Career Potential:

- **Administrative Professional**
- **Word Processing Specialist**
- **Secretarial Assistant**
- **Administrative Services Coordinator**
- **Program Assistant**
- **Clerical Assistant**
- **Office Assistant**
- **Document Specialist**
- **Administrative Clerk**
- **Customer Service Representative**
- **Office Support Assistant**
- **Office Administrator**
- **PC Specialist**
- **Data Entry Operator**
- **Information Assistant**
- **Executive Assistant**

Alternate Courses

10-106-107 Business Document Applications 3 credits
Emphasis is placed on learning to use word processing software to efficiently and effectively produce business documents. Students will apply skills to solve practical problems in a project-based format. Explore fundamentals and best practices in document creation, editing, formatting, collaboration, tables, mail merge, desktop publishing, themes, templates, forms, and macros. Recommended prerequisite: competency in Windows operating system, including solid file management skills.

10-106-109 Business Spreadsheet Applications 3 credits
Create professional data-driven spreadsheets utilizing Excel spreadsheet software and information from a variety of data sources. Create charts and complex formulas; utilize advanced functions and apply conditional formatting; develop an Excel application with data validation, sheet protection, and macros. Work with financial tools and functions; perform what-if analysis with Scenario Manager, Data Tables, Goal Seek and Solver. Recommended prerequisite: competency in Windows operating system, including solid file management skills.

10-106-231 Business Presentations And Publications 3 credits
Create professional business presentations using PowerPoint and other presentation software. Explore best practices for designing and presenting. Work with graphics, slide master, sound, video, charts and tables. Add transitions, narration and animation to enhance your presentations. Explore desktop publishing using Publisher and other desktop publishing software. Apply basic design principles while creating flyers, newsletters, and brochures. Recommended prerequisite: competency in Windows operating system, including solid file management skills.

10-106-240 Business Information Management 3 credits
Concentrates on the fundamentals of managing the record life cycle; supplies and equipment; charge-out procedures; retention schedules; transfer methods; control measurements; imaging systems and information security. Incorporates database skills including how to plan, create, and manage data; modify a database structure; relate tables; find, filter, query and sort data; and create forms and reports. Recommended prerequisite: competency in Windows operating system, including solid file management skills.

Microsoft® Office Certificate -Expert

Program Number: 90-103-5

Certificates

Business Technology Program Cluster

School of Business and Applied Arts

Certificate courses are offered at Madison; most courses are also offered at the Fort Atkinson, Reedsburg, Watertown and Portage campuses and online; some of them are also available in a bilingual format

For information call:
(608) 246-6003 or (800) 322-6282 Ext. 6003

About the Certificates

Madison College has developed two certificates in Microsoft® Office products that can help you get hired, get promoted, or update your skills. These computer skills are essential for work in today's modern offices. Both certificates are available either online or in the classroom.

Students who successfully complete this certificate typically earn \$12.00 to \$15.00 per hour based on their experience and other job skills.

Admission Requirements

To review program admission requirements and application processing dates, visit the program's website at:

<http://madisoncollege.edu/program-info/microsoft-office-certificate-expert>.

Requirements for Completion

The certificate will be awarded upon completion of the requirements with a minimum of a 2.0 grade average and no course grade lower than a C. The certificate will be awarded when completion of all requirements is verified after the semester the last course has been completed.

Preparation for MOS Certification

Microsoft® Office Specialist is internationally recognized program that verifies knowledge, skills, and abilities needed to effectively use Microsoft® Office products. Completing the Microsoft® Office Certificates at Madison College prepares you to become MOS certified. For more information including where to take the certification exams, visit <http://certipoint.com/mos>.

Note: All Microsoft Office courses use the 2013 version.

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

Microsoft® Office Certificate-Core		Credits	Hrs/week Lec-Lab
10-103-122	Windows 8 OR	1.....	0.25-1.5
10-103-123	Windows 7	(1).....	0.25-1.5
10-103-165	Outlook.....	1.....	0.25-1.5
10-103-137	Word–Beginning OR	1.....	0.25-1.5
10-106-107	Business Document Applications.....	(3).....	1-4
10-103-133	Excel–Beginning OR	1.....	0.25-1.5
10-106-109	Business Spreadsheet Applications.....	(3).....	1-4
10-103-145	Access–Beginning OR	1.....	0.25-1.5
10-106-240	Business Information Management.....	(3).....	1-4
10-103-143	PowerPoint–Beginning OR	1.....	0.25-1.5
10-106-231	Business Presentations and Publications.....	(3).....	1-4
Total		6	

Microsoft

(Choose six courses from those listed below.)

10-103-125	Access–Intermediate.....	1.....	0.25-1.5
10-103-126	Word–Advanced*.....	1.....	0.25-1.5
10-103-127	Access–Advanced.....	1.....	0.25-1.5
10-103-132	Excel–Advanced**.....	1.....	0.25-1.5
10-103-136	Word–Intermediate*.....	1.....	0.25-1.5
10-103-139	Excel–Intermediate**.....	1.....	0.25-1.5
10-103-140	Publisher***.....	1.....	0.25-1.5
10-103-153	PowerPoint–Intermediate***.....	1.....	0.25-1.5

*10-106-107 Business Document Applications.....(3)..... 1-4
May be taken in lieu of Word–Intermediate and Word–Advanced

**10-106-109 Business Spreadsheet Applications.....(3)..... 1-4
May be taken in lieu of Excel–Intermediate and Excel–Advanced

***10-106-231 Business Presentations and Publications.....(3)..... 1-4
May be taken in lieu of Publisher and PowerPoint–Advanced

Microsoft® is a registered trademark of the Microsoft Corporation.



Microsoft® Office Certificate-Core

10-103-123 Windows 7 1 credit
 Introduces the Windows 7 operating system: work with common elements (windows, menus, toolbars, panes, dialog boxes and Help), use accessory programs, manage files/folders, customize using the Control Panel and maintain the computer.

10-103-133 Excel-Beginning 1 credit
 Introduction to Excel spreadsheet software. Create, edit, save, format, print, perform calculations, copy/move text and formulas, create charts, create complex formulas and expand use of functions. Prerequisite: competency in Windows operating system.

10-103-137 Word-Beginning 1 credit
 Introduction to Microsoft's word processing software. Create, edit, save, format and print basic documents; cut/copy/paste and find/replace text; apply font styles and effects; add bullets and numbering; work with tabs and indents; align text; apply borders and shading; use wizards and templates to produce documents; insert headers/footers; apply different formatting to document sections; create columns; insert Clip Art. Create and format tables, modify rows and columns, perform calculations, sort table data, customize tables. Prerequisite: competency in Windows operating system.

10-103-143 PowerPoint-Beginning 1 credit
 Introduction to PowerPoint presentation software. Create, edit, save, and print a presentation. Insert clip art, apply animation and slide transition effects, import text, customize background and bullets, create a table and a chart, create a WordArt object, and create a Webpage from a PowerPoint slide. Prerequisite: competency in Windows operating system AND experience using word processing software.

10-103-145 Access-Beginning 1 credit
 Introduction to Access database software. Plan, create, edit, save, print and manage data; modify a database structure; relate tables; find, filter, query and sort data in tables; create forms and reports. Prerequisite: competency in Windows operating system.

10-103-165 Outlook 1 credit
 Use Microsoft's messaging and personal information management program. Communicate by email; schedule appointments, meetings and events; manage the Inbox, contact lists, tasks and notes; track and archive messages; configure and customize Outlook; record journal entries; manage Outlook components; integrate Outlook with other Office programs. Prerequisite: competency in Windows operating system.

More detailed and updated information on this program may be available at: madisoncollege.edu. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

Madison Area Technical College provides equal opportunity in education and employment.

Microsoft® Office Certificate-Expert

10-103-125 Access-Intermediate 1 credit
 Share data among applications; create reports, forms and combo boxes; enhance forms with OLE fields, hyperlinks, and subforms; work with switchboards, PivotTables, and PivotCharts. Prerequisite: 10-103-145 or equivalent.

10-103-126 Word-Advanced 1 credit
 Integrate Word with other Office programs; explore advanced graphics; construct, format and protect forms; work with charts and diagrams; develop documents in collaboration with others (add comments, track changes and compare and protect documents); apply advanced find/replace options; create macros; customize Word menus and toolbars. Prerequisite: 10-103-136 or equivalent.

10-103-127 Access-Advanced 1 credit
 Apply advanced report and form techniques; use SQL and create multi-page forms; administer a database system; review database design principles. Prerequisite: 10-103-125 or equivalent.

10-103-128 PowerPoint-Intermediate 1 credit
 Create tables and charts; add action buttons and hyperlinks; insert movie and sound clips; modify graphics; add custom animation to graphics, charts and graphs; create self-running presentations; narrate a presentation. Use your creative side to make your own design template. Design a PowerPoint game. Prerequisite: 10-103-143 or equivalent.

10-103-132 Excel-Advanced 1 credit
 Perform what-if analysis with Scenario Manager, data tables, Goal Seek and Solver; summarize data with PivotTables; exchange data with other programs including Access, Word and PowerPoint; audit and outline worksheets; program using Visual Basic for Applications. Prerequisite: 10-103-139 or equivalent.

10-103-136 Word-Intermediate 1 credit
 Illustrate documents with graphics; create and format Webpages; add hyperlinks; merge Word documents; sort and filter records; work with Styles and Templates; use Outline view to develop multipage documents, adding footnotes/endnotes, a Table of Contents, cross-references, sections, and an Index. Prerequisite: 10-103-137 or equivalent.

10-103-139 Excel-Intermediate 1 credit
 Work with financial functions, data tables, amortization schedules, hyperlinks, lists, templates, and multiple worksheets and workbooks. Prerequisite: 10-103-133 or equivalent.

10-103-140 Publisher 1 credit
 An introduction to desktop publishing using Microsoft Publisher. Create, enhance and format publications; work with graphics objects; group and layer objects; insert tables; add special effects; use Publisher templates to design professional documents; draw and use shapes; produce multipage publications; and create an original Publisher publication. Prerequisite: competency in Windows operating system AND experience using word processing software.

Career Potential:

- **Administrative Professional**
- **Word Processing Specialist**
- **Secretarial Assistant**
- **Administrative Services Coordinator**
- **Program Assistant**
- **Clerical Assistant**
- **Office Assistant**
- **Document Specialist**
- **Administrative Clerk**
- **Customer Service Representative**
- **Office Support Assistant**
- **Office Administrator**
- **PC Specialist**
- **Data Entry Operator**
- **Information Assistant**
- **Executive Assistant**

Alternate Courses

10-106-107 Business Document Applications 3 credits
 Emphasis is placed on learning to use word processing software to efficiently and effectively produce business documents. Students will apply skills to solve practical problems in a project-based format. Explore fundamentals and best practices in document creation, editing, formatting, collaboration, tables, mail merge, desktop publishing, themes, templates, forms, and macros. Recommended prerequisite: competency in Windows operating system, including solid file management skills.

10-106-109 Business Spreadsheet Applications 3 credits
 Create professional data-driven spreadsheets utilizing Excel spreadsheet software and information from a variety of data sources. Create charts and complex formulas; utilize advanced functions and apply conditional formatting; develop an Excel application with data validation, sheet protection, and macros. Work with financial tools and functions; perform what-if analysis with Scenario Manager, Data Tables, Goal Seek and Solver. Recommended prerequisite: competency in Windows operating system, including solid file management skills.

10-106-231 Business Presentations And Publications 3 credits
 Create professional business presentations using PowerPoint and other presentation software. Explore best practices for designing and presenting. Work with graphics, slide master, sound, video, charts and tables. Add transitions, narration and animation to enhance your presentations. Explore desktop publishing using Publisher and other desktop publishing software. Apply basic design principles while creating flyers, newsletters, and brochures. Recommended prerequisite: competency in Windows operating system, including solid file management skills.

10-106-240 Business Information Management 3 credits
 Concentrates on the fundamentals of managing the record life cycle; supplies and equipment; charge-out procedures; retention schedules; transfer methods; control measurements; imaging systems and information security. Incorporates database skills including how to plan, create, and manage data; modify a database structure; relate tables; find, filter, query and sort data; and create forms and reports. Recommended prerequisite: competency in Windows operating system, including solid file management skills.

Mobile Marketing (Social Media)

Program Number: 90-104-5

Certificate

School of Business and Applied Arts

Program offered at Madison campuses.

For information call:

(608) 246-6003 or (800) 322-6282 Ext. 6003

About the Certificate

This certificate is intended for professionals in marketing, web design and development, graphic design, visual communications/media design, customer service, and others who want to implement mobile marketing more effectively.

There are no prerequisite courses for this certificate. Students are required to have basic computer skills.

Admissions Requirements

To review admissions program requirements and application processing dates, visit the program's website at:

<http://madisoncollege.edu/program-info/mobile-marketing>.

Requirements for Completion

The certificate will be awarded upon completion of the requirements with a minimum of a 2.0 grade average and no course grade lower than a C. The certificate will be awarded when completion of all requirements is verified after the semester the last course has been completed.

Career Potential

- Mobile Marketing Specialist/Planner/Coordinator
- Advertising
- Communications/Public Relations
- Marketing
- Mobile/Interactive/Graphic Design
- Media Copywriter/Editor
- Social Networking Media Specialist
- Media Strategist/Planner

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

Three Required Courses		Credits	Hrs/week Lec-Lab
10-104-162	Social Media-Mobile Marketing.....	3	3-0
10-104-169	Internet Marketing	3	3-0
10-104-177	Introduction to Mobile Applications	3	3-0
10-201-198	Social Media/Web Design Strategies	3	3-0
Total		12	

Certificate Courses

10-104-162 Social Media – Mobile Marketing 3 credits

Mobile internet usage continues to explode and it has been predicted that it will overtake desktop internet usage in the next five years. Successful businesses need to understand the current mobile landscape and how to harness the power of mobile marketing to reach key target markets. This survey course will examine how mobile marketing fits into your overall digital and social media strategy. We will investigate geo-marketing, localized marketing, designing for mobile media, mobile websites, mobile advertising, m-commerce and mobile spending, SMS, and mobile apps. Students will develop a creative mobile marketing campaign that integrates with a traditional marketing plan.

10-104-169 Internet Marketing 3 credits

This course provides a road map for marketers to navigate the digital economy. Critical skills include the ability to master proven Internet marketing principles and concepts, and the capacity to keep pace with technological advances and industry trends. This course focuses on a comprehension of Internet marketing theory and concepts; demonstrates how concepts are applied in the real world; and emphasizes the development of advanced Internet marketing skills. Prerequisites: Marketing Principles, 10-104-102.

10-104-177 Introduction to Mobile Applications 3 credits

The use of Application Programs, or Apps, has become common for smart-phone and tablet computer users. Businesses are now designing and running apps with as much importance (or even more) as their websites. This class will look into the different types of apps (including retail, geo-marketing, geo-fencing, human interaction, gaming, social networking, etc.) and how they each can be used as a business tool.

10-201-198 Social Media/Web Design Strategies 3 credits

Projects in this course will include online research, case studies and class exercises. This course will give student skills to make good Web design decisions by researching and understanding website architecture, usability, search engine optimization, keywords, link building, web site indexing and web site analysis. Students will analyze websites and develop search engine optimization proposals for real clients and develop an html based email campaign. Students will



Motorcycle, Marine and Outdoor Power Products Technician

Program Number: 31-461-2

One-Year Technical Diploma

Transportation Program Cluster

School of Applied Science, Engineering, and Technology

Program offered at Madison Campuses

For information call:
(608) 246-6800 or (800) 322-6282 Ext. 6800

About the Program

If you have the ability to take something apart, make an adjustment or two, reassemble it and have it work better than ever, you can apply that talent to all kinds of small engines—outboard motors, motorcycles, snowmobiles, chain saws, lawn and garden equipment and even some construction equipment. The marine/motorcycle/air-cooled engine field has experienced phenomenal growth in the past and is expected to grow at an even faster rate in coming years. Career opportunities exist in all areas of the country in both urban and rural areas.

This program offers detailed instruction in the operation, maintenance and repair of internal combustion engines and the equipment they power. Students study electrical systems and power trains; learn welding, machining, measuring, sharpening and fabrication techniques; and gain hands-on experience working on a wide variety of engines and equipment.

Service shop management classes provide students with basic principles, including financial, operational and marketing, to set up their own small engine dealership or service shop.

Admissions Requirements

To review admissions program requirements and application processing dates visit the programs website at:
<http://madisoncollege.edu/program-info/motorcycle-marine-outdoor-power-products>.

Requirements for Graduation

Students must meet two 2.0 GPA requirements to graduate:
 1) GPA for entire program must be 2.0 or above; 2) grade of C in each of the occupational core courses (461 and 420).

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

		Hrs/week	
		Credits	Lec-Lab
First Semester			
32-420-330	Metal Processes 1	2	3-1
31-461-324	Basic Two- and Four-Cycle Engines*	5	8-12
31-461-325	Engine Rebuilding*	5	8-12
31-461-328	Small Engine Lab 1	1	0-4
10-104-189	Customer Relations	2	2-0
Semester Total		15	
Second Semester			
32-420-331	Metal Processes 2	2	3-1
31-461-326	Electrical and Hydraulic Systems*	5	8-12
31-461-327	Power Transmissions and MMOPP*	5	8-12
31-461-329	Small Engine Lab 2	1	0-4
10-102-134	Business Organization and Management	2	3-0
Semester Total		15	

*Meets for 9 weeks

Note: Students are placed in English or mathematics courses based on their scores on the COMPASS or ASSET test or on completion of the appropriate prerequisite/s.



Courses

32-420-330 Metal Processes 1 2 credits

This basic metalworking course is designed to provide the student with instruction in metalworking processes. Instructional units include safety, layout and measuring, machining, oxy-acetylene welding, brazing and cutting, arc welding and properties of metals.

32-420-331 Metal Processes 2 2 credits

This study of metals provides instruction in sheetmetal work, soldering and brazing, forging and heat treatment, grinding, tool sharpening, metal casting, MIG and TIG welding, metal fabrication and the repair of metal objects. Prerequisite: 32-420-330**

31-461-324 Basic Two- and Four-Cycle Engines 5 credits

This nine-week course covers the principles of small internal combustion engines, including two-cycle and four-cycle. Design, construction, engine testing, and diagnosing are all covered. Students become familiar with the tools, machines and equipment that are used for engine repair work in the power equipment shop. Co-requisites: 1st semester core must be taken together (31-461-324, 31-461-325, and 31-461-328).

31-461-325 Engine Rebuilding 5 credits

This nine-week course covers disassembly, repairing, re-assembly and engine break-in. Other topics covered include engine tune-up, carburetion and electrical systems as well as snowmobiles, chainsaws, sharpening and balancing of rotating elements are included. Co-requisites: 1st semester core courses must be taken together (31-461-324, 31-461-325, and 31-461-328).

31-461-326 Electrical and Hydraulic Systems 5 credits

This nine-week course covers electrical systems in great detail. Students study the basic principles of electricity and magnetism. The proper use of meters is covered. Students learn how to service and troubleshoot charging, ignition, starting, safety interlocks and instruments. Basic hydraulic systems also are covered. Prerequisites: all 1st semester core courses**. Co-requisites: 2nd semester core must be taken together (31-461-326), 31-461-327, and 31-461-329).

31-461-327 Power Transmissions and Motorcycle, Marine and Outdoor Power Products 5 credits

This nine-week course covers power transmissions of all of the above equipment. Topics include transmissions, clutches, hydro transaxles, wheels, tires, belts, chains and stern drives. ATVs also are studied in detail. Prerequisites: all 1st semester core courses**. Co-requisites: 2nd semester core must be taken together (31-461-326), 31-461-327, and 31-461-329).

31-461-328 Small Engine Lab 1 1 credit

Students work on individual projects that have been approved by the instructor, such as building a motorcycle engine stand or developing advanced technical knowledge or skill in any of the motorcycle, marine or small engine service areas. Co-requisites: 1st semester core courses must be taken together (31-461-324, 31-461-325, and 31-461-328).

31-461-329 Small Engine Lab 2 1 credit

Students continue working on individual projects that have been approved by the instructor, such as building a motorcycle engine stand or developing advanced technical knowledge or skill in any of the motorcycle, marine or small engine service areas. Prerequisites: all 1st semester core courses**. Co-requisites: 2nd semester core must be taken together (31-461-326), 31-461-327, and 31-461-329).

Career Potential:

- **Outdoor Power Equipment Technicians**

Work on marine, outboard, motorcycle and snowmobile power equipment; lawn and garden equipment; construction equipment; chain saws; golf course equipment; and other small engines.

- **Service Writer**
- **Parts Manager**
- **Factory Service Representative**
- **Power Equipment Salesperson**

More detailed and updated information on this program may be available at: madisoncollege.edu. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

Madison Area Technical College provides equal opportunity in education and employment.

Rev. 04/15

**Completion with a grade of C or better

Nonprofit Management Certificate

Program Number: 90-102-4

Certificate

Business and Marketing Program Cluster

School of Business and Applied Arts

Certificate offered at Truax Campus

For information call: (608) 246-6003 or
(800) 322-6282 Ext. 6003

About the Certificate

The Nonprofit Management Certificate is a practical, accessible credential for individuals who are new to the nonprofit world, those who are already working in nonprofits and want to broaden and deepen their skills and knowledge of contemporary business areas, and current degree students who have career aspirations of working in and leading nonprofit organizations.

The certificate is designed to be flexible based on individual needs. Once the foundation course Nonprofit Management is completed, students can choose from an array of related business courses. If another area of need is identified, our staff will work with you to find course alternatives that best allow you to learn and grow to excel at your role and future roles within nonprofit organizations.

Admission Requirements

To review program admission requirements and application processing dates visit the programs website at:
<http://madisoncollege.edu/program-info/nonprofit-management>.

Requirements for Completion

The certificate will be awarded upon completion of the requirements with a minimum of a 2.0 grade average and no course grade lower than a C. The certificate will be awarded when completion of all requirements is verified after the semester the last course has been completed.

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

		Credits	Hrs/week Lec
10-102-171	Nonprofit Management	3	3-0
	Course selection 1	3	3-0
	Course selection 2	3	3-0
	Course selection 3	3	3-0
	Total	12	

Courses

10-102-171 Nonprofit Management 3 credits

This foundation course is designed for current nonprofit staff and board members with limited formal business and management training. It is also idea for students considering a career in the field. The course covers forming a nonprofit organization, board responsibilities and recruitment, strategic planning, fundraising and development, marketing and public relations, financial management, staff and volunteer recruitment and retention, and program development. Emphasis is placed on practical application of sound practices that uniquely apply to nonprofits.

10-101-106 Accounting Fundamentals 3 credits

Surveys accounting principles and practices with an emphasis on interpretation, rather than preparation, of financial statements. Presents basic business terminology, cash basis and accrual basis accounting, ratio analysis, payroll and budgeting. Note: this class is not for students majoring in accounting.

10-102-145 Introduction to Human Resources 3 credits

Topics include: nature of human management, strategic human resource planning, issues in human resources, planning, equal employment opportunity, analyzing and staffing jobs, training and developing human resources.

10-102-170 Introduction to Sustainable Business 3 credits

How does a business become sustainable? What are the benefits and challenges of moving toward more environmentally, socially and economically sustainable business strategies? Introduction to Sustainable Business will familiarize students with the principles and practices of sustainability, with an emphasis on the creation and management of a sustainable business. Students will learn to develop a business case for sustainability, write a basic sustainability plan, and acquire the tools they need to continue to develop sustainable business practices.

10-104-102 Marketing Principles 3 credits

This foundation course introduces students to the marketing process and how it operates in today's dynamic organizations. The entire marketing mix is examined on a broad scale. Topics include: market segmentation and targeting strategies, market research, consumer behavior, product development, pricing policies, distribution and an overview of promotion. It provides a comprehensive overview of the exciting world of marketing.

10-104-103 Marketing Research 3 credits

Businesses today need current, accurate information upon which to base their decisions. In this class, students learn not only how to gather marketing information from primary and secondary sources using online and other sources, but also how to apply that information to make better marketing decisions. Prerequisites: 10-104-102, 10-103-133, 10103-137, and 10-103-143.

10-104-107 Marketing Management 3 credits

This course is an expanded look at critical issues/trends in the field of marketing. Importance is placed on understanding as well as analyzing the effect of issues/trends on companies and their marketing efforts. Developing skills in interpreting marketing information is another topic of this course. The culmination of the course is the creation of an in-depth marketing plan for a selected product, service, company, or organization. Prerequisites: 10 104-102 and 10-104-161.



Courses continued

10-104-111 Innovative Trends in Marketing 3 credits

This course content changes from semester to semester and is based on the hottest and most important marketing trends and topics. Students will hear from industry leaders, explore cutting-edge theories and practices and have an opportunity to explore trends in which they have a particular interest.

Prerequisite: 10-104-102.

10-104-112 Marketing Design Strategies 3 credits

This course provides participants with the opportunity to understand proven theories of marketing communication design principles and practices. Participants are challenged to create powerful marketing messages, by applying effective creativity and innovation techniques, for appropriate audiences using current and emerging technologies. Pre-requisite: 10-104-102.

10-104-114 Social Media Principles 3 credits

Social media has transformed advertising from a long-term mass medium to a one-to-one communication utilizing almost instant feedback. How businesses are using social media as advertising tools as well as how to create and deploy a social media campaign will be the main focus of this class. Additionally, the history and development of social media platforms such as Facebook, YouTube, Twitter and LinkedIn will be explored, as well as the many ethical and potential legal concerns that have arisen over these new forms of communication. Finally, the concept of viral marketing will be examined and how it allows a social message to explode a message to millions of users in a brief time.

10-109-102 Fundamentals of Meeting Management 3 credits

Students explore the core issues of meeting planning from the fundamentals to the new trends shaping the meetings industry. Development of meeting timelines, checklists and request for proposal are introduced. Further focus includes the process meeting planners must use in site selections, the value of meeting objectives and format, and attendee expectations.

10-109-108 Meetings Industry Budget/Finance 3 credits

Establishing a realistic and sound budget is vital to creation of successful meetings. This course examines the steps in developing a meeting budget. Students learn techniques for projecting and managing budgets including per person methodology and break-even analysis. Emphasis is placed on situations oriented to the meeting industry. Prerequisites or concurrent enrollment: 10-103-133 and 10-109-102.

10-109-109 Special Event Management 3 credits

Demonstrates professional practices used to create, market, plan and implement incentive programs and special events. Emphasis is on applying creativity to develop events with unique purposes and presentations combining elements such as site selection, décor, lighting, sound, and entertainment as well as food and beverage to reflect the theme of the event. Prerequisite: 10-109-102.

10-109-110 Meeting Coordination 3 credits

Provides a solid understanding of the numerous tasks and details involved in developing and coordinating a meeting and/or event. Students explore meeting room design, commonly used audio-visual equipment, the use of speakers, and how effective management of food and beverage impact successful meeting and event planning. Prerequisite: 10-109-102.

10-109-117 Partnership Development 3 credits

Students learn how to analyze a meeting to identify sponsorship and fundraising opportunities. These partnerships build support for a meeting, increase marketing effectiveness, and increase meeting profitability. Prerequisites: 10-109-102 and 10-109-108

10-162-133 Assessing and Managing Risk (ARM 54) 3 credits

This course will serve as a core. Risk Management is a foundational concept in insurance today. The legal foundations of loss exposures, the risk management process, and risk management programs will be discussed for all areas.

10-196-188 Project Management 3 credits

The learner applies the skills and tools necessary to design, implement, and evaluate formal projects. Each learner will demonstrate the application of methods for project planning, developing project proposals, use of relevant software, working with project teams, sequencing tasks, charting progress, dealing with variations, managing project budgets and resources, implementation and project assessment.

10-196-189 Team Building and Problem Solving 3 credits

The learner applies the skills and tools necessary to facilitate problem solving in a team environment. Each learner will demonstrate the application of strategies regarding: the necessary roles for team effectiveness, stages of team development, team problem solving and consensus, systematic processes for problem definition, data acquisition and analysis, generating alternative solutions, choosing solutions, implementation planning and evaluation.

10-196-190 Leadership Development 3 credits

The learner applies the skills and tools necessary to fulfill his/her role as a contemporary leader. Each learner will demonstrate the application of strategies to evaluate leadership effectiveness and communicate vision, mission and goals. Additional topics include: ethical behavior, personal leadership styles and flexibility, impacts of power, employee development, coaching, and effective conflict resolution.

10-196-191 Principles of Supervision 3 credits

The learner applies the skills and tools necessary to perform the functions of a front line manager. Each learner will demonstrate the application of strategies to make the transition to a contemporary supervisory role including: operations planning and analysis, delegation, staffing, problem solving, motivation, training, leadership and performance assessment.

10-196-192 Foundations Of Quality 3 credits

The learner applies the skills and tools necessary to implement and maintain a continuous improvement environment. Each learner will demonstrate the application of a personal philosophy of quality, identify stakeholder relationships, customer expectations, systems-focus, use of appropriate models and tools, managing improvement projects and measuring effectiveness of continuous improvement activities.

10-196-164 Personal Skills for Supervisor 3 credits

The learner applies the skills and tools necessary to deal with the personal challenges inherent with a manager's role. Each learner will demonstrate the application of time management techniques, personal planning, continuous learning, valuing rights and responsibilities of others, effective communication, assertiveness and dealing effectively with stress.

10-201-177 Web Page Design 1 3 credits

Introduces the student to the Internet and the World Wide Web through a mixture of lecture, demonstration and hands-on use of the Internet. Exploration and analysis of existing sites on the web also will be the focus and source of information. This course uses HTML and web design software, and will focus on basics—typography, graphics and page layout. Prerequisite: 10-201-181 (or comparable course or work experience).

10-201-181 Introduction to Computer Graphics 3 credits

Introductory course in electronic design, illustration, and photo retouch, using the Macintosh computer and peripherals. Software applications introduced include raster programs (e.g. Adobe Photoshop), vector programs (e.g., Adobe Illustrator) and page-layout programs (e.g., Adobe InDesign).

More detailed and updated information on this program may be available at: madisoncollege.edu. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

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Rev. 04/15

Nursing Assistant

Program Number: 30-543-1

Less-Than-One-Semester Program

Nursing Program Cluster

School of Health Education

Program offered at Madison, Fort Atkinson, Portage, Reedsburg, and Watertown Campuses

For information call: (608) 246-6065 or (608) 243-4322
(800) 322-6282 ext. 6065

About the Program

The Nursing Assistant program is a 3 credit, 120 hour program. It is offered fall, summer and spring semesters. A variety of course schedules are offered at most Madison College campuses. The Nursing Assistant Program prepares students for employment as nursing assistants. Students learn communication skills, basic nursing and personal care skills, client rights, and care of clients with dementias. A supervised clinical experience with direct client care is a major component of the course. This program is recognized by the Department of Health Services as a nurse aide training program. Upon successful completion of the program, students are eligible for certification testing (written and skills) for the Wisconsin Nurse Aide Registry. (Note: additional fee and process.) Certification is required for employment in nursing homes, hospitals, home health agencies, hospices and care of the developmentally disabled.

Admission Requirements

To review program admission requirements and application processing dates, visit the program's website at: <http://madisoncollege.edu/program-info/nursing-assistant>.

Nursing Assistant Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

First, Second or Summer Semester	Credits	Hrs/week	
		Lec	Lab
30-543-300 Nursing Assistant*	3	8	5
Total	3		

Notes: *This course will be offered several times during the fall, spring and summer semesters with a variety of class schedules. After you have taken the required testing, search for available classes via the catalog number listed above through your student account or the "search for classes" option on the web site.

A copy of the [Functional Abilities](#) necessary to successfully complete the program of study is available on the Nursing Assistant website.

Program Course

30-543-300 Nursing Assistant **3 credits**
Prepares students for employment as nursing assistants. Students learn communication skills, basic nursing and personal care skills, clients' rights and care of clients with dementias. A supervised clinical experience with direct client care is a major component of the course. Upon completion, the student is eligible to take the certification for the Wisconsin Nurse Aide Registry.

Career Potential:

- Nursing Assistant
- Nurse Aide
- Home Health Aide
- Psychiatric Aide

[Employment and Salary Information \(Graduate Employment Report\) PDF](#)

With additional education and/or experience:

- Pre-requisite for many nursing programs

More detailed and updated information on this program may be available at: madisoncollege.edu. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

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Nursing Completion Paramedic to ADN

Program Number: 10-543-1

Associate in Applied Science Degree

Nursing Program Cluster

School of Health Education

Program offered at Truax/Madison

For information call: (608) 246-6065 or (608) 246-6556
(800) 322-6282 ext. 6065 or 6556

About the Program

Accredited by the:

[Accreditation Commission for Education in Nursing](http://acenursing.org)
NE Suite 850
3343 Peachtree Road
Atlanta GA 30326

(404 975-5000
<http://acenursing.org>

Approved by the Wisconsin Department Safety and
Processional Services (dsps.wi.gov) and licensed by the Board
of Nursing.

This program prepares practitioners to function with judgment
and technical competence while providing nursing care to
patients of all ages. Upon completion, students are eligible to
write the national exam for licensure as a registered nurse.
Emphasis is on critical thinking, self-direction and
independence. Helpful aptitudes and interests include respect
for uniqueness of individuals; a willingness to follow procedures
carefully, under-standing that errors may have serious
consequences; and an ability to work and communicate with
others, to be precise and exact work under pressure, and react
quickly in an emergency.

Admission Requirements

To review program admission requirements and application
processing dates visit the programs website at:
<http://madisoncollege.edu/nursing-completion-paramedic-adn>.

Curriculum

The courses listed below outline the requirements for completion for students officially
admitted in the 2015-2016 academic year. Requirements for completion may vary
depending on the semester in which a student is admitted. Current/continuing students
should consult their Academic Requirements report available through their student center
account for specific requirements, as requirements are subject to change.

Pre-Nursing Courses: Credits Lec-Lab

The following courses **must be completed** prior to or be currently in progress with last
course for application for the Nursing Completion Paramedic to ADN courses:

10-801-195	Written Communication OR	3	3-0
20-801-201	English 1	(3)	(3-0)
20-806-207	Anatomy and Physiology 1	4	3-2
20-806-208	Anatomy and Physiology 2	4	3-2
20-809-231	Intro to Psychology	3	3-0
20-809-233	Developmental Psychology	3	3-0
	Total	17	

The following courses **are recommended to be completed** prior to enrolling in the nursing
bridge courses:

10-801-198	Speech OR	3	3-0
10-801-196	Oral/Interpersonal Communication OR	(3)	(3-0)
20-810-201	Fundamentals of Speech (Note: English 2 will no longer suffice.)		
20-806-273	Microbiology.....	5	3-4
20-809-203	Intro to Sociology OR.....	3	3-0
10-809-197	Contemporary American Society.....	(3)	(3-0)
	Elective.....	5	varies
	Total	16	

Paramedic Bridge Courses and Licensure requirements:

Second Semester

10-543-127	Paramedic to AD Theory 1	3	3-0
10-543-128	Paramedic to AD Theory 2	3	3-0
10-543-129	Paramedic to AD Skills	2	0-4
10-543-130	Paramedic to RN Clinical.....	2	0-6
	Total	10 & Paramedic License	

Associate Degree Nursing 2nd year requirements:

Third Semester

10-543-109	Nursing Complex Health Alterations 1.....	3	3-0
10-543-110	Nursing Mental Health Community Concepts	2	2-0
10-543-111	Nursing Intermediate Clinical Practice.....	3	0-9
10-543-112	Nursing Advanced Skills.....	1	0-2
	Semester Total	9	

Fourth Semester

10-543-113	Nursing Complex Health Alterations 2.....	3	3-0
10-543-114	Nursing Management Concepts	2	2-0
10-543-115	Nursing Advanced Clinical Practice.....	3	0-9
10-543-116	Nursing Clinical Transition	2	0-6
	Semester Total	10	

Note: A copy of the Functional Abilities necessary to successfully complete the program of study
is available on the web site.



Program Requirements

- 1) Physical health exam within three months prior to beginning the first nursing course, current TB skin test and completion of all required immunizations and form;
- 2) Physical and mental abilities essential to successfully complete the program are referred to as Functional Abilities. A copy of these functions are available on the web site;
- 3) BID form for the Caregiver Background Checks (CBC). See the Madison College Website for Health, Human and Protective Services Policy; and
- 4) Current "Health Care Professional" CPR certification

Online Courses

All nursing theory courses are available online. Students who are enrolled in program courses may register for online courses. All program policies apply to online and face-to-face courses. Due to graduation verification and licensing paperwork, all fourth semester classes MUST be taken at Madison College.

Program Courses

10-543-109 Nursing Complex Health Alterations 1 3 credits

Complex Health Alterations 1 prepares the learner to expand knowledge from previous courses in caring for clients with alterations in musculoskeletal, cardiovascular, respiratory, endocrine and hematologic systems as well as clients with fluid/ electrolyte and acid-base imbalance, and alterations in comfort.

10-543-110 Nursing Mental Health Community Concepts 2 credits

This course will cover topics related to the delivery of community and mental health care. Specific health needs of individuals, families, and groups will be addressed. Attention will be given to diverse and at-risk populations. Mental health concepts will concentrate on adaptive/maladaptive behaviors and specific mental health disorders. Community resources will be examined in relation to specific types of support offered to racial, ethnic, economically diverse individuals and groups.

10-543-111 Nursing Intermediate Clinical Practice 3 credits

This intermediate level clinical course develops the RN role when working with clients with complex health care needs. A focus of the course is developing skills needed for managing multiple clients and priorities. Using the nursing process, students will gain experience in adapting nursing practice to meet the needs of clients with diverse needs and backgrounds.

10-543-112 Nursing Advanced Skills 1 credit

This course focuses on the development of advanced clinical skills. Content includes advanced IV skills, blood product administration, chest tube systems, basic EKG interpretation and nasogastric/feeding tube insertion.

10-543-113 Nursing Complex Health Alterations 2 3 credits

This course prepares the learner to expand knowledge and skills from previous courses in caring for clients with alterations in the immune, neuro-sensory, musculoskeletal, gastrointestinal, hepatobiliary, renal/urinary and the reproductive systems. The learner will also focus on management of care for clients with high risk perinatal conditions, high risk newborns and the ill child. Synthesis and application of previously learned concepts will be evident in the management of clients with critical/life threatening situations.

10-543-114 Nursing Management Concepts 2 credits

This advanced clinical course covers nursing management and professional issues related to the role of the RN emphasis is paced on preparing for the RN practice.

10-543-115 Nursing Advanced Clinical Practice 3 credits

This advanced clinical course requires the student to integrate concepts from all previous courses in the management of groups of clients facing complex health alterations. Students will have the opportunity to further develop critical thinking skills using the nursing process in making clinical decisions. Continuity of care through interdisciplinary collaboration is emphasized.

10-543-116 Nursing Clinical Transition 2 credits

This clinical experience integrates all knowledge learned in the previous course in transitioning to the role of the graduate nurse. The course promotes relatively independent clinical decisions, delegations, and works collaboratively with others to achieve client and organizational outcomes.

10-543-127 Paramedic to AD Theory 1 3 credits

This course will focus on basic nursing concepts that the beginning nurse will need to provide care to diverse populations. The nursing process will be introduced as a framework for organizing care of patients with alterations in cognition, elimination, comfort, grief/loss, mobility, skin integrity, and related principles of pharmacology.

10-543-128 Paramedic to AD Theory 2 3 credits

This course will cover topics related to health promotion in the context of the family. Nursing care of the developing family topics including reproductive, pregnancy, labor and delivery, postpartum, and the newborn child will be covered. Patterns of adaptive and maladaptive behaviors, family dynamics, and grief and loss will be addressed utilizing mental health principles. An emphasis is placed on teaching and supporting healthy lifestyle changes. Nutrition, exercise/stress management, and risk reduction practices are addressed. Perioperative, malignancy, and chronic illness concepts are reviewed with related pharmacology concepts.

10-543-129 Paramedic to AD Skills 2 credits

This course focuses on development of basic skills, clinical skills, and physical assessment across the lifespan. Content includes basic supportive and hygienic cares, mathematic calculations and conversions related to clinical skills, aseptic technique, wound care, tracheostomy care and suctioning, the management of enteral tubes, medication administration, enemas, ostomy care, and physical assessment skills using a body systems approach.

10-543-130 Paramedic to RN Clinical 2 credits

This clinical course emphasizes basic nursing skills and application of the nursing process to clients and families across the lifespan. Emphasis is placed on assessment, relationships, communication, data collection, documentation, and medication administration.

Career Potential:

- **Registered Nurse (RN)** Board Exam (NCLEX), graduates may work as registered nurses in a variety of healthcare settings including clinics, hospitals, extended-care facilities, doctor's offices, home health agencies and selected industrial and business settings.

With additional education graduates may:

- **Attain a Bachelors of Science in Nursing Degree**
- **Attain a Master of Science in Nursing Degree**

More detailed and updated information on this program may be available at: madisoncollege.edu. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

Madison Area Technical College provides equal opportunity in education and employment.

Occupational Therapy Assistant

Program Number: 10-514-1

Associate in Applied Arts Degree

Health-Related Professions Program Cluster

School of Health Education

Program offered at the Truax Campus

For information call:

(608) 246-6065 or (800) 322-6282 Ext. 6065

About the Program

Occupational therapy assistants serve individuals across the life span whose ability to participate in everyday occupations is complicated by developmental disability, physical and/or emotional illness, injury or aging. Occupations are the activities of daily life that have value to individuals and help them be contributing members of their communities. Occupational therapy assistants 1) use purposeful activities to improve the physical, cognitive, emotional and social skills needed to function; 2) offer alternative approaches and adaptations to compensate when needed and 3) promote the balance of self-care, work and leisure activities that results in the quality of life and level of independence valued by the individual.

This program prepares occupational therapy assistants who collaborate with occupational therapists. OT assistants are employed in community settings providing mental health, residential care and home health and work-related services as well as in nursing homes, hospitals and schools.

Accreditation/Credentialing:

This program is accredited by the Accreditation Council for Occupational Therapy Education (ACOTE) of the American Occupational Therapy Association (AOTA), 4720 Montgomery Lane, Suite 200, Bethesda, MD 20814-3449. ACOTE's telephone number, C/O AOTA, is (301) 652-AOTA and the website is www.acoteonline.org.

Credentialing as a Certified Occupational Therapy Assistant (COTA) is separate from Madison College graduation. Graduates of the program will be eligible to sit for the national certification examination for the Occupational Therapy (NBCOT). After successful completion of this exam, the graduate will be a Certified Occupational Therapy Assistant (COTA). In addition, most states require licensure to practice; however, state licenses are usually based on the results of the NBCOT certification examination. A felony conviction may affect a graduates' ability to sit for the NBCOT certification examination or attain state licensure.

Admission Requirements

To review program admission requirements and application processing dates, visit the program's website at: <http://madisoncollege.edu/program-info/occupational-therapy-assistant>.

NBCOT Exam Pass Rates

<http://madisoncollege.edu/nbcot-exam-pass-rates-accreditation-and-retention-rates>

The National Board for Certification in Occupational Therapy (NBCOT) program data results page can be found at: <https://secure.nbcot.org/data/schoolstats.aspx>.

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

FIRST YEAR

First Semester

		Credits	Hrs/week Lec-Lab
10-514-171	Introduction to Occupational Therapy	3	2-1
10-514-172	Medical and Psychosocial Conditions	3	2-1
10-514-173	Activity Analysis and Applications	2	0-2
10-801-195	Written Communication* OR	3	3-0
20-801-201	English 1*	(3)	(3-0)
20-806-206	General Anatomy and Physiology***	4	3-2
10-809-199	Psychology of Human Relations OR	3	3-0
20-809-231	Introduction to Psychology* 1	(3)	(3-0)
Semester Total		18	

Second Semester

10-514-174	OT Performances Skills	4	0-4
10-514-175	Psychosocial Practice	3	1-2
10-514-176	OT Theory and Practice	3	1-2
10-514-178	Geriatric Practice	3	1-2
20-809-237	Abnormal Psychology *	3	3-0
20-801-202	English 2 * OR	3	3-0
10-801-198	Speech * OR	(3)	(3-0)
10-801-196	Oral/Interpersonal Communication* OR	(3)	(3-0)
20-810-201	Fundamentals of Speech* OR	(3)	(3-0)
20-810-205	Interpersonal & Small Group Comm *	(3)	(3-0)
Semester Total		19	

Summer Semester

20-809-233	Developmental Psychology* OR	3	3-0
10-809-188	Developmental Psychology 2	(3)	3-0
10-809-172	Diversity Studies* OR	3	3-0
20-809-217	Race, Class, Gender* OR	(3)	(3-0)
10-809-197	Contemporary American Society * OR	(3)	(3-0)
20-809-203	Introduction to Sociology *	(3)	(3-0)
Semester Total		6	

SECOND YEAR

First Semester

10-514-177	Assistive Technology and Adaptations	2	0-2
10-514-179	Community Practice	2	0-2
10-514-182	Physical Rehabilitation Practice	3	1-2
10-514-183	Pediatric Practice	3	1-2
10-514-184	OTA Fieldwork 1	2	1-1
	Elective*	3	3-0
Semester Total		15	

Second Semester

10-514-185	OT Practice and Management	2	1-1
10-514-186	OTA Fieldwork IIA**	5	0-20
10-514-187	OTA Fieldwork IIB**	5	0-20
Semester Total		12	

* Courses which can be taken prior to entering the program.

** Students must complete all Level II Fieldwork within 18 months following completion of the didactic portion of the program.

*** General Anatomy & Physiology can be satisfied by taking both

Anatomy & Physiology I & Anatomy & Physiology II by the semester indicated.

There are part-time or 3-year curriculum plans available upon meeting with the Health Advisor or Program Director.

¹ Note: This is the pre-req for the required Developmental Psychology course. (Psychology Human Relations will NOT meet the pre-req for that required course.)

² Note: This course is not offered at Madison College, and is only listed here as a potential transferred in course.



Program Requirements

1) Caregiver Background Check (CBC); refer to the **School of Health Education Policy** on the web site; 2) current CPR "Professional Level" certification is required before beginning the core courses. Students must maintain current CPR certification while attending the program; 3) Physical exam and a completed Health History Form on file prior to beginning fieldwork experiences involving direct client care; and 4) Essential functions for the Occupational Therapy Assistant Program.

Note: A copy of the essential functions necessary to successfully complete the program of study is available upon request from the school office or by clicking on the Additional Info tab on this page: <http://madisoncollege.edu/program-info/occupational-therapy-assistant>.

Program Courses

10-514-171 Introduction to Occupational Therapy 3 credits
Provides an overview of history, philosophy, ethics, and scope of occupational therapy practice. Examines legal responsibilities, professional resources, and organization. Students practice basic skills related to therapeutic relationships and determine their own suitability to a career in occupational therapy. Prerequisites: Algebra, Chemistry and Biology. Co-requisites: 10-514-172, 10-514-173, and 20-806-206.

10-514-172 Medical and Psychosocial Conditions 3 credits
Introduces medical and psychosocial conditions as they relate to occupational therapy practice. Topics include etiology, symptomatology, treatment and contraindications. Prerequisites: Algebra, Chemistry, and Biology. Co-requisites: 10-514-171, 10-514-173, and 20-806-206.

10-514-173 Activity Analysis and Applications 2 credits
Provides instruction in activity analysis with hands on experience in activities across the lifespan. Students apply the teaching/learning process and adhere to safety regulations. Prerequisites: Algebra, Chemistry and Biology. Co-requisites: 10-514-171, 10-514-172, and 20-806-206.

10-514-174 OT Performance Skills 4 credits
Emphasis on the development of skills related to assessment and intervention in the areas of sensory, motor, cognition and communication. Prerequisites: 10-514-171, 10-514-172, 10-514-173, and 20-806-206. Co-requisites: 10-514-175, 10-514-176, and 10-514-178.

10-514-175 Psychosocial Practice 3 credits
Examines the role of the OTA in the service delivery to individuals affected by mental health conditions. Provides opportunity for development of skills related to psychosocial assessment and interventions. Prerequisites: 10-514-171, 10-514-172, 10-514-173, and 20-806-206. Co-requisites: 10-514-174, 10-514-176, and 10-514-178.

10-514-176 OT Theory and Practice 3 credits
Examines the theoretical foundations that guide OT practice. Apply group dynamics and demonstrate leadership skills. Prerequisites: 10-514-171, 10-514-172, 10-514-173 and 20-806-206. Co-requisites: 10-514-174, 10-514-175 and 10-514-178.

10-514-177 Assistive Technology and Adaptations 2 credits
Explores technologies that support delivery of OT services. Emphasis on competency related to computer skills, ergonomics, adaptive devices, and environments. Prerequisites: 10-514-174, 10-514-175, 10-514-176, 10-514-178. Co-requisites: 10-514-179, 10-514-182, 10-514-183, 10-514-184.

10-514-178 Geriatric Practice 3 credits
Examines the role of the OT in the service delivery to elders in a variety of settings. Includes analysis of the impact of age-related changes and disease processes on the function of the elderly. Prerequisites: 10-514-171, 10-514-172, 10-514-173, 20-806-206. Co-requisites: 10-514-174, 10-514-175, 10-514-176.

10-514-179 Community Practice 2 credits
Explores practice options and interventions for occupation-based community practice. Students articulate the unique role of occupational therapy within the community. Prerequisites: 10-514-174, 10-514-175, 10-514-176, and 10-514-178. Co-requisites: 10-514-177, 10-514-182, 10-514-183 and 10-514-184.

10-514-182 Physical Rehabilitation Practice 3 credits
Explores interventions relative to major physical disability diagnoses seen in OT practice. Evaluation, treatment interventions, and documentation are emphasized relative to the biomechanical, neurodevelopmental and rehabilitative approaches to practice. Prerequisites: 10-514-174, 10-514-175, 10-514-176, and 10-514-178. Co-requisites: 10-514-177, 10-514-179, 10-514-183, and 10-514-184.

10-514-183 Pediatric Practice 3 credits
Explores interventions relative to major pediatric diagnoses seen in OT practice. Evaluation, treatment interventions, and documentation are emphasized within the context of the child's occupations. Prerequisites: 10-514-174, 10-514-175, 10-514-176, and 10-514-178. Co-requisites: 10-514-177, 10-514-179, 10-514-182, and 10-514-184.

10-514-184 OTA Fieldwork I 2 credits
Integrate classroom theory and practice into a Fieldwork Level I experience. Provides experiences to assist in the development of communication, professional and observational skills. Prerequisites: 10-514-174, 10-514-175, 10-514-176 and 10-514-178. Co-requisites: 10-514-177, 10-514-179, 10-514-182, and 10-514-183.

10-514-185 OT Practice and Management 2 credits
Provides opportunities to practice clinical management skills, continuous quality improvement measurement, and administrative concepts and procedures. Students create a professional development plan. Prerequisites: 10-514-177, 10-514-179, 10-514-182, 10-514-183 and 10-514-184. Co-requisites: 10-514-186 and 10-514-187.

10-514-186 OTA Fieldwork 11A 5 credits
Develop skills and behaviors necessary for entry-level occupational therapy assistant practice. Provides a different clinical practice setting than OTA Fieldwork IIB. Prerequisites: 10-514-177, 10-514-179, 10-514-182, 10-514-183, and 10-514-184. Co-requisites: 10-514-185 and 10-514-187.

10-514-187 OTA Fieldwork 11B 5 credits
Develop skills and behaviors necessary for entry level occupational therapy assistant practice. Provides a different clinical practice setting than OTA Fieldwork 2A. Prerequisites: 10-514-177, 10-514-179, 10-514-182, 10-514-183, and 10-514-184.

Career Potential:

- Certified Occupational Therapy Assistant (COTA)
- Adult Day Care Coordinator
- Activities Coordinator
- Community Support Worker
- Life Skills Trainer
- Durable Medical Equipment Coordinator
- Job Coach
- Family Support Worker
- Supported Employment Specialist

With additional education and/or work experience, graduates may find employment as:

- Assisted Living Program Coordinator/ Manager
- Case Manager
- Community-Based Residential Facility Manager
- Assistive Technology Provider

More detailed and updated information on this program may be available at: madisoncollege.edu. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

Madison Area Technical College provides equal opportunity in education and employment.

Rev. 04/15

Optometric Technician

Program Number: 31-516-2

One-Year Technical Diploma

Health-Related Professions Program Cluster

School of Health Education

Program offered at Madison Campuses

For information call: (608) 246-6065, (608) 246-6472, or (800) 322-6282 Ext. 6065 or 6472

About the Program

An optometric technician works under the supervision of an optometrist or ophthalmologist and performs:

- Patient pre-testing such as visual acuity, color vision, depth perception, pupil testing, pressure inside the eye, corneal curvature, peripheral vision and blood pressure.
- Contact lens ordering, verification and patient education. The technician may also assist the doctor in the fitting of contact lenses.
- Eyeglass selection, ordering, verification and adjustment.

Established in 1978, the Optometric Technician Program is a one-year technical diploma program that may be completed in nine months of full-time study. The program accepts new students in August.

Instructors train students to work in eye care and emphasize the unique duties required of an optometric technician to provide quality vision care services to patients. The technical training includes optometric terminology, optical properties of light, patient pretesting skills, frame and lens selection, eyeglass adjustment, contact lens patient education, ocular anatomy and physiology, visual training and practice management. Clinical experience—working directly with doctors and patients—is an important part of the curriculum.

Admissions Requirements

To review program admission program requirements and application processing dates visit the programs website at: <http://madisoncollege.edu/program-info/optometric-technician>.

Program Requirements

1) Physical exam and completed Health History Form on file prior to beginning the second semester; and 2) written proof of Adult and Child CPR certification prior to beginning the second semester.

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

First Semester		Credits	Hrs/week Lec-Lab
31-516-325	Optical Dispensing 1	3	3-2
31-516-301	Ophthalmic Pre-Testing.....	3	3-3
31-516-305	Basic Optical Concepts	3	3-2
31-516-315	Ocular Anatomy.....	2	3-1
31-516-339	Human Relations.....	1	2-0
Semester Total		12	
Second Semester		Credits	Hrs/week Lec-Lab
31-516-326	Optical Dispensing 2	2	2-2
31-516-330	Contact Lenses	3	3-2
31-516-335	Ophthalmic Specialty Testing.....	3	3-3
31-516-340	Patient Relations and Practice Management.....	2	3-0
31-516-345	Preclinical	2	0-4
31-516-350	Clinical Experience*	3	0-40
Semester Total		15	

*Clinical experience lasts six weeks and begins on week 15 of the second semester of study.

Note: a copy of the essential functions necessary to successfully complete the program of study is available upon request from the division office.

This program is accredited by the Accreditation Council on Optometric Education: <http://www.aoa.org/x5153.xml>

As an Optometric Technician program graduate you are eligible to sit for the Certified Paraoptometric Technician examination.

Additional Information:

The Clinical Ophthalmic Assistant certificate expands the curriculum of the Optometric Technician Program. By taking one additional classroom course and participating in an additional clinical experience, you can be eligible to receive an Optometric Technician Technical Diploma and a Clinical Ophthalmic Assistant Certificate. The Clinical Ophthalmic Assistant Certificate is accredited by the Commission on Accreditation of Ophthalmic Medical Programs (CoA-OMP). By receiving this certificate you are eligible to sit for the Certified Ophthalmic Assistant examination. The Ophthalmic Assistant works under the supervision of an ophthalmologist.



Program Courses

31-516-301 Ophthalmic Pre-Testing 3 credits

Covers the history of optometry, relationships between optometry, ophthalmology and opticianry and various paraprofessional careers in vision care. The course involves the study of and practical experience in patient pre-testing such as case history, visual acuity, color vision, pupil evaluation and depth perception as well as the specialized testing procedures such as keratometry and blood pressure.

31-516-305 Basic Optical Concepts 3 credits

Covers the properties of light and the function of a lens in vision correction. Included is a review of basic math needed in vision care and the physiological aspects of vision. This course begins the study of the neutralization and verification of spectacle lens powers, to include spherical, cylindrical and prism lenses.

31-516-315 Ocular Anatomy 2 credits

Familiarizes the optometric technician with the form and function of the human eye. The foundation of the lecture material is the anatomy of the eye, but we will discuss the physiology and function of the eye as much as possible. We will also discuss the actions and uses of diagnostic pharmaceutical agents, as their function is based on interference with normal ocular physiology. This course also covers optometric terminology as well as prescription translation.

31-516-325 Optical Dispensing 1 3 credits

Covers frame definition, parts and types of frames, measurement of frames and lenses, alignment of frames, inserting and removing lenses, introduction to dispensing of eyewear and frame repairs.

31-516-326 Optical Dispensing 2 2 credits

This course assists the student in developing a mastery of the alignment and adjustment of eyewear. It also covers the various lens materials, multifocal styles and lens tints. Prerequisites: 31-516-325 and 31-516-305.

31-516-330 Contact Lenses 3 credits

Gives the student in-depth exposure to the technical aspects of clinical contact lens practice. Lecture and laboratory experiences emphasize lens verification, patient education and evaluation. Prerequisites: 31-516-301, 31-516-305, and 31-516-315.

31-516-335 Ophthalmic Specialty Testing 3 credits

Provides the student experience and knowledge in areas of special vision care procedures: subjective refraction, visual field testing, slit lamp, Goldmann and non-contact tonometry, basic concepts of orthoptics and the treatment of eye diseases including instillation of eye medications and eye patching. Patient instruction and assistance are emphasized in laboratory sessions. Prerequisites: 31-516-301, 31-516-305, and 31-516-315.

31-516-339 Human Relations 1 credit

Introduces students to their personal and vocational responsibilities as an optometric technician. The development of communication skills one needs as an optometric technician are introduced. The ethical and legal responsibilities of an optometric technician are defined. Time management techniques will be presented. Basic concepts of stress and how it affects behavior, and stress management are discussed. The course also covers writing a job application letter and resume as well as interview techniques.

31-516-340 Patient Relations and Practice Management 2 credits

Provides a study of front office management techniques including telephone and appointment book management, filing, recall systems, bookkeeping and insurance claim processing.

31-516-345 Preclinical 2 credits

Prepares students for clinical affiliation by having them complete vision screenings on patients from the college. Class discussions are held analyzing the results of the screening as well as the students' performance. Prerequisites: 31-516-301, 31-516-305, and concurrent enrollment in 31-516-335.

31-516-350 Clinical Experience 3 credits

Students participate 40 hours per week for six weeks of assigned clinical experience in an optometric or clinic setting. The student is expected to achieve specific educational objectives determined for this experience. Prerequisite: satisfactory completion of all first-semester courses plus enrollment in second-semester courses.

Internet-Based Courses

Internet-based courses are available for individuals already employed in eye care. For detailed information, see the Optometric Technician program on the Madison College Website at matcmadison.edu. From the homepage, click on [Programs & Classes](#).

Career Potential:

- **Optometric Technician**
- **Ophthalmic Assistant**
Person assists an optometrist or ophthalmologist in the delivery of eye care. Duties may include preliminary testing procedures, dispensing of glasses and contact lenses and front office management.
- **Dispensing Optician**
This person specializes in the fitting and dispensing of eyewear. They may be employed by an eye care clinic, optometrist, ophthalmologist, or own their own optical dispensary.
- **Contact Lens Technician**
Duties may include the ordering, verification and dispensing of contact lenses. The contact lens technician may also assist the doctor in chair side techniques of fitting contact lenses.

More detailed and updated information on this program may be available at: matcmadison.edu. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

Madison Area Technical College provides equal opportunity in education and employment.

Paralegal

Associate Degree

Business and Marketing Program Cluster

School of Business and Applied Arts

Program offered at Madison Campuses

For information call:

(608) 246-6003 or (800) 322-6282 Ext. 6003

About the Program

The two-year associate degree Paralegal Program prepares students for highly responsible entry-level positions as paralegals or legal assistants. Students take courses that provide them with the basic competencies to begin a career as a paralegal or legal assistant. Students who have earned a bachelor's degree should apply to the Paralegal Post-baccalaureate diploma program.

A paralegal or legal assistant is a person qualified by education, training, or work experience who is employed or retained by a lawyer, law office, corporation, governmental agency or other entity to perform specifically-designated substantive legal work for which a lawyer is responsible. Paralegals may not provide legal services to the public, except as permitted by law.

Admissions Requirements

To review admissions program requirements and application processing dates visit the programs website at:

<http://madisoncollege.edu/program-info/paralegal>.

Program Number: 10-110-1

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

		Hrs/week	
		Credits	Lec-Lab
Prior to the start of program			
10-110-175	Orientation to Paralegal Profession	1	1-0

First Semester

10-110-101	Introduction to Paralegalism and Legal Ethics	3	3-0
10-110-141	Computer Applications-Legal.....	3	2-2
10-801-195	Written Communication*	3	3-0
10-809-195	Economics.....	3	3-0
10-809-199	Psychology of Human Relations.....	3	3-0
	<u>Elective.....</u>	<u>3</u>	<u>E</u>
Semester Total		18	

Second Semester

10-110-102	Civil Litigation 1.....	3	3-0
10-110-104	Legal Research.....	3	3-0
10-801-196	Oral and Interpersonal Communication OR	3	3-0
10-801-198	<i>Speech</i>	(3)	(3-0)
10-809-197	Contemporary American Society.....	3	3-0
	<u>Choose Selective (see list)</u>	<u>3</u>	<u>3-0</u>
Semester Total		15	

Third Semester

10-110-105	Legal Writing	3	3-0
10-110-176	Career Building Techniques - Paralegal.....	2	2-0
	Choose 1 of the following:		
10-804-144	Math of Finance OR	3	3-0
10-806-177	<i>General Anatomy & Physiology</i> OR	(4)	(3-1)
20-806-204	<i>Biological Greek & Latin Terminology</i> OR	(3)	(3-0)
20-806-206	<i>General Anatomy & Physiology</i>	(4)	(3-1)
	<u>Choose Selectives (see list)</u>	<u>6</u>	<u>3-0</u>
Semester Total		14	

Fourth Semester

10-110-103	Civil Litigation 2.....	3	3-0
10-110-107	Legal Aspects of Business Organizations.....	3	3-0
10-110-142	Paralegal Internship	3	3-0
10-809-166	Intro to Ethics: Theory and Application.....	3	3-0
	<u>Choose Selectives (see list)</u>	<u>6</u>	<u>3-0</u>
Semester Total		18	

*Although any section may be taken to satisfy the requirement, a specific section is offered for the paralegal students and it is recommended for program students to register for that section.

Paralegal program students must take at least ten (10) credits or the equivalent of legal specialty courses through traditional classroom instruction.



Program Courses

10-110-101 Introduction to Paralegalism and Legal Ethics 3 credits

Provides students with an introduction to the paralegal profession, the American legal system, legal ethics, legal terminology, research, and the common law of torts. Restricted to students admitted to the following program(s): 10-110-1 Paralegal. Prerequisite: 10-110-175.

10-110-102 Civil Litigation 1 3 credits

Outlines the initial stages of civil litigation, including initial client contact, investigation, pleadings, and motions. Prerequisite: 10-110-101.

10-110-103 Civil Litigation 2 3 credits

Covers the civil litigation procedure during discovery, trial, and appeal. Prerequisite: 10-110-102.

10-110-104 Legal Research 3 credits

Provides students with an application of legal research techniques, using traditional and computer-assisted resources. Involves extensive hands-on legal research exercises and document preparation exercises. Prerequisite: 10-110-101.

10-110-105 Legal Writing 3 credits

Concentrates on the skills required for legal writing and analysis. Prerequisite: 10-110-104.

10-110-106 Family Law 3 credits

Family Law covers the basic legal concepts in the area of family relations, particularly divorce. Prerequisite: 10-110-101.

10-110-107 Legal Aspects of Business Organizations 3 credits

Acquaints students with legal aspects of the formation, operation, and dissolution of the five principal types of business organizations utilized in the United States. Prerequisite: 10-110-101.

10-110-110 Real Estate Law 3 credits

Includes drafting real estate descriptions, listing contracts, offers to purchase, deeds, land contracts, mortgages, foreclosure pleadings, transfer tax returns, and leases. Prerequisite: 10-110-101.

10-110-114 Administration of Estates 3 credits

Basic legal concepts surrounding powers of attorney, wills, trusts, and intestacy, including probate forms and procedures as well as inheritance tax returns are covered in the Administration of Estates class. Prerequisite: 10-110-101.

10-110-115 Administrative Law 3 credits

Administrative Law is designed to acquaint students with the process by which government agencies make and administer rules and regulations. Prerequisite: 10-110-101.

10-110-122 Debtor and Creditor Relations 3 credits

Considers pre and post-judgment collection rights, creditor protection devices, State and Federal consumer protection laws, and Federal bankruptcy laws. Prerequisite: 10-110-101.

10-110-141 Computer Applications-Legal 3 credits

Students develop technology skills using various law office computer applications. Pre-requisite or concurrent enrollment: 10-110-101.

10-110-142 Paralegal Internship 3 credits

Students gain practical experience working in a legal environment under the supervision of an attorney or other qualified professional for a minimum of 140 hours. Prerequisites: 10-110-101; 10-110-176; 10-110-104, and 10-110-105 (or concurrent enrollment).

10-110-160 Employment Law –Paralegal 3 credits

Employment Law covers the analysis of federal and state laws governing employment relationships, job discrimination, sexual harassment, workplace privacy, labor standards, and human resource management. Prerequisite: 10-110-101.

10-110-168 Criminal Law 1 3 credits

Provides an introduction to substantive and procedural criminal law emphasizing the elemental analysis of criminal statutes, the drafting of prosecutorial documents, and the Constitutional rights of defendants. Prerequisite: 10-110-101.

10-110-169 Criminal Law 2 3 credits

This course builds on the foundation developed in Criminal Law 1, requiring students to apply previously learned 4th, 5th, and 6th Amendment and other constitutional law principles to the unique facts of three mock trial cases. Heavy emphasis is placed upon generating "real world work product" tied to trial preparation, with particular focus on trial-related discovery issues and motion practice. Ethical and effective witness interviewing techniques/practices and settlement preparation are also covered. Prerequisite: 10-110-168.

10-110-170 Intellectual Property Law 3 credits

This course introduces paralegal students to the law of trademarks, copyrights, and patents. It covers the basic requirements for protecting these forms of intellectual property; identifies the sources of authority that govern intellectual property law; explains the types of rights in intellectual property that are available; introduces the concepts of infringement and defenses to infringement claims; and surveys of the types of remedies used to compensate an owner for infringement. Course is restricted to students admitted to the following programs(s): 10-110-1 Paralegal or 90-110-1 Paralegal Post-baccalaureate Certificate. Prerequisite: 10-110-101.

10-110-171 Law and Contemporary Problems 3 credits

This 3 credit legal specialty course addresses topic areas of current interest in the legal community and will vary by semester. Prerequisite: 10-110-101.

10-110-172 Environmental Law 3 credits

This course introduces students to the study of environmental law, with emphasis on the role of the paralegal in this field. It surveys major environmental acts in the United States, such as the Clean Air Act, Clean Water Act, and other legislation. This course also presents an overview of the treatment of issues concerning the environment from a legal perspective. Prerequisite: 10-110-101.

10-110-173 Contract Law in a Global Economy 3 credits

This survey course explores the common law of contracts, contracts of sale under Article 2 of the UCC, and the legal issues and risks that affect business transactions in the global marketplace. Prerequisite: 10-110-101.

10-110-175 Orientation to Paralegal Profession 1 credit

This course will (i) introduce students to the paralegal profession; (ii) acquaint students with the classes offered in the paralegal program; (iii) provide students with tools for success in the paralegal program and the paralegal career field; (iv) administer the required paralegal program entrance keyboarding test; and (v) advise and enroll students in their fall semester courses. Restricted to students admitted to the following program(s): 10-110-1 Paralegal or 90-110-1 Paralegal Post-baccalaureate Certificate.

10-110-176 Career Building Techniques - Paralegal 2 credits

This course will focus on internship and career strategies; effective portfolios; resumes and cover letters; the internship experience; interview techniques; finding an internship site including sites for students interested in receiving the Program's International Certificate; job hunting resources and alternative career paths; strategies for success in the work place; advancing in your career; and getting your next job.

Paralegal Selectives (3 credits each)

10-110-106	Family Law*
10-110-110	Real Estate Law**
10-110-114	Administration of Estates*
10-110-115	Administrative Law**
10-110-122	Debtor and Creditor Relations*
10-110-160	Employment Law-Paralegal**
10-110-168	Criminal Law 1
10-110-169	Criminal Law 2**
10-110-170	Intellectual Property Law**
10-110-171	Law and Contemporary Problems*
10-110-172	Environmental Law*
10-110-173	Contract Law in a Global Economy*

*Course typically offered in the fall semester only

**Course typically offered in the spring semester only

Career Potential:

- Law Office Paralegal
- Public/Government Paralegal
- Corporation Paralegal
- Trust Department Paralegal
- Real Estate Paralegal
- Law Office Manager
- Contract Administrator

More detailed and updated information on this program may be available at: madisoncollege.edu. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

Madison Area Technical College provides equal opportunity in education and employment.

Paralegal Post-baccalaureate

Program Number: 31-110-1

Technical Diploma

Business and Marketing Program Cluster

School of Business and Applied Arts

Program offered at Madison Campuses

For information call:

(608) 246-6003 or (800) 322-6282 Ext. 6003

About the Program

The Paralegal Post-baccalaureate program prepares students for highly responsible entry-level positions as paralegals or legal assistants. Students take courses that provide them with the basic competencies to begin a career as a paralegal or legal assistant. The Paralegal Post-baccalaureate Diploma is appropriate for those persons who already have earned a bachelor's degree. Students who have not earned a bachelor's degree should apply to the Paralegal Associate Degree Program.

A paralegal or legal assistant is a person qualified by education, training, or work experience who is employed or retained by a lawyer, law office, corporation, governmental agency or other entity to perform specifically-designated substantive legal work for which a lawyer is responsible. Paralegals may not provide legal services to the public, except as permitted by law.

Admissions Requirements

To review admissions program requirements and application processing dates visit the programs website at:

<http://madisoncollege.edu/program-info/paralegal-post-baccalaureate>.

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

		Credits	Hrs/week Lec-Lab
Prior to start of first semester			
10-110-175	Orientation to Paralegal Profession.....	1	1-0
First Semester			
10-110-101	Introduction to Paralegalism and Legal Ethics.....	3	3-0
10-110-102	Civil Litigation 1.....	3	3-0
10-110-104	Legal Research.....	3	3-0
10-110-141	Computer Applications - Legal.....	3	2-2
10-110-176	Career Building Techniques-Paralegal.....	2	2-0
Second Semester			
10-110-105	Legal Writing.....	3	3-0
10-110-142	Paralegal Internship.....	3	3-0

Paralegal program students must take at least ten (10) credits or the equivalent of legal specialty courses through traditional classroom instruction.

Program Courses

10-110-101 Introduction to Paralegalism and Legal Ethics 3 credits

Provides students with an introduction to the paralegal profession, the American legal system, legal ethics, legal terminology, research, and the common law of torts. Restricted to students admitted to the following program(s): 10-110-1 Paralegal or 90-110-1, and Paralegal Post-baccalaureate. Prerequisite: 10-110-175.

10-110-102 Civil Litigation 1 3 credits

Outlines the initial stages of civil litigation, including initial client contact, investigation, pleadings and motions. Prerequisite or concurrent enrollment: 10-110-101.

10-110-103 Civil Litigation 2 3 credits

Covers the civil litigation procedure during discovery, trial, and appeal. Prerequisite: 10-110-102.

10-110-104 Legal Research 3 credits

Provides students with an application of legal research techniques, using traditional and computer-assisted resources. Involves extensive hands-on legal research exercises and document preparation exercises. Prerequisite or concurrent enrollment: 10-110-101.

10-110-105 Legal Writing 3 credits

Concentrates on the skills required for legal writing and analysis. Prerequisite: 10-110-104.

10-110-107 Legal Aspects of Business Organizations 3 credits

Acquaints students with legal aspects of the formation, operation, and dissolution of the five principal types of business organizations utilized in the United States. Prerequisite: 10-110-101.

10-110-110 Real Estate Law 3 credits

Includes drafting real estate descriptions, listing contracts, offers to purchase, deeds, land contracts, mortgages, foreclosure pleadings, transfer tax returns, and leases. Prerequisite: 10-110-101.

10-110-114 Administration of Estates 3 credits

Basic legal concepts surrounding powers of attorney, wills, trusts, and intestacy, including probate forms and procedures as well as inheritance tax returns are covered in the Administration of Estates class. Prerequisite: 10-110-101.

10-110-115 Administrative Law 3 credits

Administrative Law is designed to acquaint students with the process by which government agencies make and administer rules and regulations. Prerequisite: 10-110-101.

10-110-122 Debtor and Creditor Relations 3 credits

Considers pre and post-judgment collection rights, creditor protection devices, State and Federal consumer protection laws, and Federal bankruptcy laws. Prerequisite: 10-110-101.

10-110-141 Computer Applications-Legal 3 credits

Students develop technology skills using various law office computer applications. Prerequisite or concurrent enrollment: 10-110-101.

10-110-142 Paralegal Internship 3 credits

Students gain practical experience working in a legal environment under the supervision of an attorney or other qualified professional for a minimum of 140 hours and concurrent enrollment in: 10-110-105.

10-110-160 Employment Law – Paralegal 3 credits

Employment Law covers the analysis of federal and state laws governing employment relationships, job discrimination, sexual harassment, workplace privacy, labor standards, and human resource management. Prerequisite: 10-110-101.

10-110-168 Criminal Law 1 3 credits

Provides an introduction to substantive and procedural criminal law emphasizing the elemental analysis of criminal statutes, the drafting of prosecutorial documents, and the Constitutional rights of defendants. Prerequisite: 10-110-101.

10-110-169 Criminal Law 2 3 credits

This course builds on the foundation developed in Criminal Law 1, requiring students to apply previously learned 4th, 5th, and 6th Amendment and other constitutional law principles to the unique facts of three mock trial cases. Heavy emphasis is placed upon generating “real world work product” tied to trial preparation, with particular focus on trial-related discovery issues and motion practice. Ethical and effective witness interviewing techniques/practices and settlement preparation are also covered. Prerequisite: 10-110-168.

10-110-170 Intellectual Property Law 3 credits

This course introduces paralegal students to the law of trademarks, copyrights, and patents. It covers the basic requirements for protecting these forms of intellectual property; identifies the sources of authority that govern intellectual property law; explains the types of rights in intellectual property that are available; introduces the concepts of infringement and defenses to infringement claims; and surveys of the types of remedies used to compensate an owner for infringement. Course is restricted to students admitted to the following programs(s): 10-110-1 Paralegal or 90-110-1, Paralegal Post-baccalaureate. Prerequisite: 10-110-101.

10-110-171 Law and Contemporary Problem 3 credits

This legal specialty course addresses topic areas of current interest in the legal community and will vary by semester. Prerequisite: 10-110-101.

10-110-172 Environmental Law 3 credits

This course introduces students to the study of environmental law, with emphasis on the role of the paralegal in this field. It surveys major environmental acts in the United States, such as the Clean Air Act, Clean Water Act, and other legislation. This course also presents an overview of the treatment of issues concerning the environment from a legal perspective. Prerequisite: 10-110-101.

10-110-173 Contract Law in a Global Economy 3 credits

This survey course explores the common law of contracts, contracts of sale under Article 2 of the UCC, and the legal issues and risks that affect business transactions in the global marketplace. Prerequisite: 10-110-101.

10-110-175 Orientation to Paralegal Profession 1 credit

This course will (i) introduce students to the paralegal profession; (ii) acquaint students with the classes offered in the paralegal program; (iii) provide students with tools for success in the paralegal program and the paralegal career field; (iv) administer the required paralegal program entrance keyboarding test; and (v) advise and enroll students in their fall semester courses. Restricted to students admitted to the following program(s): 10-110-1 Paralegal or 90-110-1 Paralegal Post-baccalaureate.

10-110-176 Career Building Techniques - Paralegal 2 credits

This course will focus on internship and career strategies; effective portfolios; resumes and cover letters; the internship experience; interview techniques; finding an internship site including sites for students interested in receiving the Program’s International Certificate; job hunting resources and alternative career paths; strategies for success in the work place; advancing in your career; and getting your next job. Prerequisites or concurrent enrollment: 10-110-101 and 10-110-104.

Selectives: Choose nine credits from this list:

- 10-110-103 Civil Litigation 2 3 credits
- 10-110-106 Family Law* 3 credits
- 10-110-107 Legal Aspects of Business Organizations 3 credits
- 10-110-110 Real Estate Law** 3 credits
- 10-110-114 Administration of Estates* 3 credits
- 10-110-115 Administrative Law** 3 credits
- 10-110-122 Debtor and Creditor Relations* 3 credits
- 10-110-160 Employment Law-Paralegal** 3 credits
- 10-110-168 Criminal Law 1 3 credits
- 10-110-169 Criminal Law-2** 3 credits
- 10-110-170 Intellectual Property Law** 3 credits
- 10-110-171 Law & Contemporary Problems* 3 credits
- 10-110-172 Environmental Law* 3 credits
- 10-110-173 Contract Law in a Global Economy** 3 credits

*Course typically offered in the fall semester only

**Course typically offered in the spring semester only

Career Potential:

- Law Office Paralegal
- Public/Government Paralegal
- Corporation Paralegal
- Trust Department Paralegal
- Real Estate Paralegal
- Law Office Manager
- Contract Administrator

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Paralegal Post-baccalaureate

Program Number: 31-110-1

Technical Diploma

Business and Marketing Program Cluster

School of Business and Applied Arts

Program offered at Madison Campuses

For information call:

(608) 246-6003 or (800) 322-6282 Ext. 6003

About the Program

The Paralegal Post-baccalaureate program prepares students for highly responsible entry-level positions as paralegals or legal assistants. Students take courses that provide them with the basic competencies to begin a career as a paralegal or legal assistant. The Paralegal Post-baccalaureate Diploma is appropriate for those persons who already have earned a bachelor's degree. Students who have not earned a bachelor's degree should apply to the Paralegal Associate Degree Program.

A paralegal or legal assistant is a person qualified by education, training, or work experience who is employed or retained by a lawyer, law office, corporation, governmental agency or other entity to perform specifically-designated substantive legal work for which a lawyer is responsible. Paralegals are not authorized to practice law.

Admissions Requirements

To review admissions program requirements and application processing dates visit the programs website at:

<http://madisoncollege.edu/program-info/paralegal-post-baccalaureate>.

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

		Hrs/week	
		Credits	Lec-Lab
Prior to start of first semester			
10-110-175	Orientation to Paralegal Profession.....	1.....	1-0
First Semester			
10-110-101	Introduction to Paralegalism and Legal Ethics	3	3-0
10-110-102	Civil Litigation 1.....	3.....	3-0
10-110-104	Legal Research.....	3.....	3-0
10-110-141	Computer Applications - Legal	3.....	2-2
10-110-176	Career Building Techniques-Paralegal	2	2-0
Second Semester			
10-110-105	Legal Writing.....	3.....	3-0
10-110-142	Paralegal Internship.....	3.....	3-0
	Selectives	9	E
	Semester Total	15	

Program Courses

10-110-101 Introduction to Paralegalism and Legal Ethics 3 credits

Provides students with an introduction to the paralegal profession, the American legal system, legal ethics, legal terminology, research, and the common law of torts. Restricted to students admitted to the following program(s): 10-110-1 Paralegal or 90-110-1, and Paralegal Post-baccalaureate. Prerequisite: 10-110-175.

10-110-102 Civil Litigation 1 3 credits

Outlines the initial stages of civil litigation, including initial client contact, investigation, pleadings and motions. Prerequisite or concurrent enrollment: 10-110-101.

10-110-103 Civil Litigation 2 3 credits

Covers the civil litigation procedure during discovery, trial, and appeal. Prerequisite: 10-110-102.

10-110-104 Legal Research 3 credits

Provides students with an application of legal research techniques, using traditional and computer-assisted resources. Involves extensive hands-on legal research exercises and document preparation exercises. Prerequisite or concurrent enrollment: 10-110-101.

10-110-105 Legal Writing 3 credits

Concentrates on the skills required for legal writing and analysis. Prerequisite: 10-110-104.

10-110-107 Legal Aspects of Business Organizations 3 credits

Acquaints students with legal aspects of the formation, operation, and dissolution of the five principal types of business organizations utilized in the United States. Prerequisite: 10-110-101.

10-110-110 Real Estate Law 3 credits

Includes drafting real estate descriptions, listing contracts, offers to purchase, deeds, land contracts, mortgages, foreclosure pleadings, transfer tax returns, and leases. Prerequisite: 10-110-101.

10-110-114 Administration of Estates 3 credits

Basic legal concepts surrounding powers of attorney, wills, trusts, and intestacy, including probate forms and procedures as well as inheritance tax returns are covered in the Administration of Estates class. Prerequisite: 10-110-101.

10-110-115 Administrative Law 3 credits

Administrative Law is designed to acquaint students with the process by which government agencies make and administer rules and regulations. Prerequisite: 10-110-101.

10-110-122 Debtor and Creditor Relations 3 credits

Considers pre and post-judgment collection rights, creditor protection devices, State and Federal consumer protection laws, and Federal bankruptcy laws. Prerequisite: 10-110-101.

10-110-141 Computer Applications-Legal 3 credits

Students develop technology skills using various law office computer applications. Prerequisite or concurrent enrollment: 10-110-101.

10-110-142 Paralegal Internship 3 credits

Students gain practical experience working in a legal environment under the supervision of an attorney or other qualified professional for a minimum of 140 hours and concurrent enrollment in: 10-110-105.

10-110-160 Employment Law – Paralegal 3 credits

Employment Law covers the analysis of federal and state laws governing employment relationships, job discrimination, sexual harassment, workplace privacy, labor standards, and human resource management. Prerequisite: 10-110-101.

10-110-168 Criminal Law 1 3 credits

Provides an introduction to substantive and procedural criminal law emphasizing the elemental analysis of criminal statutes, the drafting of prosecutorial documents, and the Constitutional rights of defendants. Prerequisite: 10-110-101.

10-110-169 Criminal Law 2 3 cred

This course builds on the foundation developed in Criminal Law 1, requiring students to apply previously learned 4th, 5th, and 6th Amendment and other constitutional law principles to the unique facts of three mock trial cases. Heavy emphasis is placed upon generating "real world work product" tied to trial preparation, with particular focus on trial-related discovery issues and motion practice. Ethical and effective witness interviewing techniques/practices and settlement preparation are also covered. Prerequisite: 10-110-168.

10-110-170 Intellectual Property Law 3 credits

This course introduces paralegal students to the law of trademarks, copyrights, and patents. It covers the basic requirements for protecting these forms of intellectual property; identifies the sources of authority that govern intellectual property law; explains the types of rights in intellectual property that are available; introduces the concepts of infringement and defenses to infringement claims; and surveys of the types of remedies used to compensate an owner for infringement. Course is restricted to students admitted to the following programs(s): 10-110-1 Paralegal or 90-110-1, Paralegal Post-baccalaureate. Prerequisite: 10-110-101.

10-110-171 Law and Contemporary Problem 3 credits

This legal specialty course addresses topic areas of current interest in the legal community and will vary by semester. Prerequisite: 10-110-101.

10-110-172 Environmental Law 3 credits

This course introduces students to the study of environmental law, with emphasis on the role of the paralegal in this field. It surveys major environmental acts in the United States, such as the Clean Air Act, Clean Water Act, and other legislation. This course also presents an overview of the treatment of issues concerning the environment from a legal perspective. Prerequisite: 10-110-101.

10-110-173 Contract Law in a Global Economy 3 credits

This survey course explores the common law of contracts, contracts of sale under Article 2 of the UCC, and the legal issues and risks that affect business transactions in the global marketplace. Prerequisite: 10-110-101.

10-110-175 Orientation to Paralegal Profession 1 credit

This course will (i) introduce students to the paralegal profession; (ii) acquaint students with the classes offered in the paralegal program; (iii) provide students with tools for success in the paralegal program and the paralegal career field; (iv) administer the required paralegal program entrance keyboarding test; and (v) advise and enroll students in their fall semester courses. Restricted to students admitted to the following program(s): 10-110-1 Paralegal or 90-110-1 Paralegal Post-baccalaureate.

10-110-176 Career Building Techniques - Paralegal 2 credits

This course will focus on internship and career strategies; effective portfolios; resumes and cover letters; the internship experience; interview techniques; finding an internship site including sites for students interested in receiving the Program's International Certificate; job hunting resources and alternative career paths; strategies for success in the work place; advancing in your career; and getting your next job. Prerequisites or concurrent enrollment: 10-110-101 and 10-110-104.

Selectives: Choose nine credits from this list:

- 10-110-103 Civil Litigation 2 3 credits
- 10-110-106 Family Law* 3 credits
- 10-110-107 Legal Aspects of Business Organizations 3 credits
- 10-110-110 Real Estate Law** 3 credits
- 10-110-114 Administration of Estates* 3 credits
- 10-110-115 Administrative Law** 3 credits
- 10-110-122 Debtor and Creditor Relations* 3 credits
- 10-110-160 Employment Law-Paralegal** 3 credits
- 10-110-168 Criminal Law 1 3 credits
- 10-110-169 Criminal Law-2** 3 credits
- 10-110-170 Intellectual Property Law** 3 credits
- 10-110-171 Law & Contemporary Problems* 3 credits
- 10-110-172 Environmental Law* 3 credits
- 10-110-173 Contract Law in a Global Economy** 3 credits

*Course typically offered in the fall semester only

**Course typically offered in the spring semester only

Career Potential:

- Law Office Paralegal
- Public/Government Paralegal
- Corporation Paralegal
- Trust Department Paralegal
- Real Estate Paralegal
- Law Office Manager
- Contract Administrator

More detailed and updated information on this program may be available at: madisoncollege.edu. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

Madison Area Technical College provides equal opportunity in education and employment.

Paramedic

Program Number: 31-531-3

Technical Diploma

Emergency Medical Services Program Cluster

School of Human and Protective Services

Program offered at Truax Campus

For information call:

(608) 828-7963 or (800) 322-6282 Ext. 7963

About the Program

The Paramedic Technical Diploma provides the educational background and training for entry level careers working in Emergency Medical Services, hospitals, private ambulance services and community para-medicine.

Occupational experience and continuing education provide the paramedic with opportunities to serve as EMS managers and instructors. The embedded technical diploma provides students and employers the opportunity to secure work ("job out") and begin career employment serving local communities, hospitals, and other institutions or industries requiring the skills of paramedic, while continuing their education later to complete the associate degree for career advancement.

The Madison College Paramedic Program is accredited by the Commission on Accreditation of Allied Health Education Programs (www.caahep.org) upon the recommendation of the Committee on Accreditation of Educational Programs for the Emergency Medical Services Professions (CoAEMSP).

To contact CAAHEP:

Commission on Accreditation of Allied Health Education Programs

1361 Park Street

Clearwater, FL 33756

727-210-2350

www.caahep.org

To contact CoAEMSP:

8301 Lakeview Parkway, Suite 111-312

Rowlett TX 75088

(214) 703-8445

FAX (214) 703-8992

www.coaemsp.org

Admission Requirements

To review program admission requirements and application processing dates, visit the program's website at: <http://madisoncollege.edu/program-info/paramedic>.

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

		Hrs/week	
		Credits	Lec-Lab
First Semester			
10-531-911	EMS Fundamental.....	2	2-0
10-531-912	Paramedic Medical Principles	4	4-0
10-531-913	Advanced Patient Assessment Principles.....	3	2-2
10-531-914	Advanced Pre-hospital Pharmacology	3	2-2
10-531-915	Paramedic Respiratory Management.....	2	1-2
10-531-916	Paramedic Cardiology	4	3-2
10-531-917	Paramedic Clinical/Field 1	3	0-12
10-531-918	Advanced Emergency Resuscitation.....	1	0-2
Total		22	
Second Semester			
10-531-919	Paramedic Medical Emergencies.....	4	4-0
10-531-920	Paramedic Trauma	3	2-2
10-531-921	Special Patient Populations.....	3	2-2
10-531-922	EMS Operations	1	1-0
10-531-923	Paramedic Capstone	1	0-2
10-531-924	Paramedic Clinical/Field 2.....	4	0-16
Total		16	



Program Courses

10-531-911 EMS Fundamental 2 credits

This course provides the paramedic student with comprehensive knowledge of EMS systems, safety, well-being, legal issues, and ethical issues, with the intended outcome of improving the health of EMS personnel, patients, and the community. The students will obtain fundamental knowledge of public health principles and epidemiology as related to public health emergencies, health promotion, and illness/injury prevention. Introducing students to comprehensive anatomical and medical terminology and abbreviations will foster the development of effective written and oral communications with colleagues and other health care professionals. Prerequisites: Healthcare Provider CPR course and Emergency Medical Technician, 10-531-101.

10-531-912 Paramedic Medical Principles 4 credits

This course addresses the complex depth of anatomy, physiology, and pathophysiology of major human systems while also introducing the paramedic students to the topics of shock, immunology, and bleeding.

10-531-913 Advanced Patient Assessment Principles 3 credits

This course teaches the paramedic student to integrate scene and patient assessment findings with knowledge of epidemiology and pathophysiology to form a field impression. By utilizing a structured and organized assessment process with knowledge of anatomy, physiology, pathophysiology, life span development, and changes that occur to the human body with time, the students will learn to develop a list of differential diagnoses through clinical reasoning, along with the ability to modify the assessment as necessary to formulate a treatment plan for their patients.

10-531-914 Advanced Pre-hospital Pharmacology 3 credits

This course provides the paramedic student with the comprehensive knowledge of pharmacology required to formulate and administer a pharmacological treatment plan intended to mitigate emergencies and improve the overall health of the patient.

10-531-915 Paramedic Respiratory Management 2 credits

This course teaches the paramedic student to integrate complex knowledge of anatomy, physiology, and pathophysiology into the assessment to develop and implement a treatment plan with the goal of assuring a patient airway, adequate mechanical ventilation, and respiration for patients of all ages. Specific knowledge pertaining to the respiratory system is also provided to ensure the student is prepared to formulate a field impression and implement a comprehensive treatment plan for a patient with a respiratory complaint.

10-531-916 Paramedic Cardiology 4 credits

This course teaches the paramedic student to integrate assessment findings with principles of cardiovascular anatomy, physiology, epidemiology, and pathophysiology to formulate a field impression and implement a comprehensive treatment plan for a patient with a cardiovascular complaint. Prerequisites include all courses in the first semester. Co-requisites: 10-531-372, 10-531-373, 10-531-376, 10-531-380, and 10-531-381.

10-531-917 Paramedic Clinical/Field 1 3 credits

This course provides the student with the opportunity to enhance his or her learning through the practice of paramedicine in field and health care environment experiences with actual patients under the supervision of instructors or approved preceptors. Students may also have the opportunity to participate in formal high-fidelity human patient simulator experiences as a part of this course.

10-531-918 Advanced Emergency Resuscitation 1 credit

By teaching Advanced Cardiac Life Support (ACLS) and Pediatric Advanced Life Support (PALS) methodologies and protocols, this course prepares the paramedic student in the integration of comprehensive knowledge of causes and pathophysiology into the management of shock, respiratory failure, respiratory arrest, cardiac arrest, and peri-arrest states with an emphasis on early intervention to prevent respiratory and/or cardiac arrest if possible. Prerequisites: Healthcare Provider CPR course and Emergency Medical Technician-Basic, 10-531-101. Co-requisites: 10-531-370, 10-531-371, 10-531-374, 10-531-378, and 10-531-379.

10-531-919 Paramedic Medical Emergencies 4 credits

This course teaches the paramedic student to integrate assessment findings with principles of anatomy, physiology, epidemiology, and pathophysiology to formulate a field impression and implement a comprehensive treatment plan for a patient with a medical complaint.

10-531-920 Paramedic Trauma 3 credits

This course teaches the paramedic student to integrate assessment findings with principles of anatomy, physiology, epidemiology, and pathophysiology to formulate a field impression and implement a comprehensive treatment plan for an acutely injured patient.

10-531-921 Special Patient Populations 3 credits

This course teaches the paramedic student to integrate assessment findings with principles of anatomy, physiology, epidemiology, and pathophysiology to formulate a field impression and implement a comprehensive treatment plan for patients with special needs. Gynecological emergencies, along with special considerations in trauma are also included within this course.

10-531-922 EMS Operations 1 credit

This course provides the paramedic student with the knowledge of operational roles and responsibilities to ensure patient, public, and EMS personnel safety.

10-531-923 Paramedic Capstone 1 credit

This course provides the student with a final opportunity to incorporate their cognitive knowledge and psychomotor skills through labs and scenario-based practice and evaluations prior to taking the National Registry written and practical examinations. Technical skills attainment (TSA) for each student will be compiled and/or documented within this course as required by the DHS-approved paramedic curriculum.

10-531-924 Paramedic Clinical/Field 2 4 credits

This course provides the student with the opportunity to enhance his or her learning through the practice of paramedicine in field and health care environment experiences with actual patients under the supervision of instructors or approved preceptors. Students may also have the opportunity to participate in formal high-fidelity human patient simulator experiences as a part of this course. Successful completion of this course requires the student to meet all clinical and field competency requirements at the paramedic level as defined by WI DHS EMS.

Career Potential:

With additional education and/or work experience, graduates may find employment as:

- Emergency Room Technician
- Firefighter
- EKG Technician
- Paramedic
- Medical Laboratory Technician
- Home Health Aide
- Medical Assistant
- Registered Nurse
- Respiratory Therapist
- Physician's Assistant

More detailed and updated information on this program may be available at: madisoncollege.edu. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

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Rev: 05/15

Paramedic Technician

Program Number: 10-531-1

Associate Degree Program

Emergency Medical Services Program Cluster

School of Human and Protective Services

Program offered at Truax Campus

For information call:

(608) 246-5250 or (800) 322-6282 ext. 5250

About the Program

This curriculum stresses the integration of knowledge and skills required to competently perform pre-hospital advanced life support. Graduates are eligible for national certification and Wisconsin licensure as an EMT-Paramedic.

Unique Requirements for Admission

Admission Requirements

To review program admission program requirements and application processing dates, visit the program's website at: <http://madisoncollege.edu/program-info/paramedic-technician>.

Unique Requirements for Graduation

Students must achieve at least a 2.0 (C) grade in all program core courses and an overall 2.0 (C) grade point average.

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

FIRST YEAR

First Semester		Credits	Hrs/week Lec-Lab
10-801-195	Written Communication OR.....	3	3-0
20-801-201	English 1*.....	(3)	(3-0)
20-806-207	Anatomy and Physiology 1*.....	4	3-2
10-809-122	Intro to American Government OR.....	3	3-0
20-809-221	American National Government*.....	(3)	(3-0)
10-809-199	Psychology of Human Relations OR.....	3	3-0
20-809-231	Introduction to Psychology*.....	(3)	(3-0)
Semester Total		13	

Second Semester

10-801-198	Speech OR.....	3	3-0
20-810-105	Small Group and Interpersonal Communication*.....	(3)	(3-0)
10-804-107	College Mathematics OR.....	3	3-0
20-804-201	Intermediate Algebra*.....	(4)	4-0
20-806-208	Anatomy and Physiology 2*.....	4	3-2
10-809-172	Introduction to Diversity Studies OR.....	3	3-0
20-809-252	Race and Ethnicity in the U.S.*.....	(3)	(3-0)
Semester Total		13	

SECOND YEAR

First Semester

10-531-911	EMS Fundamentals.....	2	6-0
10-531-912	Paramedic Medical Principles.....	4	6-0
10-531-913	Advanced Patient Assessment Principles.....	3	6-0
10-531-914	Advanced Pre-hospital Pharmacology.....	3	4-2
10-531-915	Paramedic Respiratory Management.....	2	4-2
10-531-916	Paramedic Cardiology.....	4	4-2
10-531-917	Paramedic Clinical/Field 1.....	3	4-2
10-531-918	Advanced Emergency Resuscitation.....	1	0-6
Semester Total		22	

Second Semester

10-531-919	Paramedic Medical Emergencies.....	4	6-0
10-531-920	Paramedic Trauma.....	3	5-1
10-531-921	Special Patient Populations.....	3	4-2
10-531-922	EMS Operations.....	1	4-2
10-531-923	Paramedic Capstone.....	1	6-0
10-531-924	Paramedic Clinical/Field 2.....	4	0-6
Semester Total		16	

*College transfer equivalent courses.

Note: Students are placed in English or mathematics courses based on their scores on the COMPASS or ASSET test or on completion of the appropriate prerequisite/s.

Note: A copy of the essential functions necessary to successfully complete the program of study is available upon request from the school office.

Program Courses

10-531-911 EMS Fundamentals 2 credits

This course provides the paramedic student with comprehensive knowledge of EMS systems, safety, well-being, legal issues, and ethical issues, with the intended outcome of improving the health of EMS personnel, patients, and the community. The students will obtain fundamental knowledge of public health principles and epidemiology as related to public health emergencies, health promotion, and illness/injury prevention. Introducing students to comprehensive anatomical and medical terminology and abbreviations will foster the development of effective written and oral communications with colleagues and other health care professionals. Prerequisites: 10-531-101, and COMPASS reading score of 80 or higher, or a grade of C or better in College Reading Strategies, 10-808-101.

10-531-912 Paramedic Medical Principles 4 credits

This course addresses the complex depth of anatomy, physiology, and pathophysiology of major human systems while also introducing the paramedic students to the topics of shock, immunology, and bleeding.

10-531-913 Advanced Patient Assessment Principles 3 credits

This course teaches the paramedic student to integrate scene and patient assessment findings with knowledge of epidemiology and pathophysiology to form a field impression. By utilizing a structured and organized assessment process with knowledge of anatomy, physiology, pathophysiology, life span development, and changes that occur to the human body with time, the students will learn to develop a list of differential diagnoses through clinical reasoning, along with the ability to modify the assessment as necessary to formulate a treatment plan for their patients.

10-531-914 Advanced Pre-hospital Pharmacology 3 credits

This course provides the paramedic student with the comprehensive knowledge of pharmacology required to formulate and administer a pharmacological treatment plan intended to mitigate emergencies and improve the overall health of the patient.

10-531-915 Paramedic Respiratory Management 2 credits

This course teaches the paramedic student to integrate complex knowledge of anatomy, physiology, and pathophysiology into the assessment to develop and implement a treatment plan with the goal of assuring a patient airway, adequate mechanical ventilation, and respiration for patients of all ages. Specific knowledge pertaining to the respiratory system is also provided to ensure the student is prepared to formulate a field impression and implement a comprehensive treatment plan for a patient with a respiratory complaint.

10-531-916 Paramedic Cardiology 4 credits

This course teaches the paramedic student to integrate assessment findings with principles of cardiovascular anatomy, physiology, epidemiology, and pathophysiology to formulate a field impression and implement a comprehensive treatment plan for a patient with a cardiovascular complaint.

10-531-917 Paramedic Clinical/Field 1 3 credits

This course provides the student with the opportunity to enhance his or her learning through the practice of paramedicine in field and health care environment experiences with actual patients under the supervision of instructors or approved preceptors. Students may also have the opportunity to participate in formal high-fidelity human patient simulator experiences as a part of this course.

10-531-918 Advanced Emergency Resuscitation 1 credit

By teaching Advanced Cardiac Life Support (ACLS) and Pediatric Advanced Life Support (PALS) methodologies and protocols, this course prepares the paramedic student in the integration of comprehensive knowledge of causes and pathophysiology into the management of shock, respiratory failure, respiratory arrest, cardiac arrest, and peri-arrest states with an emphasis on early intervention to prevent respiratory and/or cardiac arrest if possible.

10-531-919 Paramedic Medical Emergencies 4 credits

This course teaches the paramedic student to integrate assessment findings with principles of anatomy, physiology, epidemiology, and pathophysiology to formulate a field impression and implement a comprehensive treatment plan for a patient with a medical complaint.

10-531-920 Paramedic Trauma 3 credits

This course teaches the paramedic student to integrate assessment findings with principles of anatomy, physiology, epidemiology, and pathophysiology to formulate a field impression and implement a comprehensive treatment plan for an acutely injured patient.

10-531-921 Special Patient Populations 3 credits

This course teaches the paramedic student to integrate assessment findings with principles of anatomy, physiology, epidemiology, and pathophysiology to formulate a field impression and implement a comprehensive treatment plan for patients with special needs. Gynecological emergencies, along with special considerations in trauma are also included within this course.

10-531-922 EMS Operations 1 credit

This course provides the paramedic student with the knowledge of operational roles and responsibilities to ensure patient, public, and EMS personnel safety.

10-531-923 Paramedic Capstone 1 credit

This course provides the student with a final opportunity to incorporate their cognitive knowledge and psychomotor skills through labs and scenario-based practice and evaluations prior to taking the National Registry written and practical examinations. Technical skills attainment (TSA) for each student will be compiled and/or documented within this course as required by the DHS-approved paramedic curriculum.

10-531-924 Paramedic Clinical/Field 2 4 credits

This course provides the student with the opportunity to enhance his or her learning through the practice of paramedicine in field and health care environment experiences with actual patients under the supervision of instructors or approved preceptors. Students may also have the opportunity to participate in formal high-fidelity human patient simulator experiences as a part of this course. Successful completion of this course requires the student to meet all clinical and field competency requirements at the paramedic level as defined by WI DHS EMS.

Career Potential:

With additional education and/or work experience, graduates may find employment as:

- Emergency Room Technician
- Firefighter
- EKG Technician
- Paramedic
- Medical Laboratory Technician
- Home Health Aide
- Medical Assistant
- Registered Nurse
- Respiratory Therapist
- Physician's Assistant

More detailed and updated information on this program may be available at: <http://www.madisoncollege.edu/>. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

Madison Area Technical College provides equal opportunity in education and employment.

Photography

Program Number: 10-203-1

Associate in Applied Arts Degree

Applied Arts Program Cluster

School of Business and Applied Arts

Program offered at Madison Campuses

For information call:

(608) 246-6003 or (800) 322-6282 Ext. 6003

About the Program

The Photography Program is designed to equip the graduate with a solid foundation in commercial photography. Our courses will help you develop an individual style, give you hands on experience with the latest digital technologies and business skills necessary to succeed. The program is presented through a combination of classroom lectures and demonstrations, practical hands-on assignment work in studios and labs and real-world experience through internships and assignments that emulate contract work for clients. Graduates will be prepared to find jobs as assistants in commercial and portrait studios, digital technicians, staff members in corporate or government photography departments. Students will graduate with a professional portfolio showing prospective employers skills and capabilities learned during coursework in the photography program.

Admissions Requirements

To review admissions program requirements and application processing dates visit the programs website at: <http://madisoncollege.edu/program-info/photography>.

Program Courses

10-203-105 Photographic Composition 2 credits
A survey of composition as an important tool of the photographer that helps to establish purpose and meaning to visual statements. Includes an introduction to the history of photography and the field of professional photography through the work of some noted photographers. Written and photographic assignments are required.

10-203-107 Studio Photography 1 3 credits
Basic theory and practical application of the fundamentals of photography. Students will learn the basics of DSLR cameras, lenses, the light meter, digital exposure and capture, basic studio lighting with hot lights and studio equipment handling. Co-requisite: 10-203-120

10-203-108 Studio Photography 2 3 credits
Continuation of Studio Photography 1 with emphasis on advanced studio strobe lighting techniques, and metering and exposure for extreme scenes. Students will also learn the differences between professional digital backs and DSLR systems through hands-on experience with each format. Prerequisites: 10-203-107, 10-203-120, and 10-206-109.

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

FIRST YEAR		Credits	Hrs/week Lec-Lab
First Semester			
10-203-105	Photo Composition	2	2-0
10-203-107	Studio Photo 1	3	3-3
10-203-120	Lighting Techniques.....	2	2-2
10-206-109	Intro to Electronic Design.....	2	2-2
10-801-195	Written Communication	3	3-0
10-809-195	Economics	3	3-0
10-809-199	Psychology of Human Relations.....	3	3-0
Semester Total		18	

Second Semester		Credits	Hrs/week Lec-Lab
10-203-108	Studio Photo 2		
10-203-141	Color Photo 1	3	3-3
10-203-173	Photojournalism	2	2-2
10-206-115	Digital Media for Photographers	3	3-3
10-801-196	Oral/Interpersonal Communication.....	3	3-0
10-809-197	Contemporary American Society.....	3	3-0
Semester Total		17	

SECOND YEAR		Credits	Hrs/week Lec-Lab
First Semester			
10-203-121	Commercial Photo 1	3	3-3
10-203-124	Portrait Photography.....	2	2-2
10-203-142	Color Photo 2	3	3-3
10-203-134	Electronic Imaging	3	3-3
10-804-107	College Mathematics	3	3-0
20-809-276	Business Ethics*.....	3	3-0
Semester Total		17	

Second Semester		Credits	Hrs/week Lec-Lab
10-203-109	Studio Photo 3		
10-203-125	Business of Photography.....	1	2-0
10-203-126	Advanced Digital Studio Portrait.....	2	2-2
10-203-176	Photo Communication	2	2-2
10-203-185	Portfolio Preparation	2	2-2
10-203-174	Photography on Location.....	3	3-3
	Elective.....	2	E
Semester Total		15	

Note: Students are placed in English or mathematics courses based on their scores on the COMPASS or ASSET test or on completion of the appropriate prerequisite/s.

*Other course options are available. See program advisor for information.



Program Courses (continued)

10-203-109 Studio Photography 3 3 credits

This is an advanced level studio course offering students the opportunity to hone their skills. The course consists of 3 projects created by the instructor and 3 created by the student. Student may choose to create images that express their individual areas of interest. Images that are created in this course may be used in final portfolios. Prerequisites: 10-203-108 and 10-203-142

10-203-120 Lighting Techniques 2 credits

Introduction to the laws of light, learning the qualities of natural and artificial light sources. Students will acquire specific skills in these areas: hard and soft light; lighting direction; incident and reflective exposure determination; lighting for shape and texture; lighting glassware; lighting reflective subjects; basic lighting for simple portraiture; and operation of professional lighting equipment in the studio. Co-requisite: 10-203-107.

10-203-121 Commercial Photography 1 3 credits

Professional digital photography with an emphasis on the production of photographic illustration of high quality for use in advertising, promotion and print ad. It combines lectures and demonstrations along with practical experience. Students will polish their photographic skills while developing additional skills in commercial photography. Prerequisites: 10-203-108 and 10-203-141.

10-203-124 Portrait Photography 2 credits

Theory and principles of professional digital portrait photography. Studio and environmental portraiture. Emphasis on lighting, posing and character analysis. Prerequisites: 10-203-108 and 10-203-141 or consent of instructor.

10-203-125 Business of Photography 1 credit

This course is designed to help students understand the basic principles of creating a photo business. Throughout the semester students will research and create their own business plans. Areas such as sales revenue forecast, marketing, overhead and capital spending plan will be explored. Prerequisite: must be in final semester of required photo courses for the Photography Program.

10-203-126 Advanced Digital Studio Portrait 2 credits

Develops advanced studio skills utilizing high-end digital capture equipment for photo and prepress output in a variety of professional photographic venues. Emphasis on special projects and cooperative shooting situations with other programs using a wide variety of tools, materials and techniques. Prerequisites: 10-203-108, 10-203-121, 10-203-124, 10-203-142, and 10-206-134.

10-203-134 Electronic Imaging 3 credits

This course explores advanced computer skills, issues and skills unique to electronic image handling, utilization of image enhancement software, operation of desktop scanners as input devices, preparation of image for the World Wide Web, and legal and ethical issues regarding electronic image handling and manipulation. Prerequisites: 10-206-109, 10-203-108, and 10-203-141.

10-203-141 Color Photography 1 3 credits

Basic introduction to additive and subtractive color theory using digital color principles. Digital image capture, manipulation and output will be covered, along with basic color management principles and techniques. Prerequisite: 10-203-107 and 10-206-109 or consent of instructor.

10-203-142 Color Photography 2 3 credits

Uses hands-on exercises and assignments, requiring students to apply basic principles and techniques of digital color workflow to real-world imaging situations. Students will also learn and apply advanced principles and techniques of digital color workflow, and create their first significant digital color print portfolio. Prerequisites: 10-203-141 and 10-203-108.

10-203-173 Photojournalism 2 credits

Photography for publication with the visual image used to relate events, ideas or circumstances. Students are exposed to techniques in which news stories can be communicated through visual images in print. Prerequisite: 10-203-107 or consent of instructor.

10-203-174 Photography on Location 3 credits

From portraits and fashion to architecture and product, working on location presents unique challenges and involves a broad base of knowledge and resources. This class will cover a wide range of information pertaining to working on location. With a heavy focus on lighting techniques, from on camera flash to full strobe set ups and the production side of location photography. Prerequisite: 10-203-121 and 10-203-134 and must be in the final semester of required photo courses for the Photography Program.

10-203-176 Photo Communication 2 credits

Exploratory in nature, with emphasis on personal projects and the development of an individual style and identity. Students will be required to produce their own web site, self-promotion pieces and a personal project such as a book of photographs. Prerequisites: 10-203-108, 10-206-134, and 10-203-142.

10-203-185 Portfolio Preparation 2 credits

This course teaches students how to assemble a professional photographic portfolio, showing prospective employers skills and capabilities learned during coursework in the Photography Program. Learning is enhanced via visits to the class by local photo professionals, who show their work to students and review student work. The Portfolio Show highlights the semester's efforts. Departmental approval of the finished portfolio is required. Prerequisite: must be in the final semester of required photo courses for the Photography Program.

10-206-109 Intro to Electronic Design 2 credits

Provides students with a working knowledge of the technical part of digital photography workflow, including the basic principles of working with Adobe Photoshop. Co-requisite: 10-203-107 and 10-203-120.

10-206-115 Digital Media for Photographers 3 credits

This course will explore the different kinds of digital media available to provide the photography student with additional tools and skills. The student will learn basic video camera techniques, video editing, sound capturing, DVD preparation and other creative software programs. This course is meant to prepare photo students for potential business applications that integrate sound, images and video. Prerequisites: 10-203-107 and 10-203-120.

Recommended Electives

10-203-129 Prof Nature/Conservation Photo 2 credits

10-203-131 Digital Photo 2 2 credits

10-203-199 Photography Internship 1 credit

Career Potential:

- Architectural Photographer
- Industrial Photographer
- Photo Processing Lab Technician
- Corporate Staff Photographer
- Government Staff Photographer
- Commercial Studio Assistant
- Portrait Studio Assistant
- Film Production Crew
- Television Production Crew
- Photojournalism
- Sales
- Professional Photographer

More detailed and updated information on this program may be available at: madisoncollege.edu. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

Madison Area Technical College provides equal opportunity in education and employment.

Rev. 04/15

Photovoltaics Certificate

Program Number: 90-480-1

Certificate

Applied Engineering Program Cluster

School of Applied Science, Engineering, & Technology

Program offered at Madison Campuses

For information call: (608) 246-6800
or (800) 322-6282 Ext. 6800 or (608) 246-6521

About the Certificate

The Madison College Photovoltaics Certificate is designed to provide students with the theoretical knowledge necessary for a career in renewable energy technology. Students acquire hands-on skills in troubleshooting, maintenance, installation, operation, and repair and replacement of related equipment. The certificate requires a minimum of 15 credits of coursework.

Certificate credits may be combined with additional coursework to enhance traditional diploma, degree, and transfer programs at Madison College. The credits also may be combined with additional training, job experience and/or professional examinations to qualify for certification by national renewable energy institutions.

Incumbent trade workers and technical professionals are also encouraged to investigate how a Photovoltaics Certificate may relate to their current work or business practices. Some classes are delivered in online, and/or intensive short-course formats, and some classes may be offered during evenings, weekends, winter break, spring break, and/or summer sessions.

Certificate Application Process

To review program admission requirements and application processing dates visit the programs website at: <http://madisoncollege.edu/program-info/photovoltaics>.

Unique Requirements for Completion

The certificate will be awarded upon completion of the requirements with a minimum of a 2.0 grade average and no course grade lower than a C. The certificate will be awarded when completion of all requirements is verified after the semester the last course has been completed.

Program Courses

10-140-112 Renewable Energy for the Developing World 3 credits
Students participate in a 10 day in-country service learning project in a developing world country, continuing with eight weeks of online coursework to extend their knowledge of energy production and use in the developing world.

10-414-100 DC/AC Circuits for Industry 3 credits
Study of practical DC concepts with and introduction to AC concepts. Course topics include electrical quantities and components and measurement instruments with an emphasis on DC circuits. Students analyze and construct circuits and measure voltage, current, resistance and power for both AC and DC sources. Studies principles of electricity AC components and circuits. Coverage includes combination circuits that contain Resistive Inductive and/or Capacitive properties. Emphasis on circuit troubleshooting and efficiencies. Course introduces theory and application of three-phase circuits, single phase, transformers, generators, and motors. Covers fundamentals of NEC wiring, soldering and relay ladder logic.

10-481-110 Energy Management 3 credits
The student will perform critical examination of energy consuming facilities both domestic and commercial for the purpose of identifying energy conservation opportunities In addition the student will identify various energy conservation techniques as well as equipment which can be installed to further conserve energy

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

	Credits	Hrs/week Lec-Lab
Required (Pre-requisite) Course List		
<i>Complete 1 of the following courses:</i>		
10-414-100 DC/AC Circuits for Industry OR	3	0.5-5
32-414-316 DC/AC Circuits	(3)	4-2
Core Course List		
<i>Complete (at least 8) credits from the following courses:</i>		
10-481-110 Energy Management	3	2-2
10-482-138 Introduction to Photovoltaic Technology	2	2-0
20-806-291 Introduction to Renewable Energy	3	3-0
Additional Course List		
<i>Complete additional credits from these courses to reach a total of 15 credits:</i>		
10-482-103 Photovoltaic Systems & the National Electric Code	1	1-0
10-482-135 Advanced Photovoltaic Electives	1-3	3-0
10-482-137 Photovoltaic Site Assessment	1	1-0
10-482-139 Grid-Connected Photovoltaic Design & Installation	2	2-0
10-482-140 Grid Connected Photovoltaic System Design	1	1-0
10-482-141		
10-482-142 Off Grid Photovoltaic System Design	1	1-0
10-482-143 Off Grid Photo Systems Installation Lab	1	0.5-1
10-482-149 Photovoltaic Technical Sales	1	1-0
20-806-290		
10-140-112 Renewable Energy for the Developing World	(3)	3-0
Subtotal	4	
Total	15	

Notes:
*course is available online
**8 weeks online and 2 weeks study abroad

10-482-103 Photovoltaic Systems & the National Electric Code 1 credit
Students will learn to apply the NEC rules to photovoltaic systems. Topics will include conductor sizing, overcurrent protection, grounding, maximum voltage and current calculations and other applicable rules. Students will be able to apply this knowledge to one or more photovoltaic systems.

10-482-135 Advanced Photovoltaics Electives 1-3 credits
These Advanced Photovoltaic Courses from the MREA, SEI, and Madison College can be taken with permission from project administrators.

10-482-137 Photovoltaic Site Assessment 1 credit
Students will learn how to conduct an assessment of a location for a photovoltaic system. They will learn the qualities of an ideal location, structural concerns, tools to use, proper documentation techniques, load analysis, energy production estimation, and concerns with existing electrical service. Students will also complete a photovoltaic site assessment as part of the course.

10-482-138 Introduction to Photovoltaic Technology 2 credits
Students will learn the basic concepts of photovoltaic systems, including how photovoltaic cells produce electricity, components and types of photovoltaic systems, the process of installing a photovoltaic system and whether and where to install a photovoltaic system. Students will also analyze utility bills, energy production, cost and incentives available for photovoltaic systems.



Program Courses (continued)

10-482-139 Grid-Connected Photovoltaic Design & Installation 2 credits

Students in this course will learn the principles of photovoltaic system design for photovoltaic systems connected to the utility grid. Each student will prepare a model design. Students will learn the components of PV systems, the tools and techniques to install PV systems and the safety concerns specific to photovoltaic work. Students will install one or more fully operational grid-connected PV systems.

10-482-140 Grid Connected Photovoltaic System Design 1 credit

Students will learn the principles of photovoltaic system design for photovoltaic systems connected to the utility grid. Each student will prepare a model design.

10-482-141 Grid Connected Photovoltaic Systems Installation Lab 1 credit

Students will install one or more fully operational grid connected photovoltaic systems.

10-482-142 Off Grid Photovoltaic System Design 1 credit

Students in this course will learn the principles of photovoltaic system design for off grid photovoltaic systems. Each student will prepare a model design.

10-482-143 Off Grid Photo Systems Installation Lab 1 credit

Students will install one or more fully operational off grid photovoltaic systems.

10-482-149 Photovoltaic Technical Sales 1 credit

Students will learn the tools and information needed to perform in a sales position for photovoltaic contractors. Students will prepare a sales document as part of the course.

20-806-290 Renewable Energy for International Development 3 credits

Renewable Energy for the Developing World provides an examination of energy and economics in developing countries with special consideration given to renewable energy sources. The course combines 8-weeks of online instruction with 10 days of travel and study abroad in Costa Rica. Students will learn to specify, design, and install renewable energy systems for the developing world. Students will install operational renewable energy systems in the field with current renewable energy equipment.

20-806-291 Introduction to Renewable Energy 3 credits

This course provides an introduction to renewable energy technology. The course is grounded in the fundamentals of energy, power, and the first and second laws of thermodynamics. A scientific approach is used to examine various energy sources, including fossil fuels, nuclear, biomass, biofuels, solar, hydro, wind, geothermal, and ocean/tidal power. Various types of energy storage technology are also examined. Science and engineering challenges are examined for each energy technology, along with economic and environmental impacts. This course is suitable for any student with an interest in renewable energy, particularly those pursuing studies in scientific, technical, and engineering fields.

32-414-316 DC/AC Circuits 3 credits

Introduces the practical DC/AC concepts including electrical quantities and components and measurement instruments for AC and DC circuits used in commercial, industrial, and sustainable energy fields. Students analyze and construct circuits and measure voltage, current, resistance and power for both AC and DC sources. Covers fundamentals of NEC wiring, soldering and relay ladder logic.

More detailed and updated information on this program may be available at: madisoncollege.edu. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

Madison College provides equal opportunity in education and employment.

Physical Therapist Assistant

Program Number: 10-524-1

Associate in Applied Science Degree

Health-Related Professions Program Cluster

School of Health Education

Program offered at Madison Campuses

For information call: (608) 246-6065 or
(800) 322-6282 Ext. 6065

About the Program

Physical therapy is a health profession with the primary purpose of promoting optimal human health and function through the application of scientific principles to prevent, identify, assess, correct, or alleviate acute or prolonged movement dysfunction. The physical therapist assistant (PTA) is a technical health care worker who carries out patient treatments under the supervision of a physical therapist. PTAs find employment in clinics, hospitals, nursing homes, rehabilitation centers, home care agencies, schools, private health and fitness centers, and other settings.

Physical therapist assistants work under the supervision of a physical therapist. Their duties include: assisting the physical therapist with treatment programs according to the plan of care; training patients in exercises and activities of daily living; conducting treatments; using special equipment; administering modalities and other treatment procedures; and reporting to the physical therapist about the patient's responses.

Admission Requirements

To review program admission requirements and application processing dates visit the programs website at:
<http://madisoncollege.edu/program-info/physical-therapist-assistant>.

Program Requirements

- 1) CPR Health Care Provider certification
- 2) Caregiver Background Check (CBC)
- 3) physical exam and a completed Health History Form on file prior to beginning clinical experiences involving direct client care.

Accreditation/Credentialing

Madison Area Technical College is accredited by the Commission on Accreditation in Physical Therapy Education (CAPTE), 1111 North Fairfax Street, Alexandria, Virginia 22314; telephone: 703-706-3245; email: accreditation@apta.org; website: www.capteonline.org

Program Completion Requirements

A grade of C or better is required for each technical studies and general education course to successfully complete the program.

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

FIRST YEAR		Credits	Hrs/week Lec-Lab
Spring Trimester			
10-806-177	General Anatomy and Physiology** OR	4	5-4
20-806-206	General Anatomy and Physiology**	(4)	(5-4)
10-801-195	Written Communication * OR	3	3-0
20-801-201	English 1*	(3)	(3-0)
10-524-138	PTA Kinesiology 1	3	2-2
10-524-139	PTA Patient Interventions	4	2-4
10-524-140	PTA Professional Issues 1	2	2-0
Trimester Total		16	
Summer Trimester			
10-801-197	Technical Reporting***	3	3-0
20-809-231	Intro to Psychology*	3	3-0
10-809-197	Contemporary American Society* OR	3	3-0
20-809-203	Intro to Sociology*	(3)	(3-0)
Trimester Total		9	
Fall Trimester			
10-801-198	Speech* OR	3	3-0
10-801-196	Oral/Interpersonal Communication* OR	(3)	(3-0)
20-810-205	Interpersonal and Small Group Communication	(3)	(3-0)
10-809-188	Development Psychology*OR	3	3-0
20-809-233	Development Psychology*	(3)	(3-0)
10-524-141	PTA Kinesiology 2	4	2-4
10-524-142	PTA Therapeutic Exercise	3	1-4
10-524-143	PTA Therapeutic Modalities	4	2-4
Trimester Total		17	
SECOND YEAR			
Spring Trimester			
10-524-144	PTA Principles of Neuromuscular Rehab (14 weeks)	4	2.16-5
10-524-145	PTA Principles of Musculoskeletal Rehab (14 weeks)	4	2.16-5
10-524-146	PTA Cardio & Integumentary Management (14 weeks)	3	2.16-2.5
10-524-147	PTA Clinical Practice 1# – 1 hour lecture for 8 weeks, then 3 weeks full time in clinic	2	1-40
Interim Course – occurs at the end of the Spring Semester, considered summer term			
10-524-148	PTA Clinical Practice 2# (4 weeks)	3	0-40
Trimester Total		16	
Summer Trimester			
10-524-149	PTA Rehab across the Lifespan (4 weeks)	2	9-0
10-524-150	PTA Professional Issues 2 (4 weeks)	2	9-0
10-524-151	PTA Clinical Practice 3# (7 weeks)	5	0-40
	Elective	3	3-0
Trimester Total		12	

* Courses which may be taken prior to entering the program. Courses may also be taken at the College-Transfer level and must have grades of C or better to transfer. A copy of the essential functions necessary to successfully complete the program of study and a copy of the program's mission statement and strategic plan is available from the website.

** Satisfactorily completion of Anatomy & Physiology prior to application or while on the waiting list qualifies for priority admission into the program on a space available basis, but has to be taken within 5 years of acceptance into the program.

*** If you have a degree in English or Journalism, or have an advanced college English writing course, speak to your advisor about the possibility to opt out of this requirement.

Full-time Clinical Work Experience

Trimesters begin in September for Fall, January for Winter, and June for Summer. Dates are not necessarily in sequence with the rest of the College. Trimesters last 15 weeks with an additional week for exams as needed. Inquire to PTA program regarding specific dates as these may vary from year to year.

Note: Students are placed in English or mathematics courses based on their scores on the COMPASS or ASSET test or on completion of the appropriate prerequisites.



Program Courses

10-524-138 PTA Kinesiology 1 3 credits

Introduces basic principles of musculoskeletal anatomy, kinematics, and clinical assessment. Students locate and identify muscles, joints, and other landmarks of the lower quadrant in addition to assessing range of motion and strength. Pre-requisite: Admission requirements for the program and 20-806-206. Co-requisites: 10-524-139 and 10-524-140.

10-524-139 PTA Patient Interventions 4 credit

An introduction to basic skills and physical therapy interventions performed by the physical therapist assistant. Pre-requisite: Admission requirements for the program and 20-806-206. Co-requisites: 10-524-138 and 10-524-140.

10-524-140 PTA Professional Issues 1 2 credit

Introduces the history and development of the physical therapy program; legal and ethical issues; the interdisciplinary health care team; and professional communication skills. Pre-requisite: Admission requirements for the program and 20-806-206. Co-requisites: 10-524-138 and 10-524-139.

10-524-141 PTA Kinesiology 2 4 credit

Applies basic principles from PTA Kinesiology 1 to the axial skeleton and upper quadrant including location and identification of muscles, joints and other landmarks. Assess range of motion and strength of the axial skeleton and upper quadrant. Integrate analysis of posture and gait. Pre-requisites: 10-524-138, 10-524-139 and 10-524-140. Co-requisites: 10-524-142 and 10-524-143.

10-524-142 PTA Therapeutic Exercise 3 credit

Provides instruction on the implementation of a variety of therapeutic exercise principles. Learners implement, educate, adapt, and assess responses to therapeutic exercises. Pre-requisites: 10-524-138, 10-524-139, and 10-524-140. Co-requisites: 10-524-141, and 10-524-143.

10-524-143 PTA Therapeutic Modalities 4 credits

Develops the knowledge and technical skills necessary to perform numerous therapeutic modalities likely to be utilized as a PTA. Pre-requisites: 10-524-138, 10-524-139, and 10-524-140. Co-requisites: 10-524-141 and 10-524-142.

10-524-144 PTA Principles of Neuromuscular Rehab 4 credits

Integrates concepts of neuromuscular pathologies, physical therapy interventions, and data collection in patient treatment. Pre-requisites: 10-524-141, 10-524-142 and 10-524-143. Co-requisites: 10-524-145, 10-524-146 and 10-524-147.

10-524-145 PTA Principles of Musculoskeletal Rehab 4 credits

Integrates concepts of musculoskeletal pathologies, physical therapy interventions, and data collection in patient treatment. Pre-requisites: 10-524-141, 10-524-142, and 10-524-143. Co-requisites: 10-524-144, 10-524-146, and 10-524-147.

10-524-146 PTA Cardio and Integumentary Management 3 credits

Integrates concepts of cardiopulmonary and integumentary pathologies, physical therapy interventions, and data collection in patient treatment. Pre-requisites: 10-524-141, 10-524-142, and 10-524-143. Co-requisites: 10-524-144, 10-524-145, and 10-524-147.

10-524-147 PTA Clinical Practice 1 2 credits

Provides a part-time clinical experience to apply foundational elements, knowledge, and technical skills pertinent to physical therapy practice. Pre-requisites: 10-524-141, 10-524-142, and 10-524-143. Co-requisites: 10-524-144, 10-524-145, and 10-524-146.

10-524-148 PTA Clinical Practice 2 3 credits

Provides another part-time clinical experience to apply foundational elements, knowledge, and technical skills required of the entry level physical therapist assistant in various practice settings. Pre-requisites: 10-524-145, 10-524-146, and 10-524-147. Co-requisites: 10-524-149, 10-524-150, and 10-524-151.

10-524-149 PTA Rehab Across the Lifespan 2 credits

A capstone course that integrates concepts of pathology, physical therapy interventions and data collection across the lifespan. In addition the PTA's role in health, wellness and prevention; reintegration, and physical therapy interventions for special patient populations will be addressed. Pre-requisites: 10-524-144, 10-524-145, 10-524-146, and 10-524-147. Co-requisites: 10-524-148, 10-524-150, and 10-524-151.

10-524-150 PTA Professional Issues 2 2 credits

Incorporates professional development, advanced legal and ethical issues, healthcare management and administration, and further development of professional communication strategies. Pre-requisites: 10-524-144, 10-524-145, 10-524-146, and 10-524-147. Co-requisites: 10-524-148, 10-524-149, and 10-524-151.

10-524-151 PTA Clinical Practice 3 5 credits

Provides a full-time clinical experience to apply foundational elements, knowledge, and technical skills required of the entry level physical therapist assistant in various practice settings. Pre-requisites: 10-524-144, 10-524-145, 10-524-146, and 10-524-147. Co-requisites: 10-524-148, 10-524-149, and 10-524-150. Pre-/Co-requisites: all required general education classes.

Career Potential:

- Physical Therapist Assistant

More detailed and updated information on this program may be available at: madisoncollege.edu. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

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Rev. 03/15

Polysomnography

Program Number: 80-515-1

Advanced Technical Certificate

Health-Related Professions Program Cluster

School of Health Education

Program offered at Madison Campuses

For information call: (608) 246-6065, (608) 246-6527 or (800) 322-6282 Ext. 6065 or 6527

About the Certificate

This advanced technical certificate is designed to prepare health care professionals to work in Polysomnography (sleep) laboratories. Polysomnography is the study of sleep patterns and abnormalities. Students study electro-encephalography (EEG), the study of the electrical activity of the brain; electroculography (EOG), the study of the electrical activity of the eye; and electromyography (EMG), the study of the electrical activity of muscles. This certificate also includes electrocardiology (ECG), the study of the electrical activity of the heart as well as the effects of sleep on the respiratory system.

Students learn to: perform diagnostic procedures to help identify sleep-related disorders, operate state-of-the-art medical equipment for both diagnosis and treatment of sleep-related disorders, compile and analyze (score) information from an overnight sleep study, educate patients and their families about sleep disorders and treatments, identify normal and abnormal patterns of sleep/wake states and explore the neurological and cardiopulmonary systems.

Admission Requirements

To review program admissions program requirements and application processing dates visit the programs website at: <http://madisoncollege.edu/program-info/polysomnography-certificate>.

Career Potential:

- Sleep Researcher
- Polysomnography (Sleep) Technician

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

Courses	Credits	Hrs/week Lec-Lab
10-515-140 Introduction to Polysomnography.....	2	6-0
10-515-141 Polysomnography Fundamentals 1.....	2	6-0
10-515-142 Polysomnography Fundamentals 2.....	2	6-0
10-515-144 Polysomnography Clinical Practice 1.....	1	0-8
10-515-145 Polysomnography Clinical Practice 2.....	2	2-8
Total	9	

Courses

10-515-140 Introduction to Polysomnography 2 credits

An overview of the field of Polysomnography including job responsibilities, normal and abnormal sleep patterns, and integrating the physiologic functions of the nervous, respiratory, cardiovascular systems and common sleep disorders. Emphasis placed on basic sleep sciences, neurophysiology, monitoring, electrical safety, diagnosis and treatment methods including CPAP, BiPAP, Oxygen therapy and surgical interventions. This course runs six hours a week for six weeks.

10-515-141 Polysomnography Fundamentals 1 2 credits

A basic discussion of recording sleep apnea. Patient setup, electrode application for overnight recordings, the sleep history and the technologists' assessment of the patient are discussed in detail with emphasis on instrument settings and calibration, recording parameters and an introduction to commonly used ancillary equipment. This course runs six hours a week for six weeks.

10-515-142 Polysomnography Fundamentals 2 2 credits

Presentation and discussion of the techniques of sleep staging. Respiratory event scoring, movement and arousal scoring criteria are also outlined. Covers recognition of normal and abnormal sleep patterns, effects of medication on sleep patterns, respiratory patterns and movement and arousal patterns, along with criteria for recognition of EKG and EEG abnormalities. Introduces the student to the major categories of sleep disorders in the infant and pediatric patient, provides an overview of the specific polysomnographic features and the special preparation needed in these populations. This course runs six hours a week for six weeks.

10-515-144 Polysomnography Clinical Practice 1 1 credit

Directed practice in the clinical setting in a sleep laboratory or a sleep center. Emphasis in overseeing periodic cessation of respiratory activity based on placement and monitoring of the following: electro-encephalography (EEG), electro-oculography (EOG), electrocardiography (ECG), electromyography (EMG), pulse oximetry (SpO2), inductive plethysmography and airflow thermocouple. Can be taken concurrently with 10-515-141.

10-515-145 Polysomnography Clinical Practice 2 2 credits

Directed practice in the clinical setting in a sleep laboratory or a sleep center. Assist in adult and pediatric patient setup and discontinuance in monitoring complete sleep studies. Emphasis on scoring a sleep montage related to respiratory cessation. This course can be taken concurrently with 10-515-142.

More detailed and updated information on this program may be available at: madisoncollege.edu. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

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Project Management Certificate

Program Number: 90-106-5

Certificate

Business Technology Program Cluster

School of Agriscience and Technologies

Certificate courses offered at Madison Campuses

For information call:

(608) 246-6003 or (800) 322-6282 Ext. 6003

About the Certificate

This certificate is designed for office professionals to assist with the successful planning and completion of projects.

Project Management is both a process and set of tools and techniques concerned with defining the project's goal, planning all the work to reach the goal, leading the project and support teams, monitoring progress, and seeing to it that the project is completed in a satisfactory way. In today's marketplace, Project Management is an integral part of all business practices.

The skills obtained in the Project Management Certificate for the Office Professional may be applied to the Administrative Professional and Medical Administrative Specialist Associate Degree programs, Meeting and Event Management Associate Degree program, or other associate or diploma degree programs.

This certificate is available to those working full time seeking skills to change careers or advance in their current career. Current Madison College students may complete this certificate in conjunction with their existing course work. Courses are available totally online or in the classroom.

Students who successfully complete this certificate may earn from \$15 to \$25 per hour based on their experience and other job skills.

Admission Requirements

To review program admission requirements and application processing dates, visit the program's website at:

<http://madisoncollege.edu/program-info/project-management-certificate>.

Requirements for Completion

The certificate will be awarded upon completion of the requirements with a minimum of a 2.0 grade average and no course grade lower than a C. The certificate will be awarded when completion of all requirements is verified after the semester the last course has been completed.

No more than 50% of the certificate credits may be through an advanced standing.

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

Courses	Credits	Hrs/week
		Lec-Lab
10-103-133 Excel-Beginning* AND	1	0.25-1.5
10-103-139 Excel-Intermediate OR	1	0.25-1.5
10-106-109 <i>Business Spreadsheet Applications</i>(3).....		1-4
10-103-186 MS Project*.....	2	1-2
10-106-164 Customer Contact Skills OR	1	0.25-1.5
10-145-189 <i>Customer Relations</i>(2).....		2-0
10-106-186 Introduction to Project Management.....	2	2-0
<i>Plus, choose one of the following courses:</i>		
10-102-134 Business Organization, Management, & Ethics	3	3-0
10-196-189 <u>Team Building and Problem Solving</u>	3	3-0
Total	10	

*Prerequisite: Working knowledge of Microsoft Windows

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Courses

10-102-134 Business Organization, Management, and Ethics 3 credits

This foundation course covers core concepts related to business strategy, marketing, operations, and finance, as well as their interrelationships within an organization. Case studies and a computer business simulation are used to deepen student understanding. Corporate culture and the International dimension of business are also covered. An Ethics framework, which will be further explored in upper-level program classes is introduced, along with a focus on the means businesses use to promote and enforce ethical behavior.

10-103-133 Excel-Beginning 1 credit

Introduction to Excel spreadsheet software. Create, edit, save, format, print, perform calculations, copy/move text and formulas, create charts, create complex formulas and expand use of functions. Prerequisite: Competency in Windows.

10-103-139 Excel-Intermediate 1 credit

Create Excel Tables, PivotTables and Pivot Charts, manage multiple worksheets and workbooks, use advanced functions and apply conditional formatting, and develop an Excel application with data validation, sheet protection, and Macros. Working competency in Windows and Beginning Excel presumed.

10-103-186 MS Project 2 credits

Use project management software to plan a project, create a project schedule, communicate project information, assign resources and costs, and track the project's progress through completion. Working competency in Windows presumed.

10-106-164 Customer Contact Skills 1 credit

Identify internal/external customers, develop verbal, nonverbal, and listening communication skills, develop problem-solving techniques, and ways of adding value to a customer interaction. Examine how technology impacts customer service, examine the impact on service breakdowns, and examine campaigns for customer loyalty.

10-106-186 Introduction to Project Management 2 credits

Plan and coordinate projects, develop timelines, determine priorities, increase individual and team productivity, control the workday and allocate resources using graphic tools such as MS Project or MS Excel software. Project management and coordination techniques and concepts are learned by participating in a team project and completing a personal project plan.

10-196-189 Team Building and Problem Solving 3 credits

The learner applies the skills and tools necessary to facilitate problem solving in a team environment. Each learner will demonstrate the application of strategies regarding: the necessary roles for team effectiveness, stages of team development, team problem solving and consensus, systematic processes for problem definition, data acquisition and analysis, generating alternative solutions, choosing solutions, implementation planning and evaluation.

Career Potential:

- Project Assistant
- Office Assistant
- Customer Service Representative
- Information Assistant
- Assistant Meeting Planner

With advanced training students may find employment as:

- Administrative Assistant
- Project Director
- Office Administrator
- Executive Assistant

More detailed and updated information on this program may be available at: madisoncollege.edu. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

Madison Area Technical College provides equal opportunity in education and employment.

Project Management Certificate for the Office Professional

Program Number: 90-106-5

Certificate

Business Technology Program Cluster

School of Business and Applied Arts

Certificate courses offered at Madison Campuses

For information call:

(608) 246-6003 or (800) 322-6282 Ext. 6003

About the Certificate

This certificate is designed for office professionals to assist with the successful planning and completion of projects.

Project Management is both a process and set of tools and techniques concerned with defining the project's goal, planning all the work to reach the goal, leading the project and support teams, monitoring progress, and seeing to it that the project is completed in a satisfactory way. In today's marketplace, Project Management is an integral part of all business practices.

The skills obtained in the Project Management Certificate for the Office Professional may be applied to the Administrative Professional and Medical Administrative Specialist Associate Degree programs, Meeting and Event Management Associate Degree program, or other associate or diploma degree programs.

This certificate is available to those working full time seeking skills to change careers or advance in their current career. Current Madison College students may complete this certificate in conjunction with their existing course work. Courses are available totally online or in the classroom.

Students who successfully complete this certificate may earn from \$15 to \$25 per hour based on their experience and other job skills.

Admission Requirements

To review program admission requirements and application processing dates, visit the program's website at:

<http://madisoncollege.edu/program-info/project-management-certificate>.

Requirements for Completion

The certificate will be awarded upon completion of the requirements with a minimum of a 2.0 grade average and no course grade lower than a C. The certificate will be awarded when completion of all requirements is verified after the semester the last course has been completed.

No more than 50% of the certificate credits may be through an advanced standing.

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

Courses	Credits	Hrs/week	
		Lec	Lab
10-103-133 Excel-Beginning* AND	1	0.25	1.5
10-103-139 Excel-Intermediate OR	1	0.25	1.5
10-106-109 <i>Business Spreadsheet Applications</i>	(3)	1	4
10-103-186 MS Project*	2	1	2
10-106-164 Customer Contact Skills OR	1	0.25	1.5
10-145-189 <i>Customer Relations</i>	(2)	2	0
10-106-186 Introduction to Project Management.....	2	2	0
<i>Plus, choose one of the following courses:</i>			
10-102-134 Business Organization, Management, & Ethics	3	3	0
10-196-189 <u>Team Building and Problem Solving</u>	3	3	0
Total	10		

*Prerequisite: Working knowledge of Microsoft Windows

Microsoft® is a registered trademark of the Microsoft Corporation.



Courses

10-102-134 Business Organization, Management, and Ethics 3 credits

This foundation course covers core concepts related to business strategy, marketing, operations, and finance, as well as their interrelationships within an organization. Case studies and a computer business simulation are used to deepen student understanding. Corporate culture and the International dimension of business are also covered. An Ethics framework, which will be further explored in upper-level program classes is introduced, along with a focus on the means businesses use to promote and enforce ethical behavior.

10-103-133 Excel-Beginning 1 credit

Introduction to Excel spreadsheet software. Create, edit, save, format, print, perform calculations, copy/move text and formulas, create charts, create complex formulas and expand use of functions. Prerequisite: Competency in Windows.

10-103-139 Excel-Intermediate 1 credit

Create Excel Tables, PivotTables and Pivot Charts, manage multiple worksheets and workbooks, use advanced functions and apply conditional formatting, and develop an Excel application with data validation, sheet protection, and Macros. Working competency in Windows and Beginning Excel presumed.

10-103-186 MS Project 2 credits

Use project management software to plan a project, create a project schedule, communicate project information, assign resources and costs, and track the project's progress through completion. Working competency in Windows presumed.

10-106-164 Customer Contact Skills 1 credit

Identify internal/external customers, develop verbal, nonverbal, and listening communication skills, develop problem-solving techniques, and ways of adding value to a customer interaction. Examine how technology impacts customer service, examine the impact on service breakdowns, and examine campaigns for customer loyalty.

10-106-186 Introduction to Project Management 2 credits

Plan and coordinate projects, develop timelines, determine priorities, increase individual and team productivity, control the workday and allocate resources using graphic tools such as MS Project or MS Excel software. Project management and coordination techniques and concepts are learned by participating in a team project and completing a personal project plan.

10-196-189 Team Building and Problem Solving 3 credits

The learner applies the skills and tools necessary to facilitate problem solving in a team environment. Each learner will demonstrate the application of strategies regarding: the necessary roles for team effectiveness, stages of team development, team problem solving and consensus, systematic processes for problem definition, data acquisition and analysis, generating alternative solutions, choosing solutions, implementation planning and evaluation.

Career Potential:

- Project Assistant
- Office Assistant
- Customer Service Representative
- Information Assistant
- Assistant Meeting Planner

With advanced training students may find employment as:

- Administrative Assistant
- Project Director
- Office Administrator
- Executive Assistant

More detailed and updated information on this program may be available at: madisoncollege.edu. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

Madison Area Technical College provides equal opportunity in education and employment.

Property Management Certificate

Program Number: 90-194-1

Certificate

Business and Marketing Program Cluster

School of Business and Applied Arts

Program offered at Madison Campuses

For information call:

(608) 246-6003 or (800) 322-6282 Ext. 6003

About the Certificate

The Property Management certificate is ideal for individuals who enjoy blending knowledge of real estate, sales and customer service skills. The certificate is designed for candidates who desire knowledge and a career in property management or a field closely connected with property management.

The certificate is intended to provide students with the sales and broker pre-licensing education requirements which will prepare them to take the state licensing exams. The certificate offers a foundation in the areas of management, marketing and maintenance of real estate.

Individuals who complete the certificate generally work for real estate brokers and agents, lessors of real estate, real estate development companies, government agencies, and private corporations of commercial properties. This certificate is offered entirely online.

Admissions Requirements

To review admissions program requirements and application processing dates visit the programs website at:

<http://madisoncollege.edu/program-info/property-management-certificate>.

Requirements for Completion

The certificate will be awarded upon completion of the requirements with a minimum of a 2.0 grade average and no course grade lower than a C. The certificate will be awarded when completion of all requirements is verified after the semester the last course has been completed.

Completion of this certificate **does not** equate to certification in professional organizations. For additional information regarding credentials and memberships with professional real estate management organizations, refer to the Institute of Real Estate Management (IREM).

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

Courses		Hrs/week	
		Credits	Lec-Lab-Occup
10-103-133	Excel – Beginning.....	1	0.25-1.5
10-194-182	Real Estate Law*..... (Salesperson Educational Requirement)	4	4-0-0
10-194-185	Real Estate Brokerage*.....	4	4-0-0
10-104-102	Marketing Principles.....	3	3-0-0
10-194-190	Property Management 1**.....	3	3-0-0
10-194-191	Property Management 2**.....	3	3-0-0
10-194-195	<u>Real Estate Internship.....</u>	<u>3</u>	<u>1-0-8</u>
Total		21	

Courses should be taken in the order listed above.

*It is recommended that students take Real Estate Law and Real Estate Brokerage in the same semester. (Offered both fall and spring semester.)

**Only offered spring semester



Madison Area Technical College
Property Management Certificate

Program Number: 90-194-1

Required Courses

10-103-133 Excel – Beginning 1 credit
Introduction to Excel spreadsheet software. Create, edit, save, format, print, perform calculations, copy/move text and formulas, create charts, create complex formulas and expand use of functions. Prerequisite: Competency in Windows.

10-104-102 Marketing Principles 3 credits
This foundation course introduces students to the marketing process and how it operates in today's dynamic organizations. The entire marketing mix is examined on a broad scale. Topics include: market segmentation and targeting strategies, market research, consumer behavior, product development, pricing policies, distribution, and an overview of promotion. This basic course provides a comprehensive overview of the exciting world of marketing.

10-194-182 Real Estate Law 4 credits
Designed to acquaint students with the field of real estate as well as Wisconsin real estate law. This course also meets the educational requirements for the Wisconsin Real Estate Salesperson's examination. It covers topics such as laws of agency, property ownership, real estate contracts, title issues, real estate financing, fair housing laws, landlord/tenant laws, business ethics, and various other subjects related to the real estate profession. It is particularly oriented toward Wisconsin laws.

10-194-185 Real Estate Brokerage 4 credits
Designed to build on the Real Estate Law course, Real Estate Brokerage looks at real estate management including business and financing management, trust accounts, proper use of forms, agency contracts, ethical requirements, office management and transactional concerns. The course is oriented toward real estate brokerage in Wisconsin and fulfills the educational requirement for the Real Estate Broker license in Wisconsin.

10-194-190 Property Management 1 3 credits
Examines an overview of property management. Some of the topics explored include fair housing laws, leasing, managing an office, marketing, maintenance, property renovations, and security.

10-194-191 Property Management 2 3 credits
This course further explores the various types of properties to manage (office, shopping center, hotel/motel, industrial, rural, etc.) and simulates "real world" experience. Students will engage in projects addressing "green" properties, and develop a business plan for a property management situation. Prerequisite: 10-194-190.

10-194-195 Real Estate Internship 3 credits
Requires work experience within an approved organization as well as under the sponsorship of someone at the management level. The real estate intern is required to complete 140 hours of supervised work. The intern will complete a final work report at the completion of the semester while the sponsor will complete a job performance evaluation. Class time concentrates on the internship experience. The intern prepares a resume and develops a job strategy as a means of preparing for full-time work upon graduation.

Career Potential:

- Property Manager
- Real Estate Agent
- Real Estate Broker

More detailed and updated information on this program may be available at: madisoncollege.edu. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

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Rev. 04/15

Radiography

Program Number: 10-526-1

Associate in Applied Science Degree

Health-Related Professions Program Cluster

School of Health Education

Program offered at Truax Campus

For information call: (608) 246-6065, (608) 259-2901
or (800) 322-6282 Ext. 6065 or 2901

About the Program

The radiographer is the producer of medical images for diagnosis of disease. Duties include: positioning of patient to obtain proper projection, aligning source (usually x-radiation), making exposure factor selections, processing the image, storing and retrieving images.

Graduates are eligible to take the entry-level certification examination and are employable in radiology and medical-imaging departments in hospitals and clinics. Radiographers should be able to follow instructions carefully and work to prescribed standards, able to use good judgment in following procedures and handling problems, interested in work of a technical or scientific nature, and willing and able to work under pressure in emergency situations.

Note: For clinical courses, assignments to nontraditional shifts are made to increase and diversify patient exam experiences. Students are assigned to clinical affiliations in Madison and southern Wisconsin.

Admission Requirements

To review program admission requirements and application processing dates visit the programs website at:
<http://madisoncollege.edu/program-info/radiography>.

Program Requirements

- Caregiver Background Check (CBC); refer to catalog for Health, Human and Protective Services Policy;
- Physical exam and a completed Health History Form on file prior to beginning clinical training;
- Essential functions for the Radiography Program; and
- Recommend meeting with the program director; and
- CPR advanced certification.

Program Completion Requirements

A student may repeat a course only one time (general education or technical studies courses) in order to earn the required grades, but when repeating a course, a minimum grade of B must be obtained.

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

Pre-Radiography course:		Credits	Hrs/week Lec-Lab
10-806-177	General Anatomy and Physiology* OR	(4)	(5-4)
20-806-206	General Anatomy and Physiology*, **.....	4	5-4
Semester Total		4	
First Semester			
10-526-149	Radiographic Procedures 1	5	5-0
10-526-158	Introduction to Radiography.....	3	2-0
10-526-159	Radiographic Imaging 1.....	3	3-0
10-526-168	Radiography Clinical 1.....	2	0-12
10-804-107	College Math*.....	3	3-0
Semester Total		16	
Second Semester			
10-526-170	Radiographic Imaging 2.....	3	3-0
10-526-191	Radiographic Procedures 2	5	5-0
10-526-192	Radiography Clinical 2.....	3	0-12
10-801-195	Written Communication* OR	3	3-0
20-801-201	English 1*.....	(3)	(3-0)
Semester Total		14	
Third Semester (summer)			
10-526-193	Radiography Clinical 3.....	3	0-32
Semester Total		3	
Fourth Semester			
10-526-194	Imaging Equipment Operation.....	3	4-0
10-526-195	Radiographic Quality Analysis.....	2	2-0
10-526-196	Modalities	3	1-0
10-526-199	Radiography Clinical 4.....	3	0-12
10-801-196	Oral/Interpersonal Communication* OR	(3)	3-0
20-810-201	Fundamental of Speech*.....	3	3-0
20-809-231	Introduction to Psychology*.....	3	(3-0)
Semester Total		17	
Fifth Semester			
10-526-189	Radiographic Pathology.....	1	1-0
10-526-190	Radiography Clinical 5.....	2	0-24
10-526-197	Radiation Protection and Biology	3	3-0
10-809-197	Contemporary American Society* OR	3	3-0
20-809-203	Introduction to Sociology*.....	(3)	(3-0)
20-809-233	Developmental Psychology* OR	3	3-0
20-809-235	Psychology of Personal Adjustment* OR	(3)	(3-0)
20-809-236	Applied Psychology * OR	(3)	(3-0)
20-809-238	Health Psychology*.....	(3)	(3-0)
Semester Total		12	
Sixth Semester (summer)			
10-526-174	ARRT Certification Seminar.....	2	0-24
10-526-198	Radiography Clinical 6.....	2	0-24
Semester Total		4	

*Courses which may be taken prior to entering the program. Courses may also be taken at the College-Transfer level. Must have grades of C or better to transfer. A copy of the essential functions necessary to successfully complete the program of study and a copy of the program's mission statement and strategic plan is available from the website.

**Satisfactory completion of Anatomy & Physiology prior to application or while on the program waiting list qualifies for priority admission into the program on a space available basis, but has to be taken within 5 years of starting the program.



Program Courses

10-526-149 Radiographic Procedures 1 5 credits

Prepares radiography students to perform routine radiologic procedures on various parts of the body including the upper body, hip, pelvis and ankle. Students apply knowledge of human anatomy to position the patient correctly to achieve the desired result. Prerequisites: General A & P, Radiography prerequisites and concurrent enrollment in: 10-526-150, 10-526-158, 10-526-159, and 10-526-168.

10-526-158 Introduction to Radiography 3 credits

Introduces students to the role of radiography in health care. Students apply legal and ethical considerations to patient care and pharmacology in the radiologic sciences. Prerequisite: General A & P, Radiography prerequisites and concurrent enrollment in: 10-526-150, 10-526-149, 10-526-159, and 10-526-168.

10-526-159 Radiographic Imaging 1 3 credits

Introduces radiography students to the process of creating radiographic images. Students determine the factors that affect image quality including contrast, density, and distortion. Students apply OSHA standards for health and safety in the darkroom. Prerequisites: General A & P, Radiography prerequisites and concurrent enrollment in: 10-526-150, 10-526-149, 10-526-158, and 10-526-168.

10-526-168 Radiography Clinical 1 2 credits

This beginning level clinical course prepares radiography students to perform radiologic procedures on patients with extensive supervision and direction. Students apply radiation protection and standard precautions in the production of radiographs in a health care setting while adhering to legal and ethical guidelines. An emphasis of the course is the development of communication and critical thinking skills appropriate to the clinical setting. Prerequisites: General A & P, Radiography prerequisites and concurrent enrollment in: 10-526-150, 10-526-149, 10-526-158, and 10-526-159.

10-526-170 Radiographic Imaging 2 3 credits

Prepares radiography students to apply advanced radiographic principles to the production of radiographic images. Students analyze exposure factor considerations, differentiate between film and exposure latitude, and use beam restricting devices. Prerequisite: all first semester courses and concurrent enrollment in: 10-526-191, 10-526-172, and 10-526-192.

10-526-174 ARRT Certification Seminar 2 credits

Provides preparation for the for the national certification examination prepared by the American Registry of Radiologic Technologists. Emphasis is placed on the weak areas of the individual students. Simulated registry examinations are utilized. Prerequisite: all fourth semester courses and concurrent enrollment in: 10-526-198.

10-526-189 Radiographic Pathology 1 credit

Prepares radiography students to determine the basic radiographic manifestations of pathological conditions. Students classify trauma related to site, complications, and prognosis and locate the radiographic appearance of pathologies. Prerequisites: all first, second, and third semester courses, and 10-526-193. Concurrent enrollment: 10-526-190 and 10-526-197.

10-526-190 Radiography Clinical 5 2 credits

This fifth level clinical course prepares radiography students to perform radiologic procedures on patients with some supervision. Students apply radiation protection and standard precautions in the production of radiographs in a health care setting while adhering to legal and ethical guidelines. Students are encouraged to demonstrate independent judgment in the performance of clinical competencies. Prerequisite: all first, second, and third semester courses and 10-526-193. Concurrent enrollment: 10-526-189 and 10-526-197.

10-526-191 Radiographic Procedures 2 5 credits

Prepares radiography students to perform routine radiologic procedures on various parts of the body including the skull and spine. Students apply knowledge of human anatomy to position the patient correctly to achieve the desired result. Prerequisites: all first semester courses and concurrent enrollment in: 10-526-170, 10-526-172 and 10-526-192.

10-526-192 Radiography Clinical 2 3 credits

This second level clinical course prepares radiography students to perform radiologic procedures on patients with extensive supervision and direction. Students apply radiation protection and standard precautions in the production of radiographs in a health care setting while adhering to legal and ethical guidelines. An emphasis of the course is the development of communication and critical thinking skills appropriate to the clinical setting. Prerequisites: all first semester courses; concurrent enrollment: 10-526-170, 10-526-191, and 10-526-172.

10-526-193 Radiography Clinical 3 3 credits

This third level clinical course prepares radiography students to perform radiologic procedures on patients with supervision and direction. Students apply radiation protection and standard precautions in the production of radiographs in a health care setting while adhering to legal and ethical guidelines. An emphasis of the course is the demonstration of communication and critical thinking skills appropriate to the clinical setting. Prerequisite: all first and second semester courses.

10-526-194 Imaging Equipment Operation 3 credits

Introduces radiography students to the principles and application of x-ray technology. Students analyze how x-rays are produced and determine the corrective actions necessary for common equipment malfunctions. Prerequisites: all first and second semester courses and 10-526-193. Co-requisite: 10-526-195, 10-526-196, and 10-526-199.

10-526-195 Radiographic Quality Analysis 2 credits

Prepares radiography students to analyze radiographic images for quality. Students apply quality control tests to determine the causes of image problems including equipment malfunctions and procedural errors. Prerequisites: all first and second semester courses and 10-526-193. Concurrent enrollment: 10-526-194, 10-526-195, 10-526-196, and 10-526-199.

10-526-196 Modalities 3 credits

Introduces radiography students to other types of imaging including ultrasound, MRI, mammography, and bone density scans. Students analyze the role of various imaging technologies in health care. Prerequisites: all first & second semester courses and 10-526-193. Concurrent enrollment in: 10-526-194, 10-526-195, and 10-526-199.

10-526-197 Radiation Protection and Biology 3 credits

Prepares radiography students to protect themselves and others from exposure to radioactivity. Students examine the characteristics of radiation and how radiation affects cell biology. Students apply standards and guidelines for radiation exposure. Prerequisites: all first, second, and third semester courses, and 10-526-193. Concurrent enrollment: 10-526-189 and 10-526-190.

10-526-198 Radiography Clinical 6 2 credits

This final clinical course requires students to integrate and apply all knowledge learned in previous courses to the production of high quality radiographs in the clinical setting. Students apply radiation protection and standard precautions in the production of radiographs in a health care setting while adhering to legal and ethical guidelines. Students are encouraged to demonstrate independent judgment in the performance of clinical competencies. Prerequisite: all previously listed courses.

10-526-199 Radiography Clinical 4 5 credits

This fourth level clinical course prepares radiography students to perform radiologic procedures on patients with supervision and direction. Students apply radiation protection and standard precautions in the production of radiographs in a health care setting while adhering to legal and ethical guidelines. Students are encouraged to demonstrate independent judgment in the performance of clinical competencies. Prerequisites: all first and second semester courses and 10-526-193. Co-requisite: 10-526-194, 10-526-195, and 10-526-196.

Career Potential:

- Radiographer

With additional education and/or work experience, graduates may find employment as:

- Bone Densitometrist
- CT Technologist
- MRI Technologist
- Mammographer
- Special Procedures Technologist
- Radiation Therapy Technologist
- Nuclear Medicine Technologist
- Ultrasound (Sonographer)
- Equipment Sales Representative
- Educator

More detailed and updated information on this program may be available at: madisoncollege.edu. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

Madison Area Technical College provides equal opportunity in education and employment.

Rev. 02/15

Real Estate Sales Certificate

Program Number: 90-194-2

Certificate

Business and Marketing Program Cluster

School of Business and Applied Arts

Program offered at Madison Campuses

For information call:

(608) 258-2416 or (800) 322-6282 Ext. 2416

About the Certificate

There are numerous career opportunities in residential, commercial and industrial real estate for trained men and women. This certificate gives you the licensing courses you will need to sell or manage real estate, along with practical selling skills, including the use of social media.

This program explores the basics of the real estate market, property rights, ownership, construction, financing and brokerage as they relate to the American consumer. This certificate is offered entirely online.

There is a Business-Related Concentration Area related to Real Estate as part of the Business Management Associate's Degree program. Information may be found at: <http://madisoncollege.edu/files/program-sheets/business-management.pdf>.

Admissions Requirements

To review admissions program requirements and application processing dates visit the programs website at: <http://madisoncollege.edu/program-info/real-estate-sales-certificate>.

Requirements for Completion

The certificate will be awarded upon completion of the requirements with a minimum of a 2.0 grade average and no course grade lower than a C. The certificate will be awarded when completion of all requirements is verified after the semester the last course has been completed.

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

Courses	Credits	Hrs/week	
		Lec	Lab-Occup
10-103-133 Excel – Beginning	1	0.25	1.5
10-194-182 Real Estate Law	4	4	0-0
(Salesperson Educational Requirement)			
10-194-185 Real Estate Brokerage	4	4	0-0
(Broker Educational Requirement)			
First Semester Total	8		
10-104-102 Marketing Principles.....	3	3	0-0
10-104-104 Selling Principles.....	3	3	0-0
10-104-114 Social Media Principles.....	3	3	0-0
Second Semester Total	9		
10-194-195 Real Estate Internship*.....	3	1	0-8
Third Semester Total	3		
Recommended Additional (Elective) Course:			
10-104-160 Sales Management	(3)	3	0-0
Total Credits needed for certificate	21		

Note: All courses (entire certificate) are (is) offered entirely online.

*Typically offered fall, spring, and summer terms.



Program Courses

10-103-133 Excel-Beginning 1 credit
Introduction to Excel spreadsheet software. Create, edit, save, format, print, perform calculations, copy/move text and formulas, create charts, create complex formulas and expand use of functions. Prerequisite: competency in Windows.

More detailed and updated information on this program may be available at: madisoncollege.edu. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

10-104-102 Marketing Principles 3 credits
This foundation course introduces students to the marketing process and how it operates in today's dynamic organizations. The entire marketing mix is examined on a broad scale. Topics include: market segmentation and targeting strategies, market research, consumer behavior, product development, pricing policies, distribution, and an overview of promotion. This basic course provides a comprehensive overview of the exciting world of marketing.

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Rev. 07/15

10-104-104 Selling Principles 3 credits
This course acquaints the student with the basic principles and applications of the sales process as they may apply to industrial, wholesale and retail selling situations. This would include prospecting and qualifying, planning and pre-approaching, approaching the customer, the sales presentation/demonstration, handling objections, closing the sale and post-sale service and follow-up.

10-104-114 Social Media Principles 3 credits
Social Media has transformed Advertising from a long-term Mass medium to a one-to-one communication utilizing almost instant feedback. How businesses are using Social Media as advertising tools as well as how to create and deploy a Social Media Campaign will be the main focus of this class. Additionally, the history and development of Social Medias such as Facebook, YouTube, Twitter and LinkedIn will be explored as well as the many ethical and potential legal concerns that have arisen over these new forms of communication. Finally, the concept of Viral Marketing will be examined and how it allows a Social Message to explode a message to millions of users in a brief time.

10-104-160 Sales Management 3 credits
The role of the Manager in the Sales process is explored in this advanced sales class. Creating a sales program, developing your sales force, motivating sales people, and developing companies to be more selling focused will all be explored through research, case studies, practical applications and projects. Sales skills will be enhanced through the role of a strong Sales Manager. Prerequisite: 10-104-104, or Instructor Consent.

10-194-182 Real Estate Law 4 credits
Designed to acquaint students with the field of real estate as well as with Wisconsin real estate law and to prepare them for the Wisconsin Real Estate Salesperson's Examination. It covers topics such as the law of agency, legal descriptions, real estate contracts, mortgages, land contracts, consumer-protection laws, landlord-tenant laws, fair-housing ordinances and various other subjects related to the real estate profession. It is particularly oriented toward Wisconsin laws.

10-194-185 Real Estate Brokerage 4 credits
Covers market analysis, sales, planning, staff compensation and sales management including selection, training and supervision. The course is oriented to real estate brokerage in Wisconsin and fulfills the educational requirement for the Real Estate Broker's License in Wisconsin. Prerequisite: 10194182

10-194-195 Real Estate Internship 3 credits
Requires work experience within an approved organization as well as under the sponsorship of someone at the management level. The real estate intern is required to complete 144 hours of supervised work. The intern will complete a final work report at the completion of the semester while the sponsor will complete a job performance evaluation. Class time concentrates on the internship experience. The intern prepares a resume and develops a job strategy as a means of preparing for full-time work upon graduation.

Real Estate Sales Certificate

Program Number: 90-194-2

Certificate

Business and Marketing Program Cluster

School of Business and Applied Arts

Program offered at Madison Campuses

For information call:

(608) 258-2416 or (800) 322-6282 Ext. 2416

About the Certificate

There are numerous career opportunities in residential, commercial and industrial real estate for trained men and women. This certificate gives you the licensing courses you will need to sell or manage real estate, along with practical selling skills, including the use of social media.

This program explores the basics of the real estate market, property rights, ownership, construction, financing and brokerage as they relate to the American consumer. This certificate is offered entirely online.

There is a Business-Related Concentration Area related to Real Estate as part of the Business Management Associate's Degree program. Information may be found at: <http://madisoncollege.edu/files/program-sheets/business-management.pdf>.

Admissions Requirements

To review admissions program requirements and application processing dates visit the programs website at: <http://madisoncollege.edu/program-info/real-estate-sales-certificate>.

Requirements for Completion

The certificate will be awarded upon completion of the requirements with a minimum of a 2.0 grade average and no course grade lower than a C. The certificate will be awarded when completion of all requirements is verified after the semester the last course has been completed.

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

Courses	Credits	Hrs/week	
		Lec-Lab-Occup	
10-103-133 Excel – Beginning	1	0.25-1.5	
10-194-182 Real Estate Law	4	4-0-0	
(Salesperson Educational Requirement)			
10-194-185 Real Estate Brokerage	4	4-0-0	
First Semester Total	8		
10-104-102 Marketing Principles	3	3-0-0	
10-104-104 Selling Principles	3	3-0-0	
10-104-114 Social Media Principles	3	3-0-0	
Second Semester Total	9		
10-194-195 Real Estate Internship	3	1-0-8	
Third Semester Total	3		
Recommended Additional (Elective) Course:			
10-104-160 Sales Management	(3)	3-0-0	
Total Credits needed for certificate		21	

Note: All courses (entire certificate) are (is) offered entirely online.



Program Courses

10-103-133 Excel-Beginning 1 credit
Introduction to Excel spreadsheet software. Create, edit, save, format, print, perform calculations, copy/move text and formulas, create charts, create complex formulas and expand use of functions. Prerequisite: competency in Windows.

More detailed and updated information on this program may be available at: madisoncollege.edu. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

10-104-102 Marketing Principles 3 credits
This foundation course introduces students to the marketing process and how it operates in today's dynamic organizations. The entire marketing mix is examined on a broad scale. Topics include: market segmentation and targeting strategies, market research, consumer behavior, product development, pricing policies, distribution, and an overview of promotion. This basic course provides a comprehensive overview of the exciting world of marketing.

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Rev. 04/15

10-104-104 Selling Principles 3 credits
This course acquaints the student with the basic principles and applications of the sales process as they may apply to industrial, wholesale and retail selling situations. This would include prospecting and qualifying, planning and pre-approaching, approaching the customer, the sales presentation/demonstration, handling objections, closing the sale and post-sale service and follow-up.

10-104-114 Social Media Principles 3 credits
Social Media has transformed Advertising from a long-term Mass medium to a one-to-one communication utilizing almost instant feedback. How businesses are using Social Media as advertising tools as well as how to create and deploy a Social Media Campaign will be the main focus of this class. Additionally, the history and development of Social Medias such as Facebook, YouTube, Twitter and LinkedIn will be explored as well as the many ethical and potential legal concerns that have arisen over these new forms of communication. Finally, the concept of Viral Marketing will be examined and how it allows a Social Message to explode a message to millions of users in a brief time.

10-104-160 Sales Management 3 credits
The role of the Manager in the Sales process is explored in this advanced sales class. Creating a sales program, developing your sales force, motivating sales people, and developing companies to be more selling focused will all be explored through research, case studies, practical applications and projects. Sales skills will be enhanced through the role of a strong Sales Manager. Prerequisite: 10-104-104, or Instructor Consent.

10-194-182 Real Estate Law 4 credits
Designed to acquaint students with the field of real estate as well as with Wisconsin real estate law and to prepare them for the Wisconsin Real Estate Salesperson's Examination. It covers topics such as the law of agency, legal descriptions, real estate contracts, mortgages, land contracts, consumer-protection laws, landlord-tenant laws, fair-housing ordinances and various other subjects related to the real estate profession. It is particularly oriented toward Wisconsin laws.

10-194-185 Real Estate Brokerage 4 credits
Covers market analysis, sales, planning, staff compensation and sales management including selection, training and supervision. The course is oriented to real estate brokerage in Wisconsin and fulfills the educational requirement for the Real Estate Broker's License in Wisconsin. Prerequisite: 10194182

10-194-195 Real Estate Internship 3 credits
Requires work experience within an approved organization as well as under the sponsorship of someone at the management level. The real estate intern is required to complete 144 hours of supervised work. The intern will complete a final work report at the completion of the semester while the sponsor will complete a job performance evaluation. Class time concentrates on the internship experience. The intern prepares a resume and develops a job strategy as a means of preparing for full-time work upon graduation.

Recreation Management

Program Number: 10-109-4

Associate in Applied Science Degree

Hospitality Program Cluster

School of Business and Applied Arts

Program offered at Madison Campuses

For information call: (608) 246-6003 or
(800) 322-6282 Ext. 6003

About the Program

The Recreation Management program is designed to develop competencies in leadership, problem solving, communications, human relations, team building, technical and management skills as they apply to the recreation industry. Students receive management training for efficient and effective marketing, programming, budgeting, finance, and management-level performances within the leisure services industry.

The strength of this program is its innovative curriculum design. The curriculum allows students to shift from public municipal recreation, to non-profit, to commercial industries and still have the assurance that they have the critical management skills to perform in any one of the employment fields. Graduates may be employed by: recreation and sports centers, aquatic facilities, theme parks, resorts, community centers, senior centers, golf courses, ski areas, parks, camps, non-profit organizations, outdoor centers and other recreational venues.

The **Activity/Fitness Emphasis** area develops an ability to plan, implement, facilitate and evaluate recreation programs. The emphasis is designed to prepare recreation professionals in the organization and promotion of programs improving the quality of life across the life span.

The **Outdoor Education Emphasis** area develops an ability to plan, implement, facilitate, and evaluate outdoor education programs. The emphasis focuses on problem solving skills, team building, leadership development, and growth through adversity.

Recreation Management program credits transfer to UW-La Crosse, Carroll University, George Williams College, and Aurora University for the Recreation Management degree.

Admissions Requirements

To review admissions program requirements and application processing dates visit the programs website at: <http://madisoncollege.edu/program-info/recreation-management>.

Program Courses

10-109-103 Leisure and Lifestyle 3 credits

Encourages a holistic and comprehensive understanding of the significance of leisure to the individual and society. Emphasizes concepts, theories, and the interrelationships between factors (social, economic, political, and environmental), which influence people's leisure attitudes and behavior.

10-109-106 Recreation Programming 3 credits

This course provides practical knowledge and experiences on the essential elements and design concepts of program planning. Emphasis is placed on student involvement in planning and directing programs for diverse populations in a variety of physical settings. Co-requisite: 10-109-162.

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

First Semester		Credits	Hrs/week Lec-Lab
10-109-103	Leisure and Lifestyle*	3	3-0
10-109-162	Introduction to Recreation.....	2	2-0
10-103-133	Excel-Beginning	1	0.25-1.5
10-104-102	Marketing Principles.....	3	3-0
10-801-195	Written CommunicationΔ.....	3	3-0
10-804-123	Math with Business ApplicationsΔ.....	3	3-0
Semester Total		15	

Second Semester		Credits	Hrs/week Lec-Lab
10-109-106	Recreation Programming**	3	3-0
10-109-171	Internship Development & Community Partners**	2	2-0
10-109-196	Principles of Outdoor Pursuits**	3	3-0
10-801-196	Oral/Interpersonal CommunicationΔ	3	3-0
10-809-166	Intro to Ethics: Theory & ApplicationΔ.....	3	3-0
	Emphasis Area Course (see below).....	3	
Semester Total		17	

Third Semester (summer)		Credits	Hrs/week Lec-Lab
10-109-175	Recreation Internship Practicum***	2	0-8
Total		2	

Fourth Semester		Credits	Hrs/week Lec-Lab
10-109-135	Leadership Strategies in Recreation*	3	3-0
10-109-163	Trends and Topics in Recreation*	3	3-0
10-109-195	Recreation Industry Budget and Financial Management*	3	3-0
10-809-197	Contemporary American SocietyΔ	3	3-0
10-809-199	Psychology of Human RelationsΔ	3	3-0
	Emphasis Area Course (see below).....	3	
Semester Total		18	

Fifth Semester		Credits	Hrs/week Lec-Lab
10-109-115	Recreation Administration and Management**	3	3-0
10-109-155	Facility Operation and Maintenance**	3	3-0
10-109-160	Inclusive Recreation*	3	3-0
10-109-190	Recreation Seminar	1	1-0
10-809-195	EconomicsΔ.....	3	3-0
	Emphasis Area Course (see below).....	3	
Semester Total		16	

Activity/Fitness Emphasis (take at least 9 credits)

10-109-138	Health Club Operations and Management*	3 credits
10-109-173	Group Exercise Leadership**	3 credits
10-109-176	Personal Trainer Development	3 credits
10-807-160	Anatomy and Physiology for Exercise.....	3 credits

Outdoor Education Emphasis

10-109-197	Challenge Course Programming.....	3 credits
10-109-199	Adventure Processing and Facilitation**	3 credits

Notes:

*Fall only

**Spring only

***Summer only

Δ Course may be substituted by another Arts & Sciences Center approved class listed on your Advising Report, on the Recreation program website, or contact the program advisor for information.

Program Courses (continued)

10-109-115 Recreation Administration and Management 3 credits

Prepares students for entry-level management positions in the leisure services profession. The course is project oriented and will focus on the areas of agency management, human resources, budgeting, risk management and legal issues in leisure services; agency and program evaluation, facility scheduling, and public relations. Students will develop an agency registration manual for presentation to the class. Prerequisite: completion of at least two semesters in the Recreation Services program.

10-109-135 Leadership Strategies in Recreation 3 credits

This course focuses on the development of foundational leadership knowledge and skills within the recreation field. Students will learn and apply various leadership and communication styles, motivational theories, and group dynamics. Students will develop and practice skills for organizing and leading specific recreation activities, including cooperative games and group initiatives.

10-109-138 Health Club Operations and Management 3 credits

Covers a wide range of topics about the fitness industry. Topics include: industry statistics, history, facility classifications, marketing, membership sales, equipment purchasing, maintenance, hiring, staffing, trade organizations and more. Upon completion, the student will have a solid understanding of how the fitness industry functions.

10-109-155 Facility Operation and Maintenance 3 credits

Principles for planning, assessing and evaluating resources, areas and facilities. Topics include: scheduling, planning and design, assessing resources, routine and preventative maintenance, care of outdoor and natural areas, and impact on the environment.

10-109-160 Inclusive Recreation 3 credits

This course serves as an introduction to inclusion and an understanding of needs and program adaptations relative to recreational pursuits. Topics covered include history, philosophy, purpose, programming, as well as characteristics and needs of individuals with disabilities.

10-109-162 Introduction to Recreation 3 credits

Introduces new students to the recreation profession and its potential careers. Emphasis is placed on the development of the profession, the community service leisure service system and professional organizations.

10-109-163 Topics and Trends in Recreation 3 credits

This course content changes from semester to semester and is based on current and important recreation trends and topics. Students will explore cutting-edge theories and practices and have an opportunity to explore trends in which they have a particular interest.

10-109-171 Intern Development and Community Partnerships 2 credits

Focus on preparing students for the internship experience through the identification of career goals and objectives in order to select an internship site. Topics include placement requirements and policies, resumes, interviewing, letters of application, and the role and issues of professional practice. Prerequisite: completion of one semester in the Recreation Program.

10-109-173 Group Exercise Leadership 3 credits

ACE PREP COURSE – This course prepares individuals to teach group exercise and recreation for different age groups and take the American Council on Exercise National Exam. It is a comprehensive training program that covers topics such as exercise physiology, anatomy, body mechanics and safety, choreography development, teaching methodologies, and group dynamics. Recommend taking 10-807-160 or equivalent.

10-109-175 Recreation Internship Practicum 3 credits

Students must complete a 150-hours internship with an approved recreation business agency. The on-site practitioner and internship coordinator supervise the student's progress. This internship can be paid or unpaid. Prerequisite: completion of at least two semesters in the Recreation Services program.

10-109-176 Personal Trainer Development 3 credits

ACE PREP COURSE – Students are taught the skills and information on developing exercise programs for healthy adults. This course also prepares individuals to take the American Council on Exercise National Personal Trainer exam. A broad range of topics is covered including anatomy, exercise physiology, health screening, fitness testing and more. An observational research paper on a trainer-client relationship is required. Recommend taking 10-807-160 or equivalent.

10-109-190 Recreation Seminar 1 credit

Designed to assist the graduating student with job placement. Self-evaluation and job-related skills, interests, attributes and achievements are discussed. The course reviews how to target job possibilities and includes practical interviewing. The concept of job networking is also stressed. Prerequisite: course should be taken in the final semester of the program.

10-109-195 Recreation Industry Budget and Financial Management 3 credits

Financial methods and techniques utilized in the recreation industry. Emphasis on sources and methods of financing, forecasting cost and income, budgeting, pricing, grant seeking, sponsorship, fundraising and fiscal management.

10-109-196 Principles of Outdoor Pursuits 3 credits

This course provides the fundamental knowledge, skills and experience necessary to lead people in outdoor recreational activities. The course includes topics on trip planning, safety procedures, equipment, leadership methods and expedition behavior for a variety of outdoor trip activities. Classroom as well as experiential involvement required.

10-109-197 Challenge Course Programming 3 credits

This course provides the fundamental knowledge, skills and experience necessary to lead people in outdoor recreational activities. The course includes topics on trip planning, safety procedures, equipment, leadership methods and expedition behavior for a variety of outdoor trip activities. Classroom as well as experiential involvement required.

10-109-199 Adventure Process Facilitation 3 credits

This course provides the fundamental knowledge, skills and experience necessary to lead people in outdoor recreational activities. The course includes topics on trip planning, safety procedures, equipment, leadership methods and expedition behavior for a variety of outdoor trip activities. Classroom as well as experiential involvement required. Prerequisite: 10-109-197

10-807-160 Anatomy and Physiology for Exercise 3 credits

Features lectures and activities dealing with the anatomy and physiology of the human body. Covers body systems, including respiratory, cardiovascular, skeletal, nervous and muscular systems. Presents information on chemistry, cell structure and metabolism. Units in exercise physiology and contemporary fitness issues included.

Related Courses:

10-109-144 Disney College Internship 3 credits

This course provides credit for work experience for students selected to participate in the Disney College Program at Walt Disney World in Florida.

10-109-146 Disney College Seminar 3 credits

This course provides credit for the workshops and seminars required by participants in the Disney College Program.

Career Potential:

- Recreation Programmer
- Sports Coordinator
- Aquatics Supervisor
- Activity Director
- Fitness/Health Club Specialist
- Personal Trainer
- Adaptive/Therapeutic Assistant
- Facilities and Ground Maintenance
- Parks/golf Course Assistant
- Seasonal Camp Program Director
- School-based Outdoor Program Director
- Outdoor Activity Instructor
- Challenge Course Facilitator
- Outdoor-based Entrepreneur

With additional education and/or work experience, graduates may find employment as:

- Parks, Recreation, or Camp Director
- Park Ranger
- Exercise Physiologist
- Therapeutic Recreation Specialist
- Challenge Course Director
- Director of Wilderness-based Program

More detailed and updated information on this program may be available at: madisoncollege.edu. The college reserves the right to make changes in the regulations and courses announced in this publication notice.

Madison Area Technical College provides equal opportunity in education and employment.

Renewable Energy Certificate

Certificate

Applied Engineering Program Cluster

School of Applied Science, Engineering, and Technology

Program offered at Madison Campuses

For information call: (608) 246-6800 or
(800) 322-6282 Ext. 6800

About the Certificate

The Madison College Renewable Energy Certificate is designed to provide students with the theoretical knowledge necessary for a career in energy management and renewable energy technology. Students acquire hands-on skills in troubleshooting, maintenance, installation, operation and repair and replacement of related equipment. The certificate requires a minimum of 12 credits of coursework.

Certificate credits may be combined with additional coursework to enhance traditional diploma, degree, transfer and associate programs at Madison College. The credits also may be combined with additional training, job experience and/or professional examinations to qualify for certification by national renewable energy institutions.

Incumbent trade workers and technical professionals are encouraged to investigate how a Renewable Energy Certificate may relate to their current work or business practices. Some classes are delivered in online and/or intensive short-course formats, and some classes may be offered during evenings, weekends, winter break, spring break and/or summer sessions.

Admission Requirements

To review program admission requirements and application processing dates visit the programs website at: <http://madisoncollege.edu/program-info/renewable-energy-certificate>.

Requirements for Completion

The certificate will be awarded upon completion of the requirements with a minimum of a 2.0 grade average and no course grade lower than a C. The certificate will be awarded when completion of all requirements is verified after the semester in which the last course has been completed.

Program Courses

10-140-112 Renewable Energy for the Developing World 3 credits

Students participate in a 10 day in-country service learning project in a developing world country, continuing with eight weeks of online coursework to extend their knowledge of energy production and use in the developing world.

10-414-100 DC/AC Circuits for Industry 3 credits

Study of practical DC concepts with and introduction to AC concepts. Course topics include electrical quantities and components and measurement instruments with an emphasis on DC circuits. Students analyze and construct circuits and measure voltage, current, resistance and power for both AC and DC sources. Studies principles of electricity AC components and circuits. Coverage includes combination circuits that contain Resistive Inductive and/or Capacitive properties. Emphasis on circuit troubleshooting and efficiencies. Course introduces theory and application of three-phase circuits, single phase, transformers, generators, and motors. Covers fundamentals of NEC wiring, soldering and relay ladder logic.

10-481-110 Energy Management 3 credits

The student will perform critical examinations of energy consuming facilities both domestic and commercial for the purpose of identifying energy conservation opportunities. In addition, the student will identify various energy conservation techniques as well as equipment which can be installed to further conserve energy.

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

		Credits	Hrs/week Lec-Lab
<i>Choose at least 6 credits from among these Core courses:</i>			
20-806-291	Introduction to Renewable Energy*	3	3-0
20-809-269	Energy and Society.....	3	3-0
10-481-110	Energy Management.....	3	2-2
20-806-290	Renewable Energy for International Development** OR.....	3	3-0
10-140-112	Renewable Energy for the Developing World**.....(3)	(3)	(3-0)
Total		at least 6 credits*	

<i>Choose at least 2 credits from among these Intermediate courses:</i>			
10-482-101	Intro to Wind Energy Technology	3	1-4
10-484-120	Introduction to Biofuels*	2	2-0
10-482-138	Introduction to Photovoltaic Technology.....	2	2-0
10-484-160	Introduction to Biomass Energy*	3	3-0
Total		at least 2 credits*	

<i>Choose additional credits from the following courses to reach a total of 12 credits:</i>			
10-414-100	DC/AC Circuits for Industry OR	3	0.5-5
32-414-316	DC/AC Circuits	3	4-2
10-482-103	Photovoltaic Systems and National Electric Code	1	1-0
10-482-135	Advanced Photovoltaic Elective.....	1-3	1-3-0
10-482-137	Photovoltaic Site Assessment	1	1-0
10-482-140	Grid Connected Photovoltaic System Design.....	1	1-0
10-482-141	Grid Connected Photovoltaic Systems Installation Lab	1	0-2
10-482-142	Off Grid Photovoltaic System Design	1	1-0
10-482-143	Off Grid Photovoltaic Systems Installation Lab	1	0.5-0.5
10-482-149	Photovoltaic Technical Sales.....	1	1-0
10-482-102	Wind Systems Technician 1	3	1-4
10-482-152	Wind Systems Repair/Maintenance.....	2	2-0
10-482-153	Wind Turbine Installation***	1	1-0
10-482-154	Advanced Wind Electives	1-3	1-3-0
10-482-156	Wind Turbine Design Instruction.....	3	1.5-1.5
10-484-121	Introduction to Ethanol Fuel.....	1	1-0
10-484-130	Introduction to Biodiesel Fuel***	1	1-0
10-484-161	Anaerobic Digester Technology***	1	1-0
Total		up to 4 credits	

Students must complete a total of 12 credits to earn the certificate

*Online delivery available

**Hybrid delivery: online for 8 weeks and study abroad for 2 weeks

***Three-day short-course delivery

10-482-101 Intro to Wind Energy Technology 3 credits

This course prepares the learner to assess the global energy picture; analyze the causes of wind and wind flow properties; explore small, medium, and large wind turbine designs; assess the environmental effects of wind turbines; perform business and site assessments for a wind turbine project, plan your wind turbine project, evaluate operation and maintenance of the turbine system, and analyze the future of wind energy.

10-482-102 Wind Systems Technician 1 1 credit

This course allows participants to develop essential skills and attitudes for employment to wind industry. Topics include: safety, electrical hazard, confined space, climbing practices, tool use, calibration, documentation and routine maintenance operations. Prerequisite: 10-482-101.

10-482-103 Photovoltaic Systems and the National Electric Code 1 credit



Program Courses (continued)

10-482-135 Advanced Photovoltaic Electives 1-3 credits
These Advanced Photovoltaic Courses from the MREA, SEI, and Madison College can be taken with permission from project administrators.

10-482-137 Photovoltaic Site Assessment 1 credit
Students will learn how to conduct an assessment of a location for a photovoltaic system. They will learn the qualities of an ideal location, structural concerns, the tools to use, proper documentation techniques, load analysis, energy production estimation, and concerns with existing electrical service. Students will also complete a photovoltaic site assessment as part of the course.

10-482-138 Introduction to Photovoltaic Technology 2 credits
Students will learn the basic concepts of photovoltaic systems, including how photovoltaic cells produce electricity, components and types of photovoltaic systems, the process of installing a photovoltaic system and whether and where to install a photovoltaic system. Students will also analyze utility bills, energy production, cost and incentives available for photovoltaic systems.

10-482-140 Grid Connected Photovoltaic System Design 1 credit
Students will learn the principles of photovoltaic system design for photovoltaic systems connected to the utility grid. Each student will prepare a model design. Prerequisites: 10-414-100 and 32-414-316.

10-482-141 Grid Connected Photovoltaic Systems Installation Lab 1 credit
Students will install one or more fully operational grid connected photovoltaic systems. Prerequisites: 10-414-100 and 32-414-316.

10-482-142 Off Grid Photovoltaic System Design 1 credit
Students in this course will learn the principles of photovoltaic system design for off grid photovoltaic systems. Each student will prepare a model design. Prerequisites: 10-414-100 and 32-414-316.

10-482-143 Off Grid Photovoltaic Systems Installation Lab 1 credit
Students will install one or more fully operational off grid photovoltaic systems.

10-482-149 Photovoltaic Technical Sales 1 credit
Students will learn the tools and information needed to perform in a sales position for photovoltaic contractors. Students will prepare a sales document as part of the course. Prerequisites: 10-414-100, 32-414-316, and 10-482-138.

10-482-152 Wind Systems Repair and Maintenance 2 credits
Students will visit a number of area wind turbines and learn how to do system repairs and annual maintenance. Machines from 1kW to 20kW will be covered. Work will include freestanding, guyed and tilt-up towers. This is a working class, with optional tower climbing.

10-482-153 Introduction to Wind Turbine Installation 1 credit
Students will assemble and erect a short, 60-foot guyed tilt-up tower that was constructed at the previous "Wind Turbine Design and Construction" course at the MREA, along with the wind turbine that was built there. We will also install a temporary battery-based power system and hope for some wind! It's suggested that students who take Wind Turbine Design and Construction also take this installation class. It will be a "crash course" on wind turbine installation basics, wind turbine siting, tower safety, and tilt up tower design.

10-482-154 Advanced Wind Electives 1-3 credits
These Advanced Wind Courses from the MREA and MATC can be taken with permission from project administrators.

10-482-156 Wind Turbine Design and Construction 3 credits
Develop knowledge and skills in basic electricity, wood working, metal working, resin casting, and a variety of other skills. Attendees will complete at least one 7' and one 10' diameter wind turbine and have the opportunity to build a wind machine of their own. Based upon the Homebrew Wind Power text and design, and inspired by the work of Hugh Piggott. Each turbine will be fabricated from 'scratch' and tested upon class completion. An option to purchase a completed turbine may occur in each class.

10-484-120 Introduction to Biofuels 2 credits
An introduction to solid, liquid and gaseous fuels derived from all sources. This course will cover the history of fuel use, placing petroleum into its proper context of being just one of the many alternatives being exploited by humans to fulfill current demands. Topics include the history of fuel and petroleum, peak oil, economics of petroleum and biofuels, engine design and fuel requirements, agriculture and fuels, wastes, conventional ethanol production, cellulosic ethanol, algae, other alcohols (biobutanol, etc.), biodiesel, biogas (anaerobic digestion), gasification, pyrolysis, fuel quality, environmental impacts, energy independence and national security.

10-484-121 Introduction to Ethanol Fuel 1 credit
Provides the student with a general overview of ethanol fuel. Topics covered will include fermentation and distillation chemistry, ASTM fuel testing, engine performance, and exhaust emissions. An introduction to E85 fuel systems will also be included.

10-484-130 Introduction to Biodiesel Fuel 1 credit
Provides a general overview of biodiesel fuel. Production and quality control of biodiesel fuel will be explored, and students will have the opportunity to synthesize a small scale batch of biodiesel. Topics covered will include transesterification chemistry, separation techniques, ASTM fuel testing, engine performance, and exhaust emissions.

10-484-160 Intro to Biomass Energy 3 credits
Provides an overview of energy production from biomass resources. The course explores the fundamentals of plant growth, energy yield, economics, production, and processing methods for both herbaceous and woody crops. Technologies covered include combustion, gasification, pyrolysis, fermentation, transesterification, and anaerobic digestion. Value-added bio-refining products are also examined, along with the environmental impacts of biomass energy.

10-484-161 Anaerobic Digester Technology 1 credit
Provides participants with an understanding of basic heat transfer properties as well as the biological and chemical reactions that take place in anaerobic digestion systems. Participants will also develop an in-depth knowledge of the design of anaerobic digestion systems, troubleshooting and repair methods, and workplace safety.

20-806-290 Renewable Energy for International Development 3 credits
Renewable Energy for the Developing World provides an examination of energy and economics in developing countries with special consideration given to renewable energy sources. The course combines 8-weeks of online instruction with 10 days of travel and study abroad in Costa Rica. Students will learn to specify, design, and install renewable energy systems for the developing world. Students will install operational renewable energy systems in the field with current renewable energy equipment.

20-806-291 Introduction to Renewable Energy 3 credits
This course provides an introduction to renewable energy technology. The course is grounded in the fundamentals of energy, power, and the first and second laws of thermodynamics. A scientific approach is used to examine various energy sources, including fossil fuels, nuclear, biomass, biofuels, solar, hydro, wind, geothermal, and ocean/tidal power. Various types of energy storage technology are also examined. Science and engineering challenges are examined for each energy technology, along with economic and environmental impacts. This course is suitable for any student with an interest in renewable energy, particularly those pursuing studies in scientific, technical, and engineering fields.

20-809-269 Energy and Safety 3 credits
The American experience is better understood within the context of the history of energy consumption and production. Our nation's future is inextricably connected to our resolution of the challenges we face with respect to energy. Analyses and solutions require an interdisciplinary approach. The course "Energy and Society" considers the technical, economic, political, environmental, ethical and social contexts of the topic of energy.

32-414-316 DC/AC Circuits 3 credits
Introduces the practical DC/AC concepts including electrical quantities and components and measurement instruments for AC and DC circuits used in commercial, industrial, and sustainable energy fields. Students analyze and construct circuits and measure voltage, current, resistance and power for both AC and DC sources. Covers fundamentals of NEC wiring, soldering and relay ladder logic.

Career Potential:

- Wind Turbine Engineer or Technician
- Photovoltaic Engineer or Technician
- Anaerobic Digester Engineer or Technician
- Biofuel Refinery Engineer or Technician
- Biomass Resource Engineer or Technician
- Building Systems Engineer or Technician
- Power and Utility Engineer or Technician
- Energy Policy Specialist
- Energy Manger/Analyst
- Energy Broker/Marketer

More detailed and updated information on this program may be available at: madisoncollege.edu. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

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Rev. 04/15

Respiratory Therapist

Associate in Applied Science Degree

Program Number: 10-515-1

Health-Related Professions Program Cluster

School of Health Education

Program offered at Madison Campuses

For information call:

(608) 246-6065 or (800) 322-6282 Ext. 6065 or 6697

About the Program

The Respiratory Therapist program is an intensive full-time, two-year program leading to an Associate in Applied Science degree. The program includes classroom and lab instruction, simulation experience, and clinical practice at local hospital affiliates. At Madison College, you will learn cardiopulmonary anatomy, therapeutic use of medical gases and related equipment, aerosol therapy, and bronchial pulmonary hygiene. You will also receive instruction in pharmacology, respiratory diseases, airway management, life support, rehabilitation, and long-term home care.

This program is accredited by the [Commission on Accreditation for Respiratory Care](http://www.coarc.com) (CoARC) <http://www.coarc.com>; 1248 Harwood Road; Bedford, Texas 76021-4244; (817) 283-2835

As an advanced-level respiratory therapist program, graduates are eligible to become Registered Respiratory Therapists. (RRT).

Note: Convictions of crimes or pending charges may be grounds for denial of license if the circumstances of the conviction or charge are substantially related to professional practice. Applicants should check the following website for more information:

www.dhfs.state.wi.us/caregiver or call (608) 266-5764, or contact Department of Regulation and Licensing of the State of Wisconsin.

Admission Requirements

To review program admission requirements and application processing dates visit the programs website at:

<http://madisoncollege.edu/program-info/respiratory-therapist>.

Program Requirements

1) Caregiver Background Check (CBC); refer to catalog for this Health, Human and Protective Services Policy; 2) Evidence of current CPR "Professional Level" certification before beginning the first core course. Students must maintain current CPR certification while attending the program; 3) Physical exam and completed Health History Form on file prior to October 1st of each calendar year; and 4) Essential functions for the Respiratory Care Practitioner Program.

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

		Credits	Hrs/week Lec-Lab
First Semester			
10-515-111	Respiratory Survey	3	3-0
10-801-195	Written Communications * OR.....	3	3-0
10-801-201	English 1*.....	(3)	(3-0)
10-501-101	Medical Terminology*.....	3	3-0
20-806-206	General Anatomy and Physiology* #.....	4	3-2
10-806-134	General Chemistry* OR.....	4	4-0
20-806-201	General Org. & Bio Chemistry.....	(5)	(4-2)
Semester Total		17	

Second Semester			
20-806-273	Microbiology* OR.....	4	3-3
20-806-274	General Microbiology*.....	(5)	(3-4)
10-515-171	Respiratory Therapeutics 1 (9 weeks).....	3	4-4
10-515-172	Respiratory Therapeutics 2 (9 weeks).....	3	4-4
10-515-173	Respiratory Pharmacology.....	3	3-0
10-515-174	Respiratory/Cardiac Physiology.....	3	3-0
Semester Total		16	

Third Term (Interim/Summer Session)			
10-515-175	Respiratory Clinical 1.....	2	0-36
10-801-198	Speech* OR.....	3	3-0
20-810-201	Fundamentals of Speech* OR.....	(3)	(3-0)
20-810-205	Interpersonal and Small Group Communication* OR.....	(3)	(3-0)
10-801-196	Oral/Interpersonal Communication* OR.....	(3)	(3-0)
20-801-202	English Composition 2*.....	(3)	(3-0)
Semester Total		5	

Fourth Semester			
10-515-176	Respiratory Disease.....	3	3-0
10-515-112	Respiratory Airway Management.....	2	1-2
10-515-113	Respiratory Life Support.....	3	2-2
10-515-178	Respiratory Clinical 2 (9 weeks).....	3	0-18
10-515-179	Respiratory Clinical 3 (9 weeks).....	3	0-18
10-809-197	Contemporary American Society* OR.....	3	3-0
20-809-203	Introduction to Sociology*.....	(3)	(3-0)
Semester Total		17	

Fifth Semester			
10-515-180	Respiratory Neo/Peds Care.....	2	2-0
10-515-181	Respiratory/Cardio Diagnostics.....	3	2-1
10-515-182	Respiratory Clinical 4/ACLS (9 weeks).....	3	0-18
10-515-183	Respiratory Clinical 5 (9 weeks).....	3	0-18
10-515-184	Neonatal Pediatric Resuscitation (NRP)**.....	1	1-0
10-809-199	Psychology of Human Relations* OR.....	3	3-0
20-809-231	Introduction to Psychology*.....	(3)	(3-0)
Semester Total		15	

* Courses which may be taken prior to entering the program and may be taken at the college transfer level or Associate Degree level.

If 20-806-207 Anatomy and Physiology 1 and 20-806-208, Anatomy and Physiology 2 are both taken, it will take the place of General Anatomy & Physiology.

Note: A copy of the [essential functions](#) necessary to successfully complete the program of study is available on the Madison College web site.

**Must be active in the Respiratory Therapy program to enroll in this course.

All 515 subject courses must be taken in total each semester in the order listed above, as each semester's courses pre-requisite for the subsequent semester's courses.



Program Courses

10-515-111 Respiratory Therapy Survey 3 credits

Examines the role of the Respiratory Therapist within the healthcare community. Reviews the ethical, legal, and regulatory principles that guide practice across diverse populations. Introductory patient assessment and critical thinking processes used in the development of respiratory care plans are explored. Prerequisite: Acceptance into the Respiratory Therapist program. Co-requisites: 20-806-206 and 10-806-134.

10-515-112 Respiratory Airway Management 2 credits

Focuses on adult respiratory critical care including management of artificial airways. Prerequisite: 10-515-175. Co-requisites: 10-515-113, 10-515-176, 10-515-178, 10-515-179.

10-515-113 Respiratory Life Support 3 credits

Focuses on adult respiratory critical care including management of mechanical ventilation. Prerequisite: 10-515-175. Co-requisites: 10-515-112, 10-515-178, and 10-515-179.

10-515-171 Respiratory Therapeutics 1 3 credits

Introduces the topics of medical gas administration and humidity and aerosol therapy. The learner will apply physics, math and patient assessment concepts to oxygen, aerosol and humidity therapy. Prerequisite: 10-515-170. Co-requisites: 10-515-172, 10-515-173, and 10-515-174.

10-515-172 Respiratory Therapeutics 2 3 credits

Introduces therapeutic procedures including arterial puncture, bronchial hygiene, lung expansion therapy, and pulmonary rehabilitation. Co-requisite: 10-515-171, 10-515-173, and 10-515-174.

10-515-173 Respiratory Pharmacology 3 credits

Examines basic pharmacology principles, drug dosage, and calculations. Medications for inhalation including mucolytics, bronchodilators, and anti-inflammatories. Also includes cardiac drugs, anesthetic drugs, neuromuscular blockers, and antimicrobials. Co-requisites: 10-515-171, 10-515-172, and 10-515-174.

10-515-174 Respiratory/Cardiac Physiology 3 credits

Provides the student with an in-depth knowledge of the structure and function of the respiratory and circulatory systems necessary to function as a competent Respiratory Therapist. Co-requisite: 10-515-171, 10-515-172, and 10-515-173.

10-515-175 Respiratory Clinical 1 2 credits

Introduces respiratory Therapy practice in the hospital setting. Includes the development of skills such as basic therapeutics, patient assessment, medical record review, safety practices, patient interaction, and communication. Prerequisite: 10-515-173.

10-515-176 Respiratory Disease 3 credits

Exploration of signs, symptoms, causes, progression, and treatment of obstructive, restrictive and infectious diseases or disorders of the body that affect the respiratory system. Prerequisite: 10-515-175. Co-requisites: 10-515-113, 10-515-178, and 10-515-179.

10-515-178 Respiratory Clinical 2 3 credits

Continued development of Respiratory Therapy clinical skills including respiratory therapeutics. Focuses on monitoring, analyzing and interpreting data to make appropriate modifications in patient care. This course includes the complete program competency list. At the completion of Clinical 2, learners must demonstrate competence in a minimum of 12 (required and/or simulated) competencies. The instructor may identify specific competencies to be addressed during this clinical. Prerequisite: 10-515-175.

Co-requisites: 10-515-176, 10-515-113, and 10-515-179.

10-515-179 Respiratory Clinical 3 3 credits

Continued development of Respiratory Therapy clinical skills including respiratory therapeutics. Focuses on monitoring, analyzing and interpreting data to make appropriate modifications in patient care. This course includes the complete program competency list. At the completion of Clinical 3, learners must demonstrate competence in a minimum of 19 (required and/or simulated) competencies. The instructor may identify specific competencies to be addressed during this clinical. Prerequisite: 10-515-175.

Co-requisites: 10-515-176, 10-515-113, and 10-515-178.

10-515-180 Respiratory Neo/Peds Care 2 credits

Provides a comprehensive orientation to the field of neonatal and pediatric respiratory care to include fetal development, birth, neonatal physiology, pulmonary dynamics, abnormal cardiopulmonary conditions, disease, noninvasive and invasive therapeutic interventions. Prerequisite: 10-515-176.

Co-requisites: 10-515-181, 10-515-182, and 10-515-183.

10-515-181 Respiratory/Cardio Diagnostics 3 credits

Advanced invasive and noninvasive diagnostic cardiopulmonary procedures including pulmonary function, hemodynamics and rescue medicine. Prerequisite: 10-515-176.

Co-requisites: 10-515-180, 10-515-182, and 10-515-183.

10-515-182 Respiratory Clinical 4/ACLS 3 credits

Continued development of Respiratory Therapy clinical skills including respiratory therapeutics. Focuses on monitoring, analyzing and interpreting data to make appropriate modification in patient care. This course includes the complete program competency list. At the completion of Clinical 4, learners must demonstrate competence in a minimum of 26 (required and/or simulated) competencies. The instructor may identify specific competencies to be addressed during this clinical. Prerequisite: 10-515-176. Co-requisites: 10-515-180, 10-515-181, 10-515-183.

10-515-183 Respiratory Clinical 5 3 credits

Focuses on the completion of respiratory therapy competencies and transition to employment. This course includes the complete program competency list. At the completion of this clinical learners must demonstrate competence in all of the required and/or simulated competencies. The instructor may identify specific competencies to be addressed during this clinical. Prerequisite: 10-515-176. Co-requisites: 10-515-180, 10-515-181, 10-515-182.

10-515-184 Neonatal Pediatric Resuscitation (NRP) 1 credit

Provides the student with the practice, theory and skills needed to provide advanced ventilator and resuscitation to infants and children. Prerequisites: 10-515-113, 10-515-176. Co-requisites: 10-515-180, 10-515-181, 10-515-182, and 10-515-183.

Career Potential:

▪ **Respiratory Care Practitioner**

With additional education and/or work experience, graduates may find employment as:

- **Pulmonary Function Technologist**
- **Respiratory Care Manager**
- **Respiratory Care Supervisor**
- **Neonatal/Pediatric Therapist**
- **Respiratory Care Educator**
- **Pulmonary Rehabilitation Therapist**
- **Sleep Disorder Therapist**
- **Home Care Therapist**
- **Pulmonary Research Assistant**

More detailed and updated information on this program may be available at: madisoncollege.edu. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

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Rev. 04/15

Retail Management Certificate

Program Number: 90-104-4

Certificate

Business and Marketing Program Cluster

School of Business and Applied Arts

Program offered online only

For information call:

(608) 246-6003 or (800) 322-6282 Ext. 6003

About the Certificate

The Retail Management certificate is designed to update and/or broaden the knowledge of employees in the field of retail management. Ideal candidates would be students currently working in retail, food service, or other sales industry positions or have other experiences in one of these fields.

The certificate will acquaint students with the various job duties and work ethic involved with working in the retail industry. Students will be introduced to standard industry reports that are used to support recommendations for improvement relating to operations, finance, human resources, and merchandising. Students will increase their skills and confidence in the areas of supervising, hiring, training, and providing leadership effectively.

Classes are available in hybrid or face-to-face format. Classes are offered online.

Admissions Requirements

To review admissions program requirements and application processing dates visit the programs website at: <http://madisoncollege.edu/program-info/retail-management-certificate>

Requirements for Completion

The certificate will be awarded upon completion of the requirements with a minimum of a 2.0 grade average and no course grade lower than a C. The certificate will be awarded when completion of all requirements is verified after the semester the last course has been completed.

Career Potential:

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

Courses	Credits	Hrs/week	
		Lec	
10-104-124 Retail Management***	3	3-0	
10-196-191 Principles of Supervision OR	3	3-0	
10-104-160 Sales Management	(3)	3-0	
10-104-123 Merchandising Planning and Control* ***	3	3-0	
10-104-194 Visual Merchandising** ***	3	3-0	

Notes:

Courses should be taken in the order listed above. Retail Management must be taken first. *Currently offered only in the fall semester. **Currently offered only in the spring semester. ***Six week accelerated online.

This certificate may be offered in an accelerated method for a cohort group. For more information, contact Betty Hurd at 608-246-6486 or bhurd@madisoncollege.edu.

Course Descriptions

10-104-124 Retail Management 3 credits
Upon successful completion of this course, the student should be able to describe and analyze retail store organization and operation including customer markets, store location and design, human resource management, merchandise planning and control, and retail promotion.

10-104-123 Merchandise Planning and Control 3 credits
Students analyze the buying and merchandising functions in various types of organizations. The principles, procedures and techniques practiced by merchandisers are studied. Students may have the opportunity to interview a buyer, visit a market, participate in a floor move in a local business, compile a resource folder of relevant tools for buyers, and/or complete a computer simulation. Prerequisites: 10-104-194, 10-104-195, 10-104-196, 10-104-197, or instructor consent. Prerequisites will be waived for certificate students. Contact the department office (608-246-6003) to register for this class.

10-104-160 Sales Management 3 credits
The role of the Manager in the Sales process is explored in this advanced sales class. Creating a sales program, developing your sales force, motivating sales people, and developing companies to be more selling focused will all be explored through research, case studies, practical applications and projects. Sales skills will be enhanced through the role of a strong Sales Manager. Prerequisite: 10-104-104 or Instructor consent.

10-104-194 Visual Merchandising 3 credits
The principles and elements of design are incorporated into interior and exterior merchandise presentation. Coordination of the total sales promotion effort is emphasized. Students are required to build many types of displays. This course includes experience in a retail outlet.

10-196-191 Principles of Supervision 3 credits
The learner applies the skills and tools necessary to perform the functions of a front line manager. Each learner will demonstrate the application of strategies to make the transition to a contemporary supervisory role including: operations planning and analysis, delegation, staffing, problem solving, motivation, training, leadership and performance assessment.



Risk Management & Insurance Certificate

Program Number: 90-162-1

Certificate

Business and Marketing Program Cluster

School of Business and Applied Arts

Program offered at Madison Campuses

For information call:

(608) 246-6003 or (800) 322-6282 Ext. 6003

About the Certificate

Wisconsin is home to approximately 250 insurance companies, the 4th highest in the country ranking insurance 5th in Wisconsin's Top 5 Industries and paying wages approximately 45% higher than other industries in the state. Nationally, the industry anticipates needing to fill 400,000 positions by the year 2020.

There is a lack of educational programs in Wisconsin geared toward a quick and easy method to prepare students for employment in insurance. To address this need, this Risk Management & Insurance Certificate utilizes accelerated learning to provide students with a basic understanding of the insurance industry and its products to enable entrance into the insurance workforce.

This series of courses is a great addition for those who already have earned an Associate's or Bachelor's Degree and would like a specific focus in risk management and insurance. Students who have experience in a different industry and are interested in a career change will find this program is an efficient and effective method to gaining insurance knowledge. Students working towards an Associate Degree in programs in any focus in Business, IT, Criminal Justice, Construction or Auto Body will also find this certificate an efficient pathway to using their degree in the insurance industry.

Many of the courses also qualify for continuing education credits for licensed intermediaries in Wisconsin. Students searching for continuing education credits will find these certificate courses very beneficial.

Admissions Requirements

To review admissions program requirements and application processing dates visit the programs website at: <http://madisoncollege.edu/program-info/risk-management-insurance-certificate>.

Unique Requirements for Completion

The certificate will be awarded upon completion of the requirements with a minimum of a 2.0 grade average and no course grade lower than a C. The certificate will be awarded when completion of all requirements is verified after the semester the last course has been completed.

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

Courses	Credits	Hrs/week	
		Lec-Lab	Occ
10-162-125 Introduction to Business Insurance Contracts.....	3	3	0
10-162-126 Introduction to Loss Investigations	3	3	0
10-162-131 Introduction to Employee Benefits OR	1	1	0
10-162-136 <i>Current Issues in Risk Management & Insurance...</i> (1)	1	1	0
10-162-133 Managing Business Risks	3	3	0
10-162-135 Detecting Employee Fraud	3	3	0
10-162-140 <u>Risk Management and Insurance Internship.....</u>	<u>2</u>	<u>0</u>	<u>0-8</u>
Total	15		

(*Students earning an Associate Degree in Finance or Business Management may use these courses towards an Emphasis in Risk Management & Insurance. See your program curriculum sheet or advising report for specific choices.)



**Madison Area Technical College
Risk Management & Insurance Certificate**

Program Number: 90-162-1

Courses

10-162-125 Introduction to Business Insurance Contracts 3 credits

This course provides an understanding of the insurance protection any business should have. Whether you plan on owning your own business or managing a business or department, this course provides valuable information. A comprehensive study of policy language and coverage for Commercial General Liability, Commercial Auto, Worker's Compensation, Crime, Bonds, Umbrella, the BOP and Commercial Property is reviewed.

10-162-126 Introduction to Loss Investigations 3 credits

The claim function, factors influencing claims, the steps involved in analyzing, negotiating, and litigating first and third party claims, and the basics of property and liability losses will be covered in this class.

10-162-131 Introduction to Employee Benefits 1 credit

This course focuses on the principles of individual and group health coverage, disability insurance, individual and group life insurance, paying life insurance proceeds, ownership rights, beneficiaries, and supplemental benefits of life insurance.

10-162-133 Managing Business Risks 3 credits

This course will serve as a core. Risk Management is a foundational concept in insurance today. The legal foundations of loss exposures, the risk management process, and risk management programs will be discussed for all areas.

10-162-135 Detecting Employee Fraud 3 credits

The course will cover all of the major methods employees use to commit occupational fraud. Students learn how and why occupational fraud is committed as well as how the conduct can be detected, deterred, investigated and resolved.

10-162-136 Current Issues in Risk Management & Insurance 1 credit

This course focuses on trends and issues facing the Risk Management and Insurance Industries. Presentations on current topics, and tours of facilities, are provided by Risk Management firms and Insurance organizations. Locations vary each semester but travel is required with this course. Check with the instructor for current travel plans and costs prior to enrolling.

10-162-140 Risk Management & Insurance Internship 2 credits

Provides an opportunity for students to apply insurance and/or risk management skills in a real life business environment. These paid internships may be in insurance agencies, insurance companies or other risk management settings. Duties may vary depending on the opportunity. Written assignments affiliated with the internship will also be required. Reserved for students enrolled in Insurance & Risk Management studies either in the Certificate program or as a focus in their current major. Students must have completed at least one degree credit insurance course.

More detailed and updated information on this program may be available at: madisoncollege.edu. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

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Sales Academy Certificate

Program Number: 90-104-2

Certificate

Business and Marketing Program Cluster

School of Business and Applied Arts

Program offered at Madison and Fort Atkinson Campuses

For information call: (608) 246-6003 or
(800) 322-6282 Ext. 6003

About the Certificate

The Sales Academy Certificate is a certificate program for individuals interested in maintaining or pursuing careers in the marketing/sales industry. The certificate is designed for updating and/or broadening the knowledge of employees in the field of Marketing with an emphasis in Selling. This certificate does not require an application to the college. Students register for individual courses during the open registration period each semester.

Admissions Requirements

To review admissions program requirements and application processing dates visit the programs website at:
<http://madisoncollege.edu/program-info/sales-academy-certificate>

Requirements for Completion

The certificate will be awarded upon completion of the requirements with a minimum of a 2.0 grade average and no course grade lower than a C. The certificate will be awarded when completion of all requirements is verified after the semester the last course has been completed.

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

Courses	Credits	Hrs/week	
		Lec	
10-104-104 Selling Principles	3	3	0
10-104-108 Business to Business Sales	3	3	0
10-104-124 Retail Management	3	3	0
10-104-160 Sales Management.....	3	3	0
Total	12		

Courses

10-104-104 Selling Principles 3 credits

Acquaints students with the basic principles and applications of the sales process as they apply to industrial, wholesale and retail selling situations. Includes prospecting and qualifying, planning and pre-approaching, approaching the customer, the sales presentation/demonstration, handling objections, closing the sale and post-sale service and follow-up.

10-104-108 Business to Business Sales 3 credits

This advanced sales class explores the world of business-to-business selling. Topics explored include Negotiation Skills, Territory Management, Prospecting/Qualifying, Consultative Sales, Trade Show Selling, Relationship Building and Selling in the E-Business Realm. Case studies, role plays and sales exercises will all be practiced to broaden and deepen selling skills. The course is recommended for both new sales professionals and is a perfect refresher or skill-building course for seasoned veterans.

10-104-124 Retail Management 3 credits

This course focuses on the concepts, theories, and hands on skills of managing a retail operation. Key areas of emphasis are management, operations, human resources, merchandising, loss prevention and the supply channel.

10-104-160 Sales Management 3 credits

The role of the Manager in the Sales process is explored in this advanced sales class. Creating a sales program, developing your sales force, motivating sales people, and developing companies to be more selling focused will all be explored through research, case studies, practical applications and projects. Sales skills will be enhanced through the role of a strong Sales Manager.

More detailed and updated information on this program may be available at: madisoncollege.edu. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

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Small Business Entrepreneurship

Program Number: 31-145-1

One-Year Technical Diploma

Business and Marketing Program Cluster

School of Business and Applied Arts

Program offered at Madison Campuses

For information call: (608) 243-4321, (608) 246-6560 or
(800) 322-6282 Ext. 4321 or 6560

About the Program

The Small Business Entrepreneurship Program provides prospective small-business owners/entrepreneurs with the principles involved in planning and operating a small business. Attention is given to small business appraisal and opportunities; developing a written business/marketing plan; and advertising, public relations, direct mail and sales promotion plans. Marketing concepts include planning, forecasting, segmentation, product strategy, product mix, pricing and distribution. The program also provides an introduction to the basic principles, concepts and theories of business and non-business selling, and their application to an actual sales presentation. Special attention is given to personal development and self-image concepts.

Admissions Requirements

To review admissions program requirements and application processing dates visit the programs website at:
<http://madisoncollege.edu/program-info/small-business-entrepreneurship>.

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

		Hrs/week	
		Credits	Lec-Lab
First Semester			
10-103-133	Excel-Beginning.....	1	0.25-1.5
10-103-137	Word-Beginning.....	1	0.25-1.5
10-103-143	PowerPoint-Beginning.....	1	0.25-1.5
10-145-105	Operations Management.....	3	3-0
10-145-106			
10-145-185	Customer Service Management.....	3	3-0
10-801-195	Written Communications.....	3	3-0
10-804-123	Math with Business Applications.....	3	3-0

Second Semester			
10-101-106	Accounting Fundamentals.....	3	3-0
10-104-104	Selling Principles.....	3	3-0
10-145-102	Small Business Development.....	3	3-0
10-145-108	Field Experience Seminar.....	2	1-8
10-196-191	Principles of Supervision.....	3	3-0

Semester Total **17**

*Technical Course Selection Options:

10-102-160	Business Law 1	3 credits
10-104-111	Innovative Trends in Marketing	3 credits
10-104-114	Social Media Campaigns	3 credits
10-104-118	Store Operations	3 credits
10-104-169	Internet Marketing	3 credits
10-104-180	International Marketing	3 credits
10-145-117	Introduction to Entrepreneurship	3 credits

Notes:

(advising report) in their student center for any in lieu of

Madison Area Technical College
Small Business Entrepreneurship

Program Number: 31-145-1

Program Courses

10-101-106 Accounting Fundamentals 3 credits

Surveys accounting principles and practices with an emphasis on interpretation, rather than preparation, of financial statements. Presents basic business terminology, cash basis and accrual basis accounting, ratio analysis, payroll and budgeting. This class is not for students majoring in accounting.

10-103-133 Excel-Beginning 1 credit

Introduction to Excel spreadsheet software. Create, edit, save, format, print, perform calculations, copy/move text and formulas, create charts, create complex formulas and expand use of functions. Required: competency in Windows.

10-103-137 Word-Beginning 1 credit

Introduction to Microsoft's word processing software. Create, edit, save, format and print basic documents; cut/copy/paste and find/replace text; apply font styles and effects; add bullets and numbering; work with tabs and indents; align text; apply borders and shading; use wizards and templates to produce documents; insert headers/footers; apply different formatting to document sections; create columns; insert Clip Art. Create and format tables, modify rows and columns, perform calculations, sort table data, customize tables. Required: competency in Windows.

10-103-143 PowerPoint-Beginning 1 credit

Introduction to PowerPoint presentation software. Create, edit, save, and print a presentation. Insert clip art, apply animation and slide transition effects, import text, customize background and bullets, create a table and a chart, create a WordArt object, and create a Webpage from a PowerPoint slide. Required: competency in Windows and experience using word processing software.

10-104-104 Selling Principles 3 credits

Acquaints students with the basic principles and techniques of the sales process as they may apply to professional selling situations. This would include prospecting and qualifying, planning and pre-approaching, approaching the customer, the sales presentation/demonstration, handling objections, closing the sale, service and follow-up.

10-145-102 Small Business Development 3 credits

Provides an introduction to prospective small business owners to the principles involved in planning and operation. Attention is given to small business appraisal and opportunities. Emphasis will be placed on factors that contribute to a successful business operation.

10-145-105 Operations Management 3 credits

Small-business management strategies are applied to policies and operations. Included are applications to budgeting, marketing potentials, forecasting, layout, staffing, work flow, scheduling and general business applications. Ecommerce is also explored.

10-145-106 Small Business Marketing 3 credits

Developing and refining the marketing and promotion plans for a small business. Topics for discussion include merchandise/service resources, budgeting, study of competition, market segmentation, pricing, promotion, non-media ways to get customers to come to your business and strategic planning.

10-145-108 Field Experience Seminar 2 credits

Employment in an approved occupation related to the student's future business plans is a prerequisite. Reports and discussion in class are coordinated with student employment. Employee appraisal, evaluation and harmony on the job will also be topics of discussion. The course requires a minimum of 144 hours of employment.

10-145-185 Customer Service Management 3 credits

Examines the general state of customer service in organizations for both internal and external customers. Explores how a business can enhance their competitive position by adopting and implementing a variety of strategic service initiatives. Topics range from practical communication skills to analyzing strategies used by top companies.

10-196-191 Principles of Supervision 3 credits

The learner applies the skills and tools necessary to perform the functions of a front line manager. Each learner will demonstrate the application of strategies to make the transition to a contemporary supervisory role including: operations planning and analysis, delegation, staffing, problem solving, motivation, training, leadership and performance assessment.

Technical Course Selection

One (1) course is required check prerequisites

- 10-102-160 Business Law 1
- 10-104-111 Innovative Trends in Marketing
- 10-104-114 Social Media Campaigns
- 10-104-118 Store Operations
- 10-104-169 Internet Marketing
- 10-104-180 International Marketing
- 10-145-117 Introduction to Entrepreneurship

Career Potential:

- Business Owner/Manager
- Entrepreneur
- Manager of Small Business
- Department Manager
- Merchandising Manager
- Sales Representative
- Sales Associate

Student may desire more specialty education depending on the type of business being planned.

More detailed and updated information on this program may be available at: madisoncollege.edu. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

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Rev. 04/15

Social Media Certificate

Program Number: 90-201-2

Certificate

School of Business and Applied Arts

Program offered at Madison campuses.

For information call:

(608) 246-6003 or (800) 322-6282 Ext. 6003

About the Certificate

This certificate is intended for professionals in marketing, Web design and development, graphic design, journalism, visual communications/media design, customer service, and others who want to implement social media more effectively.

There are no prerequisite courses for the three required courses. Students are required to have basic computer skills.

Students need only to complete the curriculum requirements (three required courses and one elective course).

Admissions Requirements

To review admissions program requirements and application processing dates visit the programs website at:

<http://madisoncollege.edu/program-info/social-media-certificate>

Requirements for Completion

The certificate will be awarded upon completion of the requirements with a minimum of a 2.0 grade average and no course grade lower than a C. The certificate will be awarded when completion of all requirements is verified after the semester the last course has been completed.

Certificate Courses

10-104-114 Social Media Principles 3 credits

Social media has transformed advertising from a long-term mass medium to a one-to-one communication utilizing almost instant feedback. How businesses are using social media as advertising tools as well as how to create and deploy a social media campaign will be the main focus of this class. Additionally, the history and development of social media platforms such as Facebook, YouTube, Twitter and LinkedIn will be explored, as well as the many ethical and potential legal concerns that have arisen over these new forms of communication. Finally, the concept of viral marketing will be examined and how it allows a social message to explode a message to millions of users in a brief time.

10-104-115 Capstone Campaign 3 credits

Creating a full real-world advertising campaign for a local business is the core of this final capstone class. Students will discover needs, conceptualize, creating and deploying a multi-media advertising campaign using both digital/social media channels, as well as traditional mass media channels. Emphasis on individual work as well as a written group campaign proposal (presented to client) will be part of this final project. Some outside of class time will be needed.. Prerequisites: 10-104-102

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

Three Required Courses		Credits	Hrs/week Lec-Lab
10-104-114	Social Media Principles	3	3-0
10-201-198	Social Media/Web Design Strategies	3	3-0
20-801-262	<u>Social Media Writing</u>	<u>3</u>	<u>3-0</u>
Total		9	

One Elective

Students must also complete at least one course (minimum 3 credits) in the following electives:

10-104-115	Capstone Campaign	3	3-0
10-104-162	Social Media-Mobile Marketing.....	3	3-0
10-206-143	Digital Storytelling	3	3-3
20-801-253	Documentary Storytelling.....	3	3-3
20-809-291	<u>Technology and Society</u>	<u>3</u>	<u>3-0</u>
Total		(at least) 3	



Certificate Courses (cont'd)

10-104-162 Social Media – Mobile Marketing 3 credits

Mobile internet usage continues to explode and it has been predicted that it will overtake desktop internet usage in the next five years. Successful businesses need to understand the current mobile landscape and how to harness the power of mobile marketing to reach key target markets. This survey course will examine how mobile marketing fits into your overall digital and social media strategy. We will investigate geo-marketing, localized marketing, designing for mobile media, mobile websites, mobile advertising, m-commerce and mobile spending, SMS and mobile apps. Students will develop a creative mobile marketing campaign that integrates with a traditional marketing plan.

10-201-198 Social Media/Web Design Strategies 3 credits

Projects in this course will include online research, case studies and class exercises. This course will give students skills to make good Web design decisions by researching and understanding website architecture, usability, search engine optimization, keywords, link building, web site indexing and web site analysis. Students will analyze websites and develop search engine optimization proposals for real clients and develop an html based email campaign. Students will investigate the use of various social media applications including blogs, Twitter and virtual worlds.

10-206-143 Digital Storytelling 3 credits

In this course the student will write and produce a quality digital documentary and post it on the Internet. Curriculum includes: different aspects of social media as it pertains to digital media, script/story writing, video camera handling, in-the-field video techniques, video capturing, digital video editing and audio enhancement, video exporting and appropriate compressions and uploading compressed video to the Internet.

20-801-253 Documentary Storytelling 3 credits

Documentary Storytelling is an introduction to the craft of telling non-fiction and news stories through the medium of digital video. This course will teach news reporting and writing skills needed for the documentary format, along with journalism theory, law, and ethics of video journalism. Students will also learn basic digital camcorder operation, storyboard development, video editing, sound editing, and podcasting. Pre-requisite: English 1 or Written Communications.

20-801-262 Social Media Writing 3 credits

This course examines the rhetorical and publishing strategies used for innovative new media formats, in particular social media platforms. Students will look at the differences between linear and interactive writing, interactive publishing, and the role of the interactive writer. An emphasis is placed on the skills needed for quality storytelling via social media communication. Students will also learn how social media platforms can be used as researching tools (i.e. crowd sourcing), and they will implement social media research campaigns. Throughout the course, the students writing and research work will be showcased as text, video, and audio stories published on their own Web/Blog sites.

20-809-291 Technology and Society 3 credits

Introduces students to the field of Science and Technology Studies (STS). Students explore the ways in which science and technology impact our everyday lives from a sociological perspective. Following an initial examination of the history of STS, scientific and technological revolutions, major schools of thought in the field of STS, and the role of science and technology in our everyday lives, students will focus on applied areas of science and technology using the life sciences and social media as case studies. Course work centers on current topics that our society is grappling with such as surveillance, body politics, medical applications, the role of the market in science and technology, and the consequences of the speed and ease of the use of technology in the twenty-first century. Throughout the semester, students will critically reflect upon personal, community, and societal issues that arise out of science and technology through discussion and debate. Prerequisite: COMPASS Reading score 65 or greater OR Academic Reading 5/6, 77858752 with a grade of B/C or higher.

Career Potential:

- Advertising
- Communications/Public Relations
- Journalism
- Web/Interactive/Graphic Design
- Marketing
- Social Networking Media Specialist
- Digital Videography
- Media Copywriter/Editor
- Information Technology
- Media Strategist/Planner

More detailed and updated information on this program may be available at: madisoncollege.edu. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

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Rev. 04/15

Stem Cell Technologies Certificate

Program Number: 90-007-3

Certificate

Biotechnology and Electron Microscopy Program Cluster
 School of Applied Science, Engineering, and Technology
 Courses offered at Madison Campus

For information contact: Thomas Tubon, Ph.D.,
tubon@matcmadison.edu, 608 246-6875

About the Certificate

This is a two-semester evening program for individuals with a BS or AAS (or equivalent) in the biological sciences who want to enter the exciting field of stem cell technologies and regenerative medicine. Courses in this program include intensive, hands-on work with stem cells and mammalian cell cultures.

Admission Requirements

To review program admission program requirements and application processing dates visit the programs website at: <http://madisoncollege.edu/program-info/stem-cell-technologies-certificate>.

Career Potential:

- Stem Cell Specialist, research setting
- Stem Cell Specialist, production setting

More detailed and updated information on this program may be available at: madisoncollege.edu. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

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Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

		Hrs/week	Credits Lec-Lab
First Semester			
10-007-118	Introduction to Human Stem Cell Concepts	1	1-0
10-007-116	Introduction to Human Stem Cell Methods.....	3	0-6
Second Semester			
10-007-119	Advanced Human Stem Cell Concepts	1	1-0
10-007-117	Advanced Human Stem Cell Methods	3.....	0-6
Semester Total			4

Note: All Stem Cell Technologies courses require a grade of C or better in order to receive the certificate.

Certificate Courses

10-07-116 Introduction to Human Stem Cell Methods 3 credits
 Covers the basic methods of working with mammalian cell culture, to include aseptic techniques, media preparation, passaging and maintenance of cell lines. Students will work with hESC cultures to thaw, plate, feed, passage cells, and generate embryoid bodies. Molecular characterization includes chromosomal staining and immunodetection and imaging of cell pluripotency markers. Instruction will include imaging, including light, fluorescence, and photomicroscopy. Using cultured cells in a regulated environment will be introduced. Prerequisites: 10-007-115 and 10-007-123; Co-requisite: 10-007-118, or consent of instructor.

10-07-117 Advanced Human Stem Cell Methods 3 credits
 Students will continue to maintain and characterize the hESC embryoid bodies generated in Course I. Observations and relevance for spontaneous hESC differentiation will be discussed in detail. Methods for directed differentiation of hESC, iPSC, and adult stem cells into neurons and cardiomyocytes will be introduced. An emphasis on photo-documentation and assembly of a portfolio of results and observations will be submitted for evaluation. Prerequisite: 10-007-116.

10-07-118 Introduction to Human Stem Cell Concepts 1 credit
 Provides a historical perspective on the identification and use of stem cells, emphasizing practical applications towards regenerative biology in research and industry. Review and discuss scientific articles that establish the foundation for working with stem cells for regenerative medicine, applied and basic research. Prerequisite: 10-007-115, or consent of instructor.

10-07-119 Advanced Human Stem Cell Concepts 1 credit
 Introduction of emerging methodologies in the stem cell field, to include adult stem cells, iPSC technologies, relevant cell signaling pathways, and cell differentiation. Current research and industry applications will be discussed. Survey the scientific and popular press to introduce emerging themes and applications in the field of stem cells. Prerequisites: 10-007-115 and 10-007-118, or consent of instructor.



Supervisory Management

Program Number: 10-196-1

Associate in Applied Science Degree

Business and Marketing Program Cluster

School of Business and Applied Arts

Program offered at Madison, Fort Atkinson, Portage, Reedsburg and Watertown Campuses plus Online

For information call: (608) 258-2370, (608) 258-2372 or (800) 322-6282 Ext. 2370 or 2372

About the Program

The Supervisory Management Program is designed to meet the increasing demand for trained supervisors. Program content provides hands-on supervisory preparation for present and future supervisors through a curriculum divided into three development areas: Core Management Skills, Personal (Self-Management) Skills and Leadership Skills Development.

Class Delivery Formats:

Accelerated Delivery – reduces in-class time commitment by 50 percent. Classes meet one night each week, and students can complete Supervisory Management core courses in 18 months. Related study requirements are also available in accelerated format.

Online – offers learners the ability to complete their Supervisory Management & Leadership Development Associate Degree program courses and degree completely online.

Hybrid Classes – combines online instruction with the right amount of face time with your instructor and classmates. Meet in class for part of the semester and work online for the rest! Hybrid classes combine the best of traditional face-to-face teaching with innovative online adult learning methods. Students will be expected to attend the scheduled face-to-face class sessions, but the number and/or length of the classroom time will vary depending on the nature of the course and instructor. The online instruction component will promote student engagement through enhanced interaction with course material.

Traditional Classroom Semester Classes - provides students with regular semester-long classes on campus. Classes meet (face-to-face) one evening per week for the semester.

Admissions Requirements

To review admissions program requirements and application processing dates visit the programs website at:

<http://madisoncollege.edu/program-info/supervisory-management>.

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

		Hrs/week	
		Credits	Lec-Lab 10-
Supervisory / Core Management Skills			
196-191	Principles of Supervision.....	3	3-0
10-196-192	Foundations of Quality	3	3-0
10-196-193	Human Resource Management.....	3	3-0
10-196-134	Legal Issues for Supervisors.....	3	3-0
10-196-188	Project Management.....	3	3-0
10-196-136	Safety in the Workplace OR	3	3-0
10-196-105	Occupational Trends & Issues.....	(3)	(3-0)

Supervisory / Personal Skills			
10-196-164	Personal Skills for Supervisors	3	3-0

Supervisory / Leadership Skills Development			
10-196-190	Leadership Development.....	3	3-0
10-196-168	Organizational Development. OR	3	3-0
10-196-116	Human Behavior at Work	(3)	(3-0)
10-196-189	Team Building and Problem Solving.....	3	3-0
10-196-169	<u>Diversity and Change Management.....</u>	<u>3</u>	<u>3-0</u>
Total		33	

Related Study Requirements			
10-101-106	Accounting Fundamentals.....	3	3-0
10-102-160	Business Law OR	3	3-0
10-102-168	Employment Law.....	(3)	3-0
10-103-137	Word-Beginning.....	1	0.25-1.5
10-103-133	Excel-Beginning.....	1	0.25-1.5
10-103-143	PowerPoint-Beginning.....	1	0.25-1.5
10-804-123	Math with Business Apps.....	3	3-0
10-801-195	Written Communication.....	3	3-0
10-801-196	Oral/Interpersonal Communication.....	3	3-0
10-801-166	Intro to Ethics: Theory and Application	3	3-0
10-809-199	Psychology of Human Relations.....	3	3-0
10-809-195	Economics.....	3	3-0
10-809-197	<u>Contemporary American Society.....</u>	<u>3</u>	<u>3-0</u>
Total		30	

Elective Requirements			
<u>Electives.....</u>		<u>3</u>	<u>E</u>
Total elective requirements		3	
TOTAL (all requirements)		66	

Note: Students are placed in English or mathematics courses based on their scores on the COMPASS or ASSET test or on completion of the appropriate prerequisite/s.



Program Courses

10-196-191 Principles of Supervision 3 credits
The learner applies the skills and tools necessary to perform the functions of a front line manager. Each learner will demonstrate the application of strategies to make the transition to a contemporary supervisory role including: operations planning and analysis, delegation, staffing, problem solving, motivation, training, leadership and performance assessment.

10-196-192 Foundations of Quality 3 credits
The learner applies the skills and tools necessary to implement and maintain a continuous improvement environment. Each learner will demonstrate the application of a personal philosophy of quality, identify stakeholder relationships, customer expectations, systems-focus, use of appropriate models and tools, managing improvement projects and measuring effectiveness of continuous improvement activities.

10-196-193 Human Resource Management 3 credits
The learner applies the skills and tools necessary to work effectively with the Human Resource (HR) function. Each learner will gain an understanding of the supervisor's role in contemporary human resource management regarding: the impact of EEOC, writing job descriptions, recruitment and selection, conducting interviews, employee orientation, policies and procedures, training, performance management, employee counseling, and effective use of compensation and benefit strategies.

10-196-134 Legal Issues for Supervisors 3 credits
The learner applies the skills and tools necessary for supervisors to function effectively within today's legal framework. Each learner will demonstrate the application of practices to meet the requirements of U.S. employment laws including implications for: staffing, disciplinary actions and documentation, preventing harassment and discrimination, safety, workplace violence, incident investigation, privacy issues and maintaining organizational policies and procedures.

10-196-188 Project Management 3 credits
The learner applies the skills and tools necessary to design, implement, and evaluate formal projects. Each learner will demonstrate the application of methods for project planning, developing project proposals, use of relevant software, working with project teams, sequencing tasks, charting progress, dealing with variations, managing project budgets and resources, implementation and project assessment.

10-196-164 Personal Skills for Supervisors 3 credits
The learner applies the skills and tools necessary to deal with the personal challenges inherent with a manager's role. Each learner will demonstrate the application of time management techniques, personal planning, continuous learning, valuing rights and responsibilities of others, effective communication, assertiveness and dealing effectively with stress.

10-196-190 Leadership Development 3 credits
The learner applies the skills and tools necessary to fulfill his/her role as a contemporary leader. Each learner will demonstrate the application of strategies to evaluate leadership effectiveness and communicate vision, mission and goals. Additional topics include: ethical behavior, personal leadership styles and flexibility, impacts of power, employee development, coaching, and effective conflict resolution.

10-196-189 Team Building and Problem Solving 3 credits
The learner applies the skills and tools necessary to facilitate problem solving in a team environment. Each learner will demonstrate the application of strategies regarding: the necessary roles for team effectiveness, stages of team development, team problem solving and consensus, systematic processes for problem definition, data acquisition and analysis, generating alternative solutions, choosing solutions, implementation planning and evaluation.

10-196-168 Organizational Development 3 credits
The learner applies the skills and tools necessary to effectively navigate within an organizational structure. Each learner will demonstrate the application of theories regarding the impact of globalization on organizational design, operation and culture. Other topics include: the impact of change, organizational decision making and the benefit of vision, mission and goals plus future challenges affecting the organizations.

10-196-116 Human Behavior at Work 3 credits
In this course, the learner applies the skills and tools necessary to work effectively with behavior found in organizations. Each learner will explore and demonstrate the application of theories in motivation, perception, organizational culture, employee development and communication. In addition, concepts such as diversity, decision making, conflict management and managing in a global environment will be introduced.

10-196-169 Diversity and Change Management 3 credits
The learner applies the skills and tools necessary to implement and maintain a diverse work environment that values change. Each learner will demonstrate the application of assessing the current extent of diversity in the workplace, analyze the effect of perceptions, attitudes, biases and organization culture on diversity, dealing with barriers, change management strategies, process and reactions, measuring progress and celebrating success.

10-196-136 Safety in the Workplace 3 credits
The learner applies the skills and tools necessary to provide a safe and secure work environment. Each learner will demonstrate the application of strategies regarding safety awareness, compliance, investigation and documentation. Other topics include: safety orientation, chemical safety, right-to-know, inspections, risk analysis, workplace violence, substance abuse, first aid, fire and electrical safety, emergency preparedness and liaison with external agencies.

10-196-105 Occupational Trends/Issues 3 credits
In this course, the learners summarize, present and discuss information on major trends and issues affecting supervisors in the complex, technological world of the future. Learners apply the knowledge gained in program courses, problem-solving skills and their personal experiences to identify successful strategies for the future.

Career Potential:

The Supervisory Management program is designed to meet the professional development needs of present and aspiring supervisors as their organizational roles change now and in the future.

- Supervisor
- Lead Worker
- Team Leader
- Shift Leader
- Team Facilitator
- Coach

More detailed and updated information on this program may be available at: madisoncollege.edu. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

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Rev. 04/15

Surgical Technologist

Program Number: 31-512-1

One-Year Technical Diploma

Health-Related Professions Program Cluster

School of Health Education

Program offered at Madison Campuses

For information call: (608) 246-6065, (608) 246-6280, or (800) 322-6282 Ext. 6065 or 6280

About the Program

The Surgical Technologist Program is accredited by the Commission on Accreditation of Allied Health Education Programs (CAAHEP) in cooperation with the Accreditation Review Committee (ARC) on Education in Surgical Technology. ARC is sponsored by the Association of Surgical Technologists, the American College of Surgeons and the American Hospital Association.

Graduates of the program are prepared to function as members of a surgical team. Surgical technologists are allied health professionals who are an integral part of the team of medical practitioners providing surgical care to patients in a variety of settings. The surgical technologist works under medical supervision to facilitate the safe and effective conduct of invasive surgical procedures. This individual works under the supervision of a surgeon to ensure that the operating room environment is safe, that equipment functions properly, and that the operative procedure is conducted under conditions that maximize patient safety. A surgical technologist possesses expertise in the theory and application of sterile and aseptic technique and combines the knowledge of human anatomy, surgical procedures, and implementation of tools and technologies to facilitate a physician's performance of invasive therapeutic and diagnostic procedures.

Opportunities may exist to accept a limited number of transfer students into the fall and spring semesters of the program. Individuals interested in this option should call the Center office and schedule an appointment to discuss their particular situation.

Admission Requirements

To review program admission requirements and application processing dates visit the programs website at: <http://madisoncollege.edu/program-info/surgical-technologist>.

Progression in Program

A course grade of C or better is necessary in course work for progression from fall semester to spring semester. If the final course grade received in any program course is less than a C, the student will be required to repeat each course in which the grade was below a C before proceeding to subsequent course(s) within the program. Program officials cannot guarantee a space in any particular course. A student who fails to obtain a satisfactory grade in a program course after one additional attempt or who fails more than two (2) program courses will be dropped from the program.

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

		Credits	Hrs/week Lec-Lab
Pre-Surgical Technologist courses:			
10-806-177	General Anatomy & Physiology* OR	4	5-4
20-806-206	General Anatomy & Physiology* OR	(4)	5-4
20-806-208	Anatomy and Physiology 1 & 2*	(8)	(6-4)
10-501-101	Medical Terminology*	3	3-0
10-801-195	Written Communication* OR	(3)	(3-0)
20-801-201	English 1* OR	(3)	(3-0)
10-801-196	Oral/Interpersonal Communication* OR	3	3-0
20-810-205	Small Group and Interpersonal Communication	(3)	(3-0)
31-512-317	Online ST Microbiology**	1	2.5-0
Semester Total		11	

First Semester

31-512-327	ST Introduction to Surgical Technology (1 st 8 weeks)	4	8-0
31-512-328	ST Fundamentals 1 (1 st 8 weeks)	4	8-0
31-512-329	ST Fundamentals 2 (2 nd 8 weeks)	2	4-0
31-512-330	ST Clinical 1 (2 nd 8 wks)	3	0-16
Semester Total		13	

Second Semester

31-512-331	ST Surgical Procedures	4	9-0
31-512-332	ST Clinical 2	4	0-24
31-512-334	ST Clinical 3	4	0-24
Semester Total		12	

* Students may complete some or all of these requirements at Madison College or at another college prior to beginning the ST program courses. See Program Director for evaluation of transfer credits.

** Microbiology is open to students on the waiting list. There is also the college-transfer level Microbiology of 20-806-273 (4 credits) that can be taken instead of the listed course.

Students who are successful in this field:

- possess a strong sense of responsibility, considerable patience and concern for others;
- function well as a team member;
- possess manual dexterity and fine motor coordination; and
- perform accurately and efficiently under pressure.

Notes:

A copy of the Functional Abilities necessary to successfully complete the program of study is available on the web site.

There is no longer a five year limit on the A&P, microbiology, and medical terminology courses. However, it is highly recommended to re-take or review these courses prior to program entry.

A 2.0 GPA is required for program entry.

Completion/Graduation Requirements

A grade of C or better is required in ALL courses.



Program Requirements

1) Clinical Vaccine Requirements: MMR, Varicella, Two Step TB, Influenza, and Hepatitis B. Documentation of current vaccines must be submitted prior to beginning the program. A submission deadline for documentation is August 1st. Students, who do not submit their vaccine documentation on or before August 1, may be removed from the program.

2) Health History form must be on file prior to beginning the program. Students who do not submit their completed health form on or before August 1, may be removed from the program.

3) Must register with Certified Background and complete caregiver background check on or before August 1. Students, who do not complete registration with Certified Background and a CBC on or before August 1, may be removed from the program. For the most current information on the Caregiver Law, visit the website: www.dhfs.state.wi.us.

4) CPR certification needs to be completed prior to beginning the program.

5) Must have basic computer skills knowledge. All assignments submitted through Blackboard should be in a format that can be read by MS Word or a pdf. Computer resources are available at: <http://madisoncollege.edu/blackboard-help>

Additional Fees: Required vaccinations, parking fees at clinical sites, clinical shoes, and personal protective eyewear.

Career Potential:

- Surgical Technologist in hospital operating rooms, ambulatory/day surgery units and obstetric/delivery units
- OB Technician
- Private Scrub Technologist
- Second Assisting Technologist
- First Assisting Technologist
- GI Technician
- Laser/Endoscopic Technician
- Tissue/Organ Procurement
- Central Supply Technician
- Material Manager
- Claims Approver
- Surgical Sales Representative
- Vet Technician

Some of the occupations listed above may require additional education.

Program Courses

31-512-317 ST Functional Microbiology 1 credit

Introduces general classification, structure and physiology of microorganisms. Students learn the relationship between microorganisms and the human host as well as microbes in the hospital environment. Examines the study of the disease process, transmission of disease and methods of controlling microbial growth. Reserved for Surgical Technologist waiting list students until open registration. Prerequisite: 10-501-101 AND Pre-/Co-requisites: 10-501-153 or 20-806-206, or 20-806-207 and -208.

31-512-327 ST Introduction to Surgical Technology 4 credits

Provides the foundational knowledge of disinfection, sterilization, infection control, and asepsis. Examines weights and measures / metric system, pharmacology and anesthesia. Legal and ethical issues encountered in the healthcare environment are explored. Simulated laboratory practice enables the learner to develop beginning technical skills. Prerequisite: one year of high school math with a grade of C or better in each semester.

31-512-328 ST Fundamentals 1 4 credits

Includes the basic clinical skills needed by the Surgical Technologist in the scrub role. Learners develop skills in identifying basic instrumentation, supplies, drains, catheters, dressings and sponges. Includes practice experience in creating a sterile field, draping, passing instruments and supplies, performing counts and preparing supplies.

31-512-329 ST Fundamentals 2 2 credits

Builds upon and reinforces the role of the Surgical Technologist as a member of the operating room team. Discusses care of the patient before, during and after surgery with emphasis on surgical wounds, wound closure materials, and vital signs. Includes lecture and lab experiences.

31-512-330 ST Clinical 1 3 credits

Apply basic surgical theories, principles, and procedural techniques in the operating room. Students begin to function as team members under the guidance of the instructor and authorized clinical personnel.

31-512-331 ST Surgical Procedures 4 credits

Provides the foundational knowledge of surgical core and specialty procedures. Examines the pathophysiology, diagnostic interventions and surgical interventions for a variety of surgical procedures. Incorporates integration of basic health sciences and technical knowledge to complete a plan of action for a surgical procedure.

31-512-332 ST Clinical 2 4 credits

Further experience in a clinical setting allows the student to continue to improve technical skills while accepting more responsibilities during surgical procedures.

31-512-334 ST Clinical 3 4 credits

Enhances the student's technical experience and employee skills. Serves as a transition between student and employee. Application of advanced skills for the entry-level Surgical Technologist in the clinical setting.

10-501-101 Medical Terminology 3 credits

Focuses on the component parts of medical terms: prefixes, suffixes and word roots. Students practice formation, analysis and reconstruction of terms. Emphasis is on spelling, definition and pronunciation. Introduction to operative, diagnostic, therapeutic and symptomatic terminology of all body systems, as well as systemic and surgical terminology, is included. Prerequisite: COMPASS scores of Pre-Algebra = 55; Reading = 80; Writing = 70; or comparable equivalent course courses.

Note: For the following program-related general education courses, see course catalog or Madison College Website:

- 10-801-195 Written Communication 3 credits
- 10-801-196 Oral/Interpersonal Communication 3 credits
- 20-801-201 English 1 3 credits
- 20-806-206 General Anatomy and Physiology 4 credits
- 20-806-207 Anatomy and Physiology 1 4 credits
- 20-806-208 Anatomy and Physiology 2 4 credits

More detailed and updated information on this program may be available at: madisoncollege.edu. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

Madison Area Technical College provides equal opportunity in education and employment.

Sustainable Business Certificate

Program Number: 90-102-5

Certificate

Business and Marketing Program Cluster

School of Business and Applied Arts

Certificate offered at Madison Campuses

For information call: (608) 243-4321, (608) 246-6560 or
(800) 322-6282 Ext. 4321 or 6560

About the Certificate

The Sustainable Business Certificate offers business students a thorough understanding of the principles and practices of sustainable business that can be applied to any industry. Attention is given to developing a written sustainability plan, making a business case for sustainable practices, green marketing, and business leadership, as well as the development of practical skills in green operations and green purchasing. The certificate is designed to enhance students' employability in a business environment that is increasingly focused on sustainability and environmental issues.

Admission Requirements

To review program admission requirements and application processing dates visit the programs website at:
<http://madisoncollege.edu/program-info/sustainable-business>.

Requirements for Completion

The certificate will be awarded upon completion of the requirements with a minimum of a 2.0 grade average and no course grade lower than a C. The certificate will be awarded when completion of all requirements is verified after the semester the last course has been completed.

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

Courses	Credits	Hrs/week	
		Lec	Lab
Complete both of the following:			
10-102-170 Introduction to Sustainable Business	3	3	0
10-102-172 Green Operations and Purchasing.....	3	3	0
Complete one of the following:			
10-102-134 Business Organization and Management.....	3	3	0
10-104-102 Marketing Principles	3	3	0
10-145-106 Small Business Marketing	3	3	0
Complete one of the following:			
10-102-132 Leadership for Business Excellence	3	3	0
10-196-169 Diversity & Change Management.....	3	3	0
10-196-190 Leadership Development.....	3	3	0
10-196-191 Principles of Supervision	3	3	0
10-614-152 Introduction to Sustainable Design and LEED	2	2	0
10-801-196 Oral/Interpersonal Communication.....	3	3	0
20-809-276 Business Ethics	3	3	0
20-810-267 Leadership as an Art	3	3	0
Total	11-12		



Courses

10-102-132 Leadership for Business Excellence 3 credits
This course is the Capstone course for the business management program. It is designed to integrate and enhance skills and behaviors learned throughout the curriculum. Topics covered include Leadership, Strategic Planning, Customer and Markets, Information, Data and Knowledge Management, Workforce Focus, Process Management, Results, Ethics, and Personal Leadership Evaluation.
Prerequisites: 10-102-134 and 10-102-143.

10-102-134 Business Organization and Management 3 credits
This survey course imparts an understanding of the economic and legal environment in which businesses operate, as well as an understanding of the organization and management of business enterprises. An emphasis is placed on business terminology and concepts.

10-102-170 Introduction to Sustainable Business 3 credits
How does a business become sustainable? What are the benefits and challenges of moving toward more environmentally, socially and economically sustainable business strategies? Introduction to Sustainable Business will familiarize students with the principles and practices of sustainability, with an emphasis on the creation and management of a sustainable business. Students will learn to develop a business case for sustainability, write a basic sustainability plan, and acquire the tools they need to continue to develop sustainable business practices.

10-102-172 Green Operations and Purchasing 3 credits
What does it mean in the business day-to-day for a company to go green? Learn how operations and purchasing can be integrated with sustainability principles in this careful look at key topics such as: energy management, water conservation, waste management, green computing, transportation, recycling and greening the supply chain. In addition, students will become familiar with new standards in green labeling and learn techniques for avoiding greenwashing.

10-104-102 Marketing Principles 3 credits
This foundation course introduces students to the marketing process and how it operates in today's dynamic organizations. The entire marketing mix is examined on a broad scale. Topics include: market segmentation and targeting strategies, market research, consumer behavior, product development, pricing policies, distribution, and an overview of promotion. This basic course provides a comprehensive overview of the exciting world of marketing.

10-145-106 Small Business Marketing 3 credits
Developing and refining the marketing and promotion plans for a small business. Topics for discussion include merchandise/service resources, budgeting, study of competition, market segmentation, pricing, promotion, non-media ways to get customers to come to your business, and strategic planning.

10-196-169 Diversity & Change Management 3 credits
The learner applies the skills and tools necessary to implement and maintain a diverse work environment that values change. Each learner will demonstrate the application of assessing the current extent of diversity in the workplace, analyze the effect of perceptions, attitudes, biases, and organization culture on diversity, dealing with barriers, change management strategies, process, and reactions, measuring progress and celebrating success.

10-196-190 Leadership Development 3 credits
The learner applies the skills and tools necessary to fulfill his/her role as a contemporary leader. Each learner will demonstrate the application of strategies to evaluate leadership effectiveness and communicate vision, mission and goals. Additional topics include: ethical behavior, personal leadership styles and flexibility, impacts of power, employee development, coaching and effective conflict resolution.

10-196-191 Principles of Supervision 3 credits
The learner applies the skills and tools necessary to perform the functions of a front line manager. Each learner will demonstrate the application of strategies to make the transition to a contemporary supervisory role including: operations planning and analysis, delegation, staffing, problem solving, motivation, training, leadership and performance assessment.

10-614-152 Introduction to Sustainable Design and LEED® 2 credits
The course provides the learner with an overview of sustainable design relevant to the design and construction industry, while concentrating on accreditation within the US Green Building Council LEED® (Leadership in Energy and Environmental Design) v.3 sustainable design program. Concepts discussed: the need for sustainable design, architects as stewards of the environment, construction activities, site selection, stormwater management, landscaping choices, building energy and atmosphere, indoor environmental quality, materials and resources and the Green Associate LEED® exam. Guest speakers and field trips provide additional support.

10-801-196 Oral/Interpersonal Communication 3 credits
Focuses upon developing speaking, verbal, and nonverbal communication and listening skills through individual presentations, group activities, and other projects. Prerequisite: 10-801-195, 20-801-201, or 10-801-151

20-209-276 Business Ethics 3 credits
Most of us will spend a large portion of our lives immersed in the world of work. As employees and/or employers, we face decisions everyday which depend on fundamental moral assumptions about honesty, fairness, liberty and privacy. We are all likely to have different ideas about what these concepts mean, or ought to mean, and justify our actions accordingly. This course aims to help us evaluate the moral choices we make in a business setting, and to that end philosophers employ the use of argument. By careful use of argument we will critically assess not only moral choices in the workplace, but also the moral assumptions that underlie capitalism, the economic system under which most people in the world are working. The issues that arise is business affect us all in critical ways. Whether we are debating the merits of affirmative action in hiring, corporate responsibility and profits, terms of employment, conflicts of interest or whistleblowing, this course will examine our assumptions and help us reach a clearer understanding of what we ought to do and why.

20-810-267 Leadership as an Art 3 credits
This course has as its central focus the development of leadership and group dynamics theory and assists the student in developing a personal philosophy of leadership, an awareness of moral and ethical responsibilities of leadership and an awareness of one's own ability and style of leadership. It provides the opportunity to develop essential leadership skills through study and observation of the application of these skills. The course encourages participants to develop their leadership behavior. Prerequisite: Appropriate Placement Test scores or College Reading Strategies, 10-808-101 or Intro to College Writing, 10-831-103.

More detailed and updated information on this program may be available at: madisoncollege.edu. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

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Rev. 04/15

Technical Studies–Journeyworker

Program Number: 10-499-5

Associate Degree

Construction Program Cluster

School of Applied Science, Engineering, and Technology

Program offered at Madison Campuses

For information call:

(608) 246-6800 or (800) 322-6282 Ext. 6800

About the Program

This program provides students who have completed a registered apprenticeship program an option to receive an associate degree designed around individual needs. Advanced standing procedures will be used to assess the degree requirements for journey-level workers who completed a registered apprenticeship program. Interested applicants should contact the School of Applied Science, Engineering, and Technology to coordinate assessment and academic planning. Although the associate degree option is available to many trades, it is suggested that the diploma issued for this program include the trade involved (i.e. Technical Studies–Industrial Electrician).

Program Requirements

Applicants must meet the following requirements:

1.) Possess a journey-level certificate from a registered apprenticeship program. The 39 credit minimum technical studies requirement will be satisfied through presentation of a Wisconsin Apprenticeship Completion Certificate from a DWD-BAS registered program which includes a minimum of 400 hours of prescribed related instruction in the WTCS. Additional advanced standing will be granted for required apprentice related instruction beyond the 400 hour statutory minimum.

2.) Meet the WTCS associate degree requirements of 21 credits of general education.

Admissions Requirements

To review admissions program requirements and application processing dates visit the programs website at: <http://madisoncollege.edu/program-info/technical-studies-journeywork>.

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

Coursework required for degree	Credits
Occupational Specific Courses ¹	39 credits
General Education ²	21 credits
Total	60 credits

¹Occupational Specific Course area is met by a Wisconsin Apprenticeship Completion Certificate issued by the Department of Workforce Development-Bureau of Apprenticeship Standards registered program which included a minimum of 400 hours of prescribed apprentice related instruction in the Wisconsin Technical College System.

²Must meet the WTCS Associate of Applied Science Degree requirement for a minimum of 21 credits of General Education distributed across the following categories: Typical course choices are listed under each category. Additional selections can be found on your degree audit or by consulting with your advisor.

Communications (6 credits)

10-801-195	Written Communication
10-801-196	Oral/Interpersonal Communication
10-801-198	Speech

Social Science (3 credits)

10-809-197	Contemporary American Society
10-809-172	Race, Ethnic and Diversity Studies

Behavioral Science (3 credits)

10-809-199	Psychology of Human Relations
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Math and/or Science (3 credits)

10-804-107	College Mathematics
10-804-113	Technical Math (or 10-804-115)
20-804-201	Intermediate Algebra (or 20-804-202)
10-806-143	College Physics
10-806-054	General Physics
10-806-134	General Chemistry

Additional General Education (6 credits)

10-809-166	Intro to Ethics
10-809-195	Economics
10-801-197	Technical Reporting

You have the responsibility of choosing classes that will count towards your degree. It is recommended that you map out the courses you plan to take and share that plan with your academic advisor. This will eliminate the possibility of you taking a course that does not count towards your degree requirements.

Note: Complete at least 25% of the total program credits at Madison Area Technical College and maintain a 2.0 GPA in your general education requirements.

More detailed and updated information on this program may be available at: madisoncollege.edu. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

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Rev. 05/15



Therapeutic Massage

Program Number: 31-537-1

One-Year Diploma Program

Health-Related Professions Program Cluster

School of Health Education

Program offered at Truax Campus

For information call: (608) 246-6065, (608) 258-2321, or (800) 322-6282 Ext. 6065 or 2321

About the Program

The Madison College Therapeutic Massage Program (800 hours, 28 credits) is designed to provide students with a thorough foundation in the theory and practice of therapeutic massage. As an entry level training program, students develop expertise in western massage techniques and learn to adapt their skills to a variety of clients including pregnant women, geriatric clients and individuals with particular health challenges. Significant emphasis is placed on professional skills, the therapeutic relationship, treatment planning and enhanced body-mind awareness. In their second semester, students are introduced to clinical approaches to therapeutic massage such as trigger point therapy and sports massage and they also explore spa therapies such as hydrotherapy, hot stone and aromatherapy. Students gain a foundational understanding of eastern bodywork theory and technique and examine a variety of specialized modalities. In the final course of the program students synthesize and refine their massage techniques and treatment planning skills within a professional clinic setting. Students learn valuable skills such as: appointment scheduling, record keeping, customer service and professional communication. Students also explore career opportunities, examine Wisconsin's requirements for licensure and prepare for the national and state exams. Upon completion of the program, all students are eligible to become licensed massage therapists in the state of Wisconsin.

Admission Requirements

To review program admission requirements and application processing dates visit the programs website at: <http://madisoncollege.edu/program-info/therapeutic-massage>.

Note: Convictions of crimes or pending charges may be grounds for denial of license if the circumstances of the conviction or charge are substantially related to professional practice. Applicants should check the following website for more information: www.dhs.wisconsin.gov/caregiver/ or call (608) 266-5764, or contact Department of Safety & Professional Services

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

		Hrs/week**	
		Credits	Lec-Lab
First Semester			
10-501-153	Body Structure and Function OR.....	3	3-0
20-806-206	General Anatomy & Physiology..... (4)	4	5-4
10-537-136	Musculoskeletal Anatomy for the Massage Therapist...	4	2-2
31-537-340	Therapeutic Massage 1.....	4	2.5-5.5
31-537-342	Therapeutic Massage 2*.....	4	2.5-5.5

Second Semester

10-537-138			
10-537-139			
31-537-344	Specialized Techniques for Therapeutic Massage.....	4	2-6
31-537-346	Therapeutic Massage Clinic and Business Practices....	4	2-6

*For students who begin the program in the spring, these classes are offered in the summer term.

Please Note: Students are required to purchase a supply kit, uniform and name tag early in the first semester of classes. The kit includes supplies needed to complete this program. The approximate cost of the kit, uniform and nametag is \$290.00

In addition, students are required to purchase a massage table which will cost approximately \$500.00

Costs are listed in the Additional info tab and

**The hours displayed are calculated as if a class was face-to-face for a full semester. If a class is less than the full semester, the actual hours per week would be more. For example, if a class is scheduled for only half of the semester, you would multiply the hours per week by two to be able to estimate the actual hours required to meet



Courses

10-537-136 Musculoskeletal Anatomy for the Massage Therapist 4 credits

This course introduces students to the anatomy and function of the skeletal and muscular systems of the body. Students learn the names, locations, insertion points, and actions of many of the muscles of the human anatomy. Furthermore, students apply what they learn and develop the essential palpation skills to identify the bones and muscles that comprise the musculoskeletal system. Students also acquire necessary skills for practical range of motion movements. Co-requisite: 10-501-153 or 20-806-206.

10-537-138 Kinesiology for the For the Massage Therapist 2 credits

Building upon foundational knowledge from musculoskeletal anatomy, students deepen their understanding with an emphasis on muscle groups used to perform specific actions. Furthermore, students directly apply this knowledge through the practice of ROM, postural and gait assessments to identify muscles involved in specific injuries. Finally, students learn how to integrate assessment techniques into a treatment plan for a more comprehensive approach to patient care. Prerequisites: 10-537-136 and 10-501-153 (or 20-806-206); Co-requisite: 10-537-139.

10-537-139 Pathology and Medical Terminology for the Massage Therapist 3 credits

In this course, students learn the types of diseases that affect each of the major body systems and more specifically the signs and symptoms of selected pathologies and disorders that could prove to be a contraindication to massage therapy. Students will also learn the benefits of an integrative and palliative approach to manage chronic conditions and how to approach treatment planning with this in mind. Students will also gain a foundational understanding of medical terminology, a basic understanding of pharmacology and the possible interactions between medications and massage. Prerequisite: 10-501-153 or 20-806-206.

31-537-340 Therapeutic Massage 1 4 credits

Introduces students to the field of touch therapies and provides students with basic instruction in therapeutic massage theory and technique. Topics covered include: (1) the development of the massage professional; (2) the therapeutic relationship; (3) the history of massage; (4) educational and legal requirements; (5) professional standards and ethics; (6) sanitation and safety procedures; (7) proper draping techniques; (8) proper body mechanics; (9) massage session preparation; (10) Swedish massage techniques; and (11) chair massage. Many learning activities support students to develop mindfulness skills and increased body awareness. Prerequisites/Co-requisites: 10-537-136, and 10-501-153 (or 20-806-206).

31-537-342 Therapeutic Massage 2 4 credits

Students continue to build upon conceptual framework as established in Therapeutic Massage 1. Topics covered include: (1) research literacy; (2) wellness concepts and stress reduction methods; (3) benefits and effects for therapeutic massage; (4) indications and contraindications to massage therapy; (5) endangerment sites; (6) consultation and record keeping; (7) the development of the massage professional; (8) full body therapeutic massage techniques; (9) proper draping techniques; and (10) proper body mechanics. Prerequisite: completion of or concurrent enrollment in 31-537-340.

31-537-344 Specialized Techniques for Therapeutic Massage 4 credits

In this course, students acquire more in-depth treatment planning, documentation and time management skills to prepare for their clinical experience. Students also learn how to adapt therapeutic and stress reduction massage techniques to clients with special needs including: pregnant clients, the elderly, oncology patients and individuals with particular health challenges. Students learn clinical approaches to therapeutic massage such as trigger point therapy and sports massage and explore spa therapies such as hydrotherapy, hot stone and aromatherapy massage. Students also gain a foundational understanding of eastern bodywork theory and technique and examine a variety of modalities to emphasize on career exploration. Prerequisites: 31-537-340, 31-537-342 and 10-501-153 (or 20-806-206).

31-537-346 Therapeutic Massage Clinic and Business Practices 4 credits

This course provides students with opportunities for synthesis and refinement of their massage techniques and treatment planning skills applied to a diverse clientele, within a professional clinic setting. The clinic provides students with valuable hands-on training in the following massage business practices: appointment scheduling, record keeping, customer service and professional communication. Most importantly, students learn to create a restful, relaxing atmosphere for clients. In the business portion of the class, students explore career opportunities, examine Wisconsin's requirements for licensure and prepare for the national and state exams. Students must provide proof of certification CPR before beginning clinic. Prerequisites: 31-537-340, 31-537-342, 10-501-153 (or 20-806-206), and 10-537-136; as well as concurrent enrollment in: 31-537-334, 31-537-338, and 31-537-339.

Career Potential:

▪ Licensed Massage Therapist

Students are required to pass the Wisconsin State Licensing Exam in their final quarter, prior to graduation from the program.

Additionally, in order to become a Licensed Massage Therapist (LMT) in the state of Wisconsin, students are required to pass a National Board Exam (MBlex or NCETM).

After passing the state exam and the national licensing exam, graduates will become Wisconsin LMTs, eligible to work in a variety of settings including: massage clinics, health clubs, spas, integrative healthcare facilities, beauty salons, or in private practice.

Additional fees for the exams are listed in the [program fees document](#).

More detailed and updated information on this program may be available at: madisoncollege.edu. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

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Madison Area Technical College

Veterinary Technician

Effective: 2015-2016

Program Number: 10-091-1

Associate in Applied Science Degree

Agriculture & Natural Resources Program Cluster

School of Applied Science, Engineering, and Technology

Program offered at Madison Campuses

For information call:

(608) 246-6800 or (800) 322-6282 Ext. 6800

About the Program

Students are taught the skills and procedures to effectively contribute to the health and well being of veterinary patients. Veterinary technicians, while always working under the supervision of a veterinarian, provide many services. Routine duties include restraint of animals, sample collection, nursing care (IV catheter placement, bandage application, medication administration, etc.), feeding of animals, record keeping, office procedures, and client education and communication. Other skills include administration of anesthesia, surgical nursing, radiographic procedures, dental prophylaxis, clinical pathology procedures and medication preparation. This job requires the physical strength to lift and carry 50 pounds, the ability to distinguish colors, and to have good vision and good hearing.

Upon completion of the program, graduates are eligible to take the Veterinary Technician National Exam (VTNE) administered by the Veterinary Examining Board of the Wisconsin Department of Safety and Professional Services. Receiving a passing score on the VTNE permits the use of the title of Certified Veterinary Technician.

This program is accredited by the American Veterinary Medical Association's Committee on Veterinary Technician Education and Activities.

Admission Requirements

To review program admission requirements and application processing dates visit the program website at:
<http://madisoncollege.edu/program-info/veterinary-technician>.

Unique Requirements for Graduation

To succeed in the program, a student must receive a grade of C or higher in **all** program courses, including general education courses. Regarding the technical studies courses specifically, students who fail to do so, or withdraw while the course is in progress, **may re-enroll in that course and only once**.

Note: It is highly recommended that students and potential students review documents ([Functional Abilities Requirements](#), [Answers to Your Questions](#), etc.) on the Additional Information tab/link on the program website as indicated above.

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

First Semester		Credits	Hrs/week Lec-Lab
10-091-105	Occupational Preparation.....	1	1-0
10-091-123	Laboratory Animal Science 1	2	1-3
10-091-170	Veterinary Medical Terminology	2	2-0
10-091-171	Animal Care and Management 1	3	2-3
10-801-195	Written Communication.....	3	3-0
10-806-105	<u>Principles of Animal Biology.....</u>	<u>4</u>	<u>3-2</u>
Semester Total		15	

Second Semester		Credits	Hrs/week Lec-Lab
10-091-107	Animal Disease 1	2	2-0
10-091-109	Pharmacology 1	2	1-2
10-091-120	Veterinary Clinical Pathology 1	3	2-3
10-091-131	Veterinary Office Procedures 1.....	1	1-0
10-091-172	Animal Care and Management 2	3	2-3
10-806-178	<u>Life Science Chemistry</u>	<u>5</u>	<u>4-3</u>
Semester Total		16	

Third Semester (summer)		Credits	Hrs/week Lec-Lab
10-091-158	Internship (8 weeks/288 hours minimum).....	4	40

Fourth Semester		Credits	Hrs/week Lec-Lab
10-091-108	Animal Disease 2	2	2-0
10-091-124	Veterinary Clinical Pathology 2.....	3	2-3
10-091-127	Surgical Nursing 1.....	3	2-3
10-091-128	Animal Nursing 1.....	2	1-3
10-091-132	Veterinary Office Procedures 2.....	1	0-2
10-091-140	Animal Anatomy and Physiology 1	3	1-4
10-801-196	<u>Oral/Interpersonal Communication</u>	<u>3</u>	<u>3-0</u>
Semester Total		17	

Fifth Semester		Credits	Hrs/week Lec-Lab
10-091-110	Pharmacology 2	2	1-2
10-091-121	Veterinary Clinical Pathology 3.....	3	1-4
10-091-122	Advanced Topics in Veterinary Medicine.....	1	1-0
10-091-152	Surgical Nursing 2.....	3	1-3
10-091-153	Diagnostic Imaging.....	3	2-3
10-809-197	Contemporary American Society	3	3-0
10-809-199	<u>Psychology of Human Relations.....</u>	<u>3</u>	<u>3-0</u>
Semester Total		18	

Recommended Additional Courses

10-091-114	Animal Behavior	2 credits
10-091-117	Exotic Animal Husbandry	2 credits
10-091-129	Clinical Rotation	2 credits

Note: Students are assessed for correct placement in English or mathematics courses based on their scores on the ACT/COMPASS test or on completion of the appropriate prerequisite(s). Additionally, there may be courses in other subject areas that may use COMPASS scores as prerequisites when reading, writing, chemistry, math, or critical thinking competencies are required.

Program Courses

10-091-105 Occupational Preparation 1 credit

Acquaints new students with the general competencies necessary to be employed as veterinary and laboratory animal technicians. Addresses the student's personal safety, health and stress management. Discusses memberships in professional organizations, certification, licensing, and internship preparation. Briefly discuss animal loss and bereavement.

10-091-107 Animal Disease 1 2 credits

Covers etiology, symptoms, transmission, diagnosis, prevention and control of diseases that are transmissible from animals to humans as well as animals to animals. Reporting requirements and handling of diagnostic samples involving high-exposure diseases are also discussed. Prerequisite: 10-091-170.

10-091-108 Animal Disease 2 2 credits

Covers etiology, symptoms, transmission, diagnosis, prevention and control of common diseases in a wide variety of animal species. Toxic plants and other substances, as well as reporting and monitoring of federally regulated diseases will also be discussed. Prerequisites: 10-091-107 and completion of or concurrent enrollment in 10-091-171 and 10-091-123.

10-091-109 Pharmacology 1 2 credits

Introduction to drugs and other substances used in veterinary medicine. Emphasizes drug usage, client education, measurement, administration, and safe storage of antiparasitics, anti-inflammatories, antibiotics and nervous system drugs. Prerequisites: 10-091-170 and 10-091-171.

10-091-110 Pharmacology 2 2 credits

Introduction to drugs and other substances used in veterinary medicine. Emphasizes drug usage, client education, measurement, administration, and safe storage of cardiac, respiratory, gastrointestinal, chemotherapy, ophthalmic and other drugs. Prerequisites: 10-091-109 and 10-091-158.

10-091-120 Veterinary Clinical Pathology 1 3 credits

Students are introduced to laboratory equipment, elementary laboratory procedures and the principles of microscopy, parasitology, urine analysis, hematology and bacteriology. Prerequisites: 10-091-170 and 10-091-171.

10-091-121 Veterinary Clinical Pathology 3 3 credits

Continues to expand upon the principles, procedures and skills learned in Vet. Clinical Pathology 1 and 2, including hematology, parasitology, urine analysis, microbiology, cytology, mycology, virology, serology, immunology and blood chemistries. Will continue to expand upon the use of automated laboratory procedures for hematology and clinical chemistries. Prerequisites: 10-091-124, 10-091-158, and completion of or concurrent enrollment in 10-806-178.

10-091-122 Advanced Topics in Veterinary Medicine 1 credit

Current topics and advanced diagnostic procedures in clinical pathology. Prerequisites: 10-091-124 and completion of or concurrent enrollment in 10-091-121.

10-091-123 Laboratory Animal Science 1 2 credits

Includes the history of laboratory animal technology and laboratory animal uses. Emphasizes the Animal Welfare Act and other regulations pertaining to the care of laboratory animals. Covers laboratory animal husbandry in depth as students provide care and treatment for a colony of laboratory animals. Pre or Co-requisites: 10-091-105, 10-091-170, and 10-091-171.

10-091-124 Veterinary Clinical Pathology 2 3 credits

Second in sequence of three courses. Students utilize laboratory equipment, including the microscope and complete selected laboratory procedures, including parasitology, mycology, urine analysis, hematology, serology, bacteriology, cytology, and blood chemistries. Prerequisites: 10-091-120 and 10-091-158.

10-091-127 Surgical Nursing 1 3 credits

This introductory course to surgical nursing covers surgical instruments, package prep, patient prep, anesthesia, monitoring and post-op care. Prerequisites: 10-091-158 and completion of or concurrent enrollment in 10-091-140.

10-091-128 Animal Nursing 1 2 credits

Designed to build nursing skills learned in 10-091-172, Animal Care and Management 2, with emphasis on large animal anesthetic techniques, surgical preparation and monitoring. Prerequisite: 10-091-181, and completion of or concurrent enrollment in 10-091-127.

10-091-131 Veterinary Office Procedures 1 1 credit

Covers development of appropriate public, client and staff relations; telephone etiquette, making appointments, managing records, client services and education, and personal grooming and attire. Legal requirements for record keeping as well as an introduction to the rules and regulations governing the veterinary and laboratory animal technician will also be discussed. Prerequisites: 10-091-170 and 10-091-105.

10-091-132 Veterinary Office Procedures 2 1 credit

A computer-based course covering office documents, patient records, billing, estimates, etc., using veterinary office software. Explores in-depth the rules and regulations governing the practice of veterinary technology in Wisconsin. Prerequisites: 10-091-131, and completion of or concurrent enrollment in 10-091-171.

10-091-140 Animal Anatomy and Physiology 1 4 credits

Lectures will emphasize terminology, functions, location, identification and organization of anatomical structures that are parts of body systems. Students dissect and study cadavers and tissue specimens from common domestic species. Prerequisites: 10-806-105 or equivalent, and completion of or concurrent enrollment in 10-091-171.

10-091-152 Surgical Nursing 2 3 credits

Focuses on the continuation of basic surgical nursing and anesthesia skills. Also covers basic dental prophylaxis, dental radiography, and cardiopulmonary resuscitation. Prerequisite: 10-091-127.

10-091-153 Diagnostic Imaging 3 credits

Explores concepts in veterinary radiology, electrocardiography, ultrasound, endoscopy, and other special imaging procedures and technologies. Prerequisites: 10-091-127 and 10-091-140.

10-091-158 Internship 4 credits

Internship (work experience) is a very important phase of practical training for students enrolled in the program. It generally follows the second semester of classwork in the college summer recess and is conducted during a period of eight weeks (or 320 hours). The student's work is supervised by assigned instructors. Prerequisite: completion of all first-year program courses.

10-091-170 Veterinary Medical Terminology 2 credits

Teaches acceptable veterinary medical terminology for common clinically recognizable diseases, operations, systems and procedures, as well as common medical signs, abbreviations and colloquial vocabulary.

10-091-171 Animal Care and Management 1 3 credits

Focuses on handling and husbandry of the animals most commonly seen in veterinary medicine. Includes animal behavior, nutrition and healthcare. Pre- or Co-requisites: 10-806-105 and 10-091-105.

10-091-172 Animal Care and Management 2 3 credits

Focuses on handling, medical nursing and disease processes of the animals most commonly seen in veterinary medicine. Prerequisites: 10-091-170, 10-091-171 and 10-091-105.

Career Potential:

- **Veterinary Technician**
- **Laboratory Animal Technician**

Technicians are usually employed by: small/companion, large animal/equine, mixed animal or exotic animal practices or humane societies. Also, can help with care and use of animals in research environments.

With additional education and/or work experience, graduates may find employment as:

- **Hospital Managers**
- **Facility Managers**
- **Pet Food Company Representative**
- **Drug Company Representative**

More detailed and updated information on this program may be available at: madisoncollege.edu. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

Madison Area Technical College provides equal opportunity in education and employment.

Video Production

Program Number: 90-206-1

Certificate

Applied Arts Program Cluster

School of Business and Applied Arts

Certificate offered at Madison Campuses

For information call:

(608) 246-6003 or (800) 322-6282 Ext. 6003

About the Certificate

This certificate is geared toward professionals who have an Associate of Applied Arts Degree in Photography, Graphic Design or Visual Communications, or a degree in art/design/photography/journalism from another accredited college or university, or comparable work experience. Through coursework, students create video communication products featuring advanced level production techniques in lighting, shooting, sound and editing. Examples include video testimonials, news features, documentaries, video documentation of industrial and scientific processes and narrative storytelling. Students acquire knowledge about specific tools of video production and communication strategies that take advantage of videos unique capabilities.

Admissions Requirements

To review program admissions requirements and application processing dates visit the program website at: <http://madisoncollege.edu/program-info/video-production-certificate>.

Requirements for Completion

The certificate will be awarded upon completion of the requirements with a minimum of a 2.0 grade average and no course grade lower than a C. The certificate will be awarded when completion of all requirements is verified after the semester the last course has been completed. Prerequisite: 10-206-181.

Certificate Courses

10-206-126 Studio Lighting Techniques 1 credit

This is an introductory course to the laws of light, learning the qualities of natural and artificial light sources. Students will acquire specific skills in these areas: hard and soft light; lighting direction; color temperature of light; lighting for shape and texture; managing electrical power for lighting and operation of professional lighting equipment in the studio. Prerequisites: 10-206-130, 10-206-126 or concurrent enrollment.

10-206-127 Location Lighting Techniques 1 credit

This is an introductory course to the tools of location lighting including lighting instruments, lighting modification tools, and grip equipment. Exercises will challenge students to create images in typical location situations including single and multi-person interviews, lectures, product shots, and reality-tv. Students will learn how the director of photography works with the video director and the rest of the crew to achieve the communication objectives of the project. Prerequisite: 10-206-143 or concurrent enrollment.

10-206-129 Motion Graphics 2 credits

This is an introductory course in the creation of animation for video and web applications. Students will use "After Effects" to make compositions-incorporating text, images, video clips and audio. Asset creation, file management, the timeline, working in three-dimensional space, and rendering will be covered in detail.

10-206-131 Sound Production Techniques 2 credits

This is an introductory sound production course in which students will learn to create clean, consistent, and intelligible audio recordings within a project driven curriculum. Students will learn sound principles, critical listening skills, and apply digital recording, editing, and mixing techniques to industry standards. Prerequisite: 10-206-181.

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

First Semester	Credits	Hrs/week Lec-Lab
10-206-126 Studio Lighting/Video Techniques.....	1	1-1
10-206-127 Location Lighting/Video Techniques	1	1-1
10-206-131 Sound Production Techniques	2	2-2
10-206-143 <u>Digital Storytelling</u>	<u>3</u>	<u>3-3</u>
Semester Total	7	
Second Semester		
10-206-129 Motion Graphics.....	2	2-2
10-206-145 Advanced Audio for Video Production	1	1-1
10-206-146 Introduction to Video/Audio Web Integration.....	1	1-1
<u>Selective (from list below)</u>	<u>2</u>	<u>2-2</u>
Semester Total	6	
Selective Course Options		
10-206-128 Compositing and Special Effects.....	2	2-2
10-206-147 Introduction to DSLR Video Production	2	2-2
10-206-160 Business and the Visual Arts.....	2	2-2

10-206-143 Digital Storytelling 3 credits

In this course the student will write and produce a quality digital documentary and post it on the Internet. Curriculum includes: different aspects of social media as it pertains to digital media, script/story writing, video camera handling, in-the-field video techniques, video capturing, digital video editing and audio enhancement, video exporting and appropriate compressions and uploading compressed video to the Internet.

10-206-145 Advanced Audio for Video Production 1 credit

This advanced course serves as a continuation of Sound Production Techniques, and offers more detailed training in audio production with special emphasis on Electronic News Gathering (ENG) field recording scenarios, troubleshooting, A.D.R. and Foley techniques, noise reduction and audio repair, and advanced sound sweetening and mixing for video. Prerequisites: 10-206-130 and 10-206-131, or concurrent enrollment.

10-206-146 Introduction to Video/Audio Web Integration 1 1 credit

Students will become familiar with the basics of networking technology and better understand how to optimize video and audio files for use on the web. Prerequisite: 10-206-130, or concurrent enrollment.

Selective Courses

10-206-128 Compositing and Special Effects 2 credits

Chroma keying, 3D, expressions, mattes, rotoscoping, motion tracking, particles and advanced camera effects are the main focus of this course. Students will use After Effects and Motion to create movies for various delivery methods, using storyboarding and pre-visualization techniques prior to development. Prerequisite: 10-206-129.

10-206-147 Introduction to DSLR Video Production 2 credits

The student will become familiar with shooting video on a DSLR camera and how shooting video differs from still photography. During this introductory course, the students will learn to shoot, capture and digitally edit their video to produce a final video project.

10-206-160 Business and the Visual Arts 2 credits

An introduction and review to small business practices specific to operation of a small visual arts business. Course will review areas such as business setup, legal organization, pricing, time management, timekeeping, bidding, management of subcontractors and billing. This course will teach best industry practices in all of those areas and how to operate a small freelance business. Prerequisites: 10-206-161 and 10-801-195.

Visual Communications – Media Design

Program Number: 10-206-1

Associate in Applied Arts Degree

Applied Arts Program Cluster

School of Business and Applied Arts

Program offered at Madison Campuses

For information call:

(608) 246-6003 or (800) 322-6282 ext. 6003

About the Program

The Visual Communications program is project and goal-oriented and provides digital skills in design creation, layout and presentation that are appropriate to the project's concept and goals. The program addresses the evolving nature of visual communications in a digital environment with a focus on the creation of a variety of media tools that includes interactive media, presentation design, video production, webpage design and web animation.

Students interested in the Visual Communications program should have a strong interest in art and digital presentation media, an aptitude for problem solving, excellent aesthetic judgment and the ability to meet deadlines.

The Visual Communications program curriculum prepares graduates for entry-level employment in this rapidly changing field. Employment is typically found in graphic design firms, corporate art departments, educational media graphics departments, advertising agencies, publishing houses and pre-press companies. Companies that specialize in new media, such as website development, computer animation and interactive media are also sources of employment for graduates of the Visual Communications program.

Admissions Requirements

To review admissions program requirements and application processing dates visit the programs website at:

<http://madisoncollege.edu/program-info/visual-communications>.

Program Courses

10-201-177 Webpage Design 3 credits

During this course, students create several websites, increasing in complexity. Exploration and analysis of existing sites on the web will also be a focus, and source for information. This course uses HTML and focuses on basics, typography, graphics, page-layout and introduces how to create and incorporate animation, as well as survey automated webpage layout software. Prerequisite: 10-201-181.

10-201-181 Intro to Computer Graphics 3 credits

Introductory course in electronic design, illustration, photo manipulation and publishing, using the Macintosh computer and peripherals. Software applications introduced include raster (e.g. Adobe Photoshop) and object-oriented programs (e.g., Adobe Illustrator) and page-layout programs (e.g., Adobe InDesign).

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

		Credits	Hrs/week Lec-Lab
First Semester			
10-201-181	Intro to Computer Graphics	3	3-3
10-203-130	Intro Digital Photography	2	2-2
10-206-107	Presentation Design.....	2	3-3
10-206-108	Digital Drawing and Design Fundamentals	2	3-3
10-206-133	Interface Design.....	2	2-2
10-801-195	Written Communication	3	3-0
10-809-199	<u>Psychology of Human Relations.....</u>	<u>3</u>	<u>3-0</u>
Semester Total		17	
Second Semester			
10-201-177	Webpage Design	3	3-3
10-206-105	Communication Design.....	3	3-3
10-206-130	Video Production.....	3	3-3
10-206-131	Sound Production Techniques	2	2-2
10-206-161	Introduction to Production Management.....	1	0.5-0.5
10-206-180	Advanced Media	3	3-3
10-801-196	<u>Oral/Interpersonal Communication</u>	<u>3</u>	<u>3-0</u>
Semester Total		18	
Third Semester			
10-206-142	Digital Video Production/Editing	3	3-3
10-206-135	Multimedia Presentations	3	3-3
10-206-160	Business and the Visual Arts.....	2	0-4
10-801-197	Technical Reporting.....	3	3-0
10-809-166	Intro to Ethics: Theory & Application	3	3-0
10-809-197	<u>Contemporary American Society.....</u>	<u>3</u>	<u>3-0</u>
Semester Total		17	
Fourth Semester			
10-206-125	Instructional Media Systems.....	3	3-3
10-206-129	Motion Graphics.....	2	2-2
10-206-110	Introduction to 3D.....	3	3-3
10-206-140	Portfolio Preparation	2	2-2
10-804-123	Math with Business Applications	3	3-0
	<u>Electives.....</u>	<u>2</u>	<u>E</u>
Semester Total		15	

Note: Students are placed in English or mathematics courses based on their scores on the COMPASS or ASSET test or on completion of the appropriate prerequisite/s.

Recommended Electives

10-201-155	WordPress for Designers.....	3	2-2
10-201-195	Advanced Web Page Design (8 wk course).....	3	2-2
10-201-196	Advanced Web Page Design 2 (8 wk course).....	2	2-2
10-206-104	Visual Communication-Media Design Internship.....	1	0-4
10-206-126	Studio Lighting Techniques (8 wk course)	1	1-1
10-206-127	Location Lighting Techniques (8 wk course)	1	1-1
10-206-128	Compositing and Special Effects (8 wk course)	2	2-2
10-206-145	Advanced Audio for Video Production (8 wk course)..	1	1-1
10-206-146	Intro Video/Audio Web Integration (8 wk course).....	1	1-1
10-206-147	Introduction to DSLR Video Production.....	2	2-2

Visual Communications – Media Design

PROGRAM COURSES

10-203-130 Intro to Digital Photography 2 credits

Provides an introduction to the photographic process through the use of digital cameras to produce images for presentations, the World Wide Web, and electronic publication. Covers basic principles of effective composition, light, exposure and control of motion and focus. Basics of portraiture and product photography are studied in a studio environment. Participants provide their own digital camera. Pre-Co-requisite: 10-201-181.

10-206-105 Communication Design 3 credits

Includes projects dealing with typographic and pictorial elements. Projects include single page layouts, mailer design and poster design, brochures, newsletters and letterhead and logo designs. Prerequisites: 10-201-181, 10-206-107, and 10-206-133.

10-206-107 Presentation Design 2 credits

Emphasizes presentation design and graphics for projected media including design and use of PowerPoint. Design techniques for various types of data are included. Prerequisite: acceptance into Visual Communication program or Photography program; or consent of instructor.

10-206-108 Digital Drawing and Design Fundamentals 2 credits

This course serves as an introduction to the creative process - through drawing techniques, concept development, storyboarding and the principles of design. Students work with a blend of traditional and digital media. Prerequisite: 10-201-181 or concurrent enrollment.

10-206-110 Introduction to 3D 3 credits

Uses computer 3D Modeling software to create visual displays in full three-dimensional space. An emphasis on 3D visualization, sketches and plan drawings provide preparation for constructing the 3D models. Prerequisites: 10-201-181 and 10-206-180.

10-206-125 Instructional Media Systems 3 credits

This advanced course serves as a continuation of Multimedia Presentation. Media integration and various delivery types are addressed with an emphasis on instructional use. Concepts include identifying a target demographic, learner styles, designing interactivity, and planning non-linear projects. Prerequisites: 10-201-181, 10-206-107, 10-206-120, 10-206-133, 10-201-177, and 10-206-135.

10-206-129 Motion Graphics 2 credits

This is an introductory course in the creation of animation for video and web applications. Students will use "After Effects" to make compositions - incorporating text, images, video clips and audio. Asset creation, file management, the timeline, working in three-dimensional space, and rendering will be covered in detail. Prerequisite: 10-201-181.

10-206-130 Video Production 3 credits

The student will become familiar with basic video production techniques for studio and fieldwork. Learning the basics of camera techniques, studio and field experiences, live studio recording and video team productions will be covered. In addition, the student will learn digital editing software to produce finished video projects, such as educational, promotional and service videos. Prerequisite: 10-201-181.

10-206-131 Sound Production Techniques 2 credit

This is an introductory sound production course in which students will learn to create clean, consistent, and intelligible audio recordings within a project driven curriculum. Students will learn sound principles, critical listening skills, and apply digital recording, editing, and mixing techniques to industry standards. Prerequisite: 10-201-181.

10-206-133 Interface Design 2 credits

This course introduces students to the planning process of user interface design for multimedia devices. Topics include interactive relationships, interface layouts, color compositions for the screen, site architectures, and web planning through wireframes for both desktop and mobile device. Prerequisite: 10-201-181 or concurrent enrollment.

10-206-135 Multimedia Presentations 3 credits

Students are trained in the design, integration and production of interactive multimedia applications. This course is an introduction to Flash - both as a 2D animation tool and an application to build dynamic content. It includes a project driven curriculum incorporating various media types and an introduction to ActionScript 3.0. Prerequisites: 10-206-180, 10-206-131, and 10-201-177.

10-206-140 Portfolio Preparation 2 credits

Students work to prepare a sample portfolio of their work for prospective employers. Students are supervised and assisted in the choice of samples, number of samples and design of portfolio. Lectures are given on job interviewing and job markets. Departmental approval of a finished portfolio is required for graduation. Prerequisites: 10-206-135, 10-201-177, and students must be in the final semester of the Visual Communications program.

10-206-142 Digital Video Prod and Editing 3 credits

Digital Video Production and Editing is an advanced course in documentary, short film and motion graphics production. Building on the skills learned in Video Production 1. This course emphasizes advanced editing and video graphics. Prerequisites: 10-201-181, 10-206-107, 10-206-130, and 10-206-131.

10-206-160 Business and the Visual Arts 2 credits

An introduction and review to small business practices specific to operation of a small visual arts business. Course will review areas such as business setup, legal organization, pricing, time management, timekeeping, bidding, management of subcontractors and billing. This course will teach best industry practices in all of those areas and how to operate a small freelance business. Prerequisites: 10-206-161, 10-801-195.

10-206-161 Introduction to Production Management 1 credit

In this introductory course the student develops a basic understanding of the media production process, budgeting, task analysis, time management, learner styles and design team approaches.

10-206-180 Advanced Media 3 credits

Students create visual solutions using image manipulation, compositing and illustration. Photoshop and Illustrator are explored in greater detail, with emphasis on delivery types of print, animation, and package design. Prerequisite: 10-201-181.

Recommended Electives:**10-206-104 Visual Communications-Media Design Internship 1 credit**

Students work for a total of 72 hours in a professional setting to gain experience outside of the classroom. Prerequisites: 10-206-180, 10-206-120, 10-206-130, 10-206-135, 10-201-177, 10-206-107, and fourth semester standing.

10-206-126 Studio Lighting Techniques 1 credit

This is an introductory course to the laws of light, learning the qualities of natural and artificial light sources. Students will acquire specific skills in these areas: hard and soft light; lighting direction; color temperature of light; lighting for shape and texture; managing electrical power for lighting and operation of professional lighting equipment in the studio. Prerequisite: 10-206-130, or concurrent enrollment.

10-206-127 Location Lighting Techniques 1 credit

This is an introductory course to the tools of location lighting including lighting instruments, lighting modification tools, and grip equipment. Exercises will challenge students to create images in typical location situations including single and multi-person interviews, lectures, product shots, and reality-TV. Students will learn how the director of photography works with the video director and the rest of the crew to achieve the communication objectives of the project. Prerequisites: 10-206-130 and 10-206-126, or concurrent enrollment.

10-206-128 Compositing and Special Effects 2 credits

Chroma keying, 3D, expressions, mattes, rotoscoping, motion tracking, particles and advanced camera effects are the main focus of this course. Students will use After Effects and Motion to create movies for various delivery methods, using storyboarding and pre-visualization techniques prior to development. Prerequisite: 10-206-129, or concurrent enrollment.

10-206-145 Advanced Audio for Video Production 1 credit

This advanced course serves as a continuation of Sound Production Techniques, and offers more detailed training in audio production with special emphasis on Electronic News Gathering (ENG) field recording scenarios, troubleshooting, A.D.R. and Foley techniques, noise reduction and audio repair, and advanced sound sweetening and mixing for video. Prerequisites: 10-206-130 and 10-206-131, or concurrent enrollment.

10-206-146 Intro Video/Audio Web Integration 1 credit

In this course, the students will become familiar with the basics of networking technology and better understand how to optimize video and audio files for use on the web. Prerequisite: 10-206-130, or concurrent enrollment.

Career Potential:

- Multimedia Design
- Interactive Design
- Webpage Design
- Video Production
- Computer Animation
- Display Design
- Media Design/ Production
- 3-D Design

More detailed and updated information on this program may be available at: madisoncollege.edu. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

Madison Area Technical College provides equal opportunity in education and employment.

Certificate

Applied Arts Program Cluster

School of Business and Applied Arts

Program offered at Madison campus

For information call: (608) 246-6003 or
 (800) 322-6282 Ext. 6003

About the Certificate

This certificate is geared toward the student who has, or is pursuing, an Associate of Applied Arts Degree in Graphic Design or Visual Communications, or a degree in art/design or multi-media from another accredited college or university, or comparable work experience proven by their portfolio. Through coursework, students create multi-page websites featuring advanced level production techniques in Dreamweaver. Examples include frame-based sites, forms, layers, behaviors, javascript implementation and cascading style sheets. Using vector and raster illustration programs, students create original illustrations for use in web pages. Students also learn advanced-level animation and web interface design using Flash. Students acquire knowledge about project development and site management skills, as well as track interactive marketing trends. Web programming fundamentals and techniques will also be explored.

Admissions Requirements

To review admissions program requirements and application processing dates visit the programs website at: <http://madisoncollege.edu/program-info/web-page-design-certificate>.

Requirements for Completion

The certificate will be awarded upon completion of the requirements with a minimum of a 2.0 grade average and no course grade lower than a C. The certificate will be awarded when completion of all requirements is verified after the semester the last course has been completed.

Prerequisite Course

10-201-177 Web Page Design 3 credits
 Introduces the student to the Internet and the World Wide Web through a mixture of lecture, demonstration and hands-on use of the Internet. Exploration and analysis of existing sites on the web also will be the focus and source of information. This course uses HTML and web design software, and will focus on basics—typography, graphics and page layout. Prerequisite: 10-201-181 (or comparable course or work experience).

Certificate Courses

10-201-155 WordPress for Designers 3 credits
 This course will introduce the basics of both WordPress.com (cloud hosted), and WordPress.org (self-hosted option). Students will learn how to publish posts and pages, work with themes, employ widgets, create custom menus, activate plugins, and utilize page templates. Students will also build a custom WordPress theme from scratch. The course will use HTML, CSS, Dreamweaver, text editing software, ftp software, and the current version of WordPress. Students are required to acquire server space to host their work. Prerequisites: 10-201-195 and 10-201-198.

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

Courses	Credits	Hrs/week	
		Lec	Lab
10-201-155 WordPress for Designer	3	2	2
10-201-178 Web Animated Visual Effects	3	0	6
10-201-189 Web Design Project Management.....	2	2	2
10-201-195 Advanced Web Page Design.....	3	3	3
10-201-198 Social Media/Web Design Strategies	3	3	0
10-206-190 Advanced Interactive Media	2	2	2
Total	16		

10-201-178 Web Animated Visual Effects 3 credits
 This course will introduce current methods for web animation and user interaction. Primary focus will be with HTML5, CSS, and JavaScript to produce animated effects and interaction appropriate for screen, tablet and mobile.

10-201-189 Web Design Project Management 2 credits
 This course teams students with real clients to design and produce customized web sites. The student teams manage the project, conceptualize, organize and acquire content, develop architecture and assemble a production plan. Advanced web page layout features such as template, libraries, use of CSS, implementation of JavaScript and spry widgets will be introduced. Emphasis on client site maintenance, including content management systems is a focus. Prerequisites: 10-201-195 and 10-201-198.

10-206-190 Advanced Interactive Media 2 credits
 As a continuation of 10-201-178, students create more advanced two-dimensional animation and interactivity for the web using software such as Adobe Flash and Fireworks. Techniques in 2D animation creation, scripting, design concepts, site organization, file optimization and uploading, and working with sound files are covered. Prerequisites: 10-201-177 and 10-201-178.

10-201-195 Advanced Web Page Design 3 credits
 This course focuses on wireframe planning, design, and page layout skills necessary to produce full-functioning web pages. Students create several web sites incorporating complex features and skills such as cascading style sheets and flexible page layouts. Designing layouts, galleries and navigations to be responsive for all screens including tablet and mobile devices, is also a focus. Information is delivered primarily through lectures. Demonstration and hands-on learning exercises. Prerequisite: 10-201-177.

10-201-198 Social Media/Web Design Strategies 3 credits
 Projects in this course will include online research, case studies and class exercises. This course will give student skills to make good Web design decisions by researching and understanding website architecture, usability search engine optimization, keywords, link building, web site indexing, and website analysis. Students will analyze websites and develop search engine optimization proposals for real clients and develop an html based email campaign. Students will investigate the use of various social media applications including blogs, Twitter and virtual worlds.

Career Potential:

- Interactive Design

More detailed and updated information on this program may be available at: madisoncollege.edu. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

Madison Area Technical College provides equal



Website Development Certificate

Program Number: 90-152-2

Certificate

Business Technology Program Cluster

School of Business and Applied Arts

Certificate courses offered completely online

For information call:

(608) 246-6003 or (800) 322-6282 Ext. 6003

About the Certificate

Students earning the Website Development Certificate obtain basic Website development skills in demand in today's digital world. They gain hands-on experience by completing course assignments and projects. Students and instructors use email and Web-based discussion to solve problems, provide clarification and maintain contact in general. These certificate classes are delivered as online only, with the exception of Dreamweaver, which is additionally offered in the classroom.

Admission Requirements

To review program admission requirements and application processing dates visit the program website at: <http://madisoncollege.edu/program-info/website-development-certificate>.

Requirements for Completion

The certificate will be awarded upon completion of the requirements with a minimum of a 2.0 grade average and no course grade lower than a C. The certificate will be awarded when completion of all requirements is verified after the semester the last course has been completed.

No more than 50% of the certificate credits may be through advanced standing.

Career Potential:

- Web Publisher
- Web Research Specialist
- Web Coordinator

This certificate is for individuals who use the World Wide Web for business or personal use, particularly those that may be called upon to edit, create, or maintain Websites.

More detailed and updated information on this program may be available at: madisoncollege.edu. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

Madison Area Technical College provides equal opportunity in education and employment.

Rev. 04/15



Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

Courses		Hrs/week	Credits	Lec-Lab
10-152-162	HTML–Beginning	1	0.25-1.5	
10-152-163	HTML–Dynamic*	1	0.25-1.5	
10-103-168	Dreamweaver	1	0.25-1.5	
10-103-167	Fireworks–Beginning	1	0.25-1.5	
10-103-164	Flash–Beginning	1	0.25-1.5	
10-103-163	Adobe Photoshop–Beginning	1	0.25-1.5	
10-152-165	JavaScript: An Introduction*	1	1-0	
10-152-164	Website Design Concepts*	1	0.25-1.5	
Total		8		

*Prerequisite: HTML–Beginning is required before taking HTML–Dynamic, JavaScript: An Introduction, and Website Design Concepts.

Courses

- 10-103-163 Adobe Photoshop–Beginning 1 credit**
Use the powerful Photoshop image editing program to learn Photoshop techniques such as working with layers, making selections, incorporating color and gradients, working with type and special type effects, using painting tools, working with layer functions such as masks and adjustment layers, transforming and resizing images, applying filters for special effects, working with vanishing point, and touching up specific selections. Competency in Windows or Mac OS, and the Internet.
- 10-103-164 Flash–Beginning 1 credit**
Use the Flash software to become familiar with the Flash environment, to draw, to work with symbols and interactivity, and to create animations and special effects.
- 10-103-167 Fireworks–Beginning 1 credit**
Use Fireworks software to become familiar with the Fireworks environment to work with objects, and to import, select, and modify graphics.
- 10-103-168 Dreamweaver 1 credit**
Use Dreamweaver to design, plan, and build a Website; work with text, images, links, and tables.
- 10-152-162 HTML–Beginning 1 credit**
Create Webpages using HTML; control HTML text; add hyperlinks, graphics and multimedia; work with tables; use frames and forms; design Webpages. Prerequisite: competency in Windows or Mac OS, and the Internet.
- 10-152-163 HTML–Dynamic 1 credit**
An introduction to JavaScripting for HTML. Work with Dynamic HTML (DHTML) and Cascading Style Sheets, control content dynamically, position elements with DHTML, implement advanced DHTML features and structure data with XML. Prerequisite: 10-152-162.
- 10-152-164 Website Design Concepts 1 credit**
Use the powerful Photoshop image editing program to learn Photoshop techniques such as working with layers, making selections, incorporating color and gradients, working with type and special type effects, using painting tools, working with layer functions such as masks and adjustment layers, transforming and resizing images, applying filters for special effects, working with vanishing point, and touching up specific selections.
- 10-152-165 JavaScript: An Introduction 1 credit**
An introduction to programming and object-oriented design concepts using JavaScript. Students learn all the JavaScript programming basics and use a simple text editor as a development environment with web browser plugins for error diagnostics. Design concepts and development tools will be integrated with an emphasis on practical business solutions. Prerequisite: 10-152-162.

Welding

Program Number: 31-442-1

One-Year Technical Diploma

Manufacturing Program Cluster

School of Applied Science, Engineering, and Technology

Program offered at Madison and Fort Atkinson Campuses

For information call:

(608) 246-6800 or (800) 322-6282 Ext. 6800

About the Program

This program emphasizes hands-on training and the mastery of welding techniques with manual and semi-automatic welding processes. Students develop their technical knowledge of blueprint reading, layout, metal fabrication, metallurgy and manipulative welding skills for potential qualification or certification in oxy-fuel, stick-electrode, gas-metal arc, flux-cored arc and gas-tungsten arc processes in all positions on plate and pipe.

Welders and metal fabricators lay out, shape, form, tack, and weld metal assemblies or products according to various welding codes and procedures. They produce fabricated assemblies, perform repair and maintenance welding, and work on construction projects. During fabrication of these products, students are trained in the use of hand and power tools used in the welding fabrication industry.

Admissions Requirements

To review admissions program requirements and application processing dates visit the programs website at: <http://madisoncollege.edu/program-info/welding>.

Requirements for Graduation

Students must meet two 2.0 GPA requirements to graduate: 1) GPA for entire program must be 2.0 or above; 2) GPA of combined occupational courses (442/457/623) must be 2.0 or above.

Metal Fabrication Completion Option

Students who have graduated from the Welding program, may take an additional semester of courses to obtain an additional degree of the Metal Fabrication technical diploma.

To review admissions program requirements and application processing dates visit the programs website at: <http://madisoncollege.edu/program-info/metal-fabrication>.

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

		Hrs/week	
		Credits	Lec-Lab
First Semester			
10-623-200	Interpreting Engineering Drawings.....	2	0-4
31-442-312	Oxy Fuel Weld/Thermal Cutting	2	1-3
31-442-314	Arc Welding Theory	2	1-3
31-442-315	Basic Arc (SMAW).....	2	1-3
31-442-318	Gas Tungsten Arc Welding 1(GTAW/TIG).....	2	1-3
31-442-323	Basic Gas Metal Arc Welding (GMAW/MIG).....	2	1-3
31-457-301	Fabrication 1	2	1-3
31-804-379	<u>Vocational Mathematics 1</u>	1	2-0
Semester Total		15	

Second Semester

10-623-100	Safety for Industry	1	1-0
31-442-320	Welding Occupational Development	1	2-0
31-442-321	Arc Welding (SMAW) Vertical	2	1-3
31-442-322	Advanced Welding Techniques.....	2	1-3
31-442-326	Flux Cored & Advanced Gas Metal Arc Welding (FCAW/GMAW).....	2	1-3
31-442-328	Gas Tungsten Arc Welding 2 (GTAW/TIG).....	2	1-3
31-442-390	Fundamentals of Metallurgy	2	4-0
31-457-302	<u>Fabrication 2</u>	2	1-3
Semester Total		14	

Notes:

- Safety procedures required in all labs.
- Prerequisites can be waived with Center approval.
- Advanced standing may be gained through Center deans.
- Certain associate degree or higher post-secondary courses specific to the curriculum may substitute for courses upon approval of Center deans.

Note: Students are placed in English or mathematics courses based on their scores on the COMPASS or ASSET test or on completion of the appropriate prerequisite/s.

To obtain an additional diploma in Metal Fabrication, the first step is to apply to that program.

Next, complete the following courses.

Third Semester (fall)

31-457-303	Fabrication 3	2	1-3
31-457-304	Fabrication 4	2	1-3
31-457-305	CNC Operation	2	1-3
31-457-306	CNC Programming	2	1-3
31-457-307	Jig and Fixture Development.....	2	1-3
32-420-349	<u>Basic Metrology Part A</u>	1	2-0
Semester Total		11	

Once admitted, students should consult their Academic Requirements (advising) report available through their student center account for specific requirements, as requirements are subject to change.



Program Courses

10-623-200 Safety for Industry 1 credit

Comprehensive safety program designed for anyone involved in general industry. Specifically devised for safety directors, foremen, and field supervisors; the program provides complete information on OSHA compliance issues.

10-623-200 Interpreting Engineering Drawings 2 credits

Basic principles of engineering drawings and manufacturing procedures. Through interpretation and sketching, students learn to visualize the part, section or assembly. Uses drawings pertinent to the trades with examples in Welding, Facilities, Piping and Instrumentation (P & ID's), Sheet Metal, Equipment Manuals (technical documents, installation/repair manuals), Electrical Symbols, and Fluid Power Symbols.

31-442-312 Oxy Fuel Weld/Thermal Cutting 2 credits

Perform manual and semi-automatic cutting and gouging using oxy-fuel and plasma arc cutting processes. Also, oxy-fuel and plasma cutting safety and proper handling of cylinders is covered. Applications will be to English and metric dimension.

31-442-314 Arc Welding Theory 2 credits

Emphasizes welding theory, safe use of welding equipment, hand and power tools, oxy-fuel and plasma arc cutting, AWS joint, weld procedures, and defects and their causes. Electrical applications, effects of welding machine power sources, electrode selection and welding symbols will also be covered.

31-442-315 Basic Arc (SMAW) 2 credits

Students in this course will develop manipulative skills on all types of joints in the flat position using shielded metal arc welding electrodes on mild steel. Welding techniques used for structural, pipe and maintenance welding will be developed.

31-442-318 Gas Tungsten Arc Welding 1 (GTAW/TIG) 2 credits

Emphasis is placed on gas tungsten arc welding (TIG) techniques of stainless steel. Development of skills and techniques on all types of joints in flat and horizontal positions. Aluminum and steel techniques may also be covered.

31-442-320 Welding Occupational Development 1 credit

Applications of welding terminology, use of forms, contracting, professional ethics and employment relations are studied. Specific topics germane to the welding field in decision-making, responsibility and preparation for the welding career are covered.

31-442-321 Arc Welding (SMAW) Vertical 2 credits

Students develop manipulative skills on all types of joints in the vertical up and down positions, using E7018 & E6010 shielded metal arc welding electrodes on mild steel. Students will also develop welding techniques used for fillet and groove weld competencies to AWS D1.1 structural steel welding code. Prerequisite: 31-442-315.

31-442-322 Advanced Welding Techniques 2 credits

Develops manipulative skills on all types of joints in the overhead and/or pipe positions using E7018 & E6010 shielded metal arc welding electrodes on mild steel. Develop welding techniques used for fillet and groove weld competencies to AWS D1.1 structural steel welding code. Course also includes air carbon arc gouging (ACC), repairs, and other advanced welding processes and applications for related trades. Prerequisite: 31-442-315, 31-442-323.

31-442-323 Basic Gas Metal Arc Welding (GMAW/MIG) 2 credits

Students develop manipulative skills on all types of joints in the flat, horizontal and vertical up and down position using short circuiting transfer. Students will perform gas metal arc welding techniques using 1/8" to 1/2" structural fabricated parts, as per AWS code standards. Emphasis is placed on operating gas metal arc welding equipment in a safe manner and determining machine set-up for metal thickness, wire size and speed.

31-442-326 Flux Cored & Advanced Gas Metal Arc Welding (FCAW/GMAW) 2 credits

Continuation of development of skills and techniques on all types of joints in the flat, horizontal and vertical up and down positions, using short circuiting and spray arc transfer. Students will also learn flux-cored gas shielding and self shielding welding techniques. Mild steel, stainless steel and aluminum (1/16" to 1" thickness) are the metals used in welding joint assemblies, as per AWS code standards. Prerequisite: 31-442-323.

31-442-328 Gas Tungsten Arc Welding 2 (GTAW/TIG) 2 credits

Students develop manipulative skills on all types of joints in the flat, horizontal, vertical, over head and pipe positions. Gas tungsten arc welding of stainless, aluminum, and steel welding techniques will be covered using 1/8" to 1/32" (11 ga to 20 ga) structural fabricated parts, pipe, repair welding and for other related trades, as per AWS and ASME welding code standards. Prerequisite: 31-442-328.

31-442-390 Fundamentals of Metallurgy 2 credits

Introduction to metallurgy with emphasis on applications, selection, identification methods and alloy influences. Properties are studied utilizing testing, micro-structure interpretation and heat treatment processes. Tool steels, weld heat effects, failure analysis as well as machinability variations in cast iron, alloy steels and non-ferrous materials are covered in detail.

31-457-301 Fabrication 1 2 credits

In Fabrication 1 students will be introduced to the fundamentals of metal cutting and forming. Students will create assemblies from industrial drawings conforming to industry standards. Emphasis will be placed on the safety, basic layout techniques, bending calculations, and operation of manual and mechanical cutting/forming equipment.

31-457-302 Fabrication 2 2 credits

In Fabrication 2 students will translate the competencies established in Fabrication 1 to programmable forming equipment. Students will create assemblies from industrial drawings conforming to industry standards. Emphasis will be placed on safe operation procedures, the selection of tooling, and calculations required to properly operate programmable forming equipment. Prerequisite: 31-457-301.

Career Potential:

- Maintenance Welder
- Qualified Welder
- Structural Welder
- Welder/Fabricator

With additional education and/or work experience, graduates may find employment as:

- Welding Apprentice
- Welding Foreman
- Welding Inspector
- Welding Supervisor

More detailed and updated information on this program may be available at: madisoncollege.edu. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

Madison Area Technical College provides equal opportunity in education and employment.

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Wind Energy Technology

Program Number: 90-462-4

Certificate

Manufacturing Program Cluster

School of Applied Science, Engineering, and Technology

Program offered at Madison and/Watertown Campuses

**For information call: (608) 246-6800
or (800) 322-6282 Ext. 6800 or (608) 258-2421**

About the Certificate

The Madison College Wind Energy Technology Certificate is designed to provide students with the theoretical knowledge necessary for a career in energy management and renewable energy technology. Students acquire hands-on skills in troubleshooting, maintenance, installation, operation and repair and replacement of related equipment. The certificate requires a minimum of 17 credits of coursework.

Certificate credits may be combined with additional coursework to enhance traditional diploma, degree, transfer and associate programs at Madison College. The credits also may be combined with additional training, job experience and/or professional examinations to qualify for certification by national renewable energy institutions.

Incumbent trade workers and technical professionals are encouraged to investigate how a Renewable Energy Certificate may relate to their current work or business practices. Some classes are delivered in online and/or intensive short-course formats, and some classes may be offered during evenings, weekends, winter break, spring break and/or summer sessions.

Admissions Requirements

To review admissions program requirements and application processing dates visit the programs website at: <http://madisoncollege.edu/program-info/introduction-to-wind-energy>.

Unique Requirements for Completion

The certificate will be awarded upon completion of the requirements with a minimum of a 2.0 grade average and no course grade lower than a C. The certificate will be awarded when completion of all requirements is verified after the semester in which the last course has been completed.

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

Courses	Credits	Hrs/week Lec-Lab*
10-414-100 DC/AC Circuits for Industry OR	3	3-0
32-414-316 DC/AC Circuits	(3)	4-2
10-482-101 Introduction to Wind Energy	3	3-0
10-482-102 Wind Systems Technician 1	2-3	5-0
10-482-153 Wind Turbine Installation***.....	1 or 2	1 or 2-0
10-623-100 Safety for Industry	1	0-2
10-623-200 Interpreting Engineering Drawings	2	0-4
32-462-303 Industrial Equipment Mechanisms OR	1	1-1
10-623-310 Mechanisms for industry	(1)	0-2
32-462-306 Industrial Fluid Power 1 OR	1	1-1
10-623-300 Fluid Power 1 for Industry	(1)	0-2
32-462-340 Industrial Electricity and Controls OR	4	4-4
10-414-201 Electricity and Control Circuits for Industry.....	(4)	0.5-7
Total	17-19**	

*The lecture-lab hours per week are listed as if the courses are offered in a full semester format; any classes offered for fewer weeks will therefore have more hours per week in reality to reach the total number of hours required for a course. Please check the scheduled offerings for specific meeting times.

**Student must complete a total of 17 credits to earn the certificate

***Three-day short course

Note:

Enrollment for courses adhere to course pre-requisites and co-requisites as indicated at the end of each course description.



Courses

10-414-100 DC/AC Circuits for Industry 3 credits

Study of practical DC concepts with an introduction to AC concepts. Course topics include electrical quantities and components and measurement instruments with an emphasis on DC circuits. Students analyze and construct circuits and measure voltage, current, resistance and power for both AC and DC sources. Studies principles of electricity AC components and circuits. Coverage includes combination circuits that contain Resistive Inductive and/or Capacitive properties. Emphasis on circuit troubleshooting and efficiencies. Course introduces theory and application of three-phase circuits, single phase, transformers, generators, and motors. Covers fundamentals of NEC wiring, soldering and relay ladder logic.

10-482-101 Introduction to Wind Energy 3 credits

This course prepares the learner to assess the global energy picture; analyze the causes of wind and wind flow properties; explore small, medium and large wind turbine designs; assess the environmental effects of wind turbines; perform business and site assessments for a wind turbine project; plan your wind turbine project, evaluate operation and maintenance of the turbine system; and analyze the future of wind energy.

10-482-102 Wind Systems Technician 1 2-3 credits

Allows participants to develop essential skills and attitudes for employment in the wind industry. Topics include: safety, electrical hazard, confined space, climbing practices, tool use, calibration, documentation and routine wind turbine maintenance operations.
Prerequisite: 10-482-101.

10-482-153 Wind Turbine Installation 3 credits

Students will assemble and erect a short, 100-foot guyed tilt-up tower that was constructed at the previous "Wind Turbine Design and Construction" course at the MREA, along with the wind turbine that was built there. We will also install a temporary battery-based power system and hope for some wind! It's suggested that students who take Wind Turbine Design and Construction also take this installation class. It will be a "crash course" on wind turbine installation basics, wind turbine siting, tower safety, and tilt up tower design.

10-623-100 Safety for Industry 1 credit

Comprehensive safety program designed for anyone involved in general industry. Specifically devised for safety directors, foremen, and field supervisors; the program provides complete information on OSHA compliance issues.

10-623-200 Interpreting Engineering Drawings 2 credits

Basic principles of engineering drawings and manufacturing procedures. Through interpretation and sketching, students learn to visualize the part, section or assembly. Uses drawings pertinent to the trades with examples in Welding, Facilities, Piping and Instrumentation (P & ID's), Sheet Metal, Equipment Manuals (technical documents, installation/repair manuals), Electrical Symbols, and Fluid Power Symbols.

32-414-316 DC/AC Circuits 3 credits

Introduces the practical DC/AC concepts including electrical quantities and components and measurement instruments for AC and DC circuits used in commercial, industrial, and sustainable energy fields. Students analyze and construct circuits and measure voltage, current, resistance and power for both AC and DC sources. Covers fundamentals of NEC wiring, soldering and relay ladder logic. Pre- or Co-requisite: Machine Tool Math 1, 10804110, OR College Math, 10804107, OR COMPASS Algebra score of 40 or higher

32-462-306 Industrial Fluid Power 1 1 credit

Fundamentals of fluid power (hydraulic and pneumatic) and its components as well as principles, functions and terminology. Covers the application of basic fluid power systems to various machines along with maintenance and troubleshooting. Requires concurrent enrollment or completion of Machine Tool Math 1 (10-804-110) OR College Math (10-804-107) OR COMPASS Algebra score of 40 or higher

32-462-303 Industrial Equipment Mechanisms 1 credit

Studies basic principles of physics specific to electro-mechanical systems. Emphasizes measurement, lubrication, energy, power, machines and fluid and chemical properties, as well as installation, timing and synchronization of machine drive components. Includes hands-on disassembly and assembly of industrial components. Studies motors, transformers and various electro-mechanical devices to enhance AC power distribution and control topics. Introduces programmable logic controllers in the on/off mode. Co-req: Industrial Electricity and Controls (31-462-340).

32-462-340 Industrial Electricity and Controls 4 credits

Studies basic principles of physics specific to electro-mechanical systems. Emphasizes measurement, lubrication, energy, power, machines and fluid and chemical properties, as well as installation, timing and synchronization of machine drive components. Includes hands-on disassembly and assembly of industrial components. Studies motors, transformers and various electro-mechanical devices to enhance AC power distribution and control topics. Introduces programmable logic controllers in the on/off mode. Prerequisite: DC/AC Circuits, 32414316; or instructor consent.

Related Courses Available to the Public

- EPA Refrigerant Recovery Certificate
- Refrigeration courses
- Heating, venting and air conditioning courses

For information, call: (608) 246-6821

More detailed and updated information on this program may be available at: madisoncollege.edu. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

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Wine Stewardship Certificate

Program Number: 90-109-7

Certificate

School of Business and Applied Arts

Hospitality Program Cluster

Program offered at Madison campuses.

For information call:

(608) 246-6003 or (800) 322-6282 Ext. 6003

About the Certificate

This certificate is achieved by completing three courses: Wine Appreciation, Food & Wine Pairing, and The Business of Wine. Receiving the Wine Stewardship Certificate indicates to a potential employer that the recipient has completed an in-depth educational process that has provided training in the following basic areas: the wine making process, characteristics of wine, the influence of *Terroir*, the *Three Step Tasting Process*, the language of wine, wine regions of the world, and the distinctions between types and names of wines. In addition the individual will possess a thorough knowledge of how to appropriately pair food and wine, and the business applications of wine service. Students must be 21 to enroll in all courses in this certificate.

Admissions Requirements

To review admissions program requirements and application processing dates visit the programs website at: <http://madisoncollege.edu/program-info/wine-stewardship>.

Unique Requirements for Completion

The certificate will be awarded upon completion of the requirements with a minimum of a 2.0 grade average and no course grade lower than a C. The certificate will be awarded when completion of all requirements is verified after the semester the last course has been completed.

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2015-2016 academic year. Requirements for completion may vary depending on the semester in which a student is admitted. Current/continuing students should consult their Academic Requirements report available through their student center account for specific requirements, as requirements are subject to change.

Two Required Courses		Credits	Hrs/week Lec-Lab
10-109-137	Wine Appreciation	1	1-0
10-109-139	Food & Wine Pairing.....	1	0.5-1
10-109-238	The Business of Wine.....	1	1-0

Courses

10-109-137 Wine Appreciation

1 credit

Designed to provide a basic understanding of wine. The student will be introduced to the various components of wine in a "Component Tasting. In addition to sampling a variety of wines, topics of discussion will include: wine grapes, "Old World" and "New World" wines, wine service, purchasing and storing wine. A Riedel stemware tasting is included to demonstrate the effects of the proper stemware on the taste of wine. Students must be aged 21 to enroll.

10-109-139 Food & Wine Pairing

1 credit

Builds on the knowledge of wines and winemaking learned in the Wine Appreciation course. In this experiential hands-on cooking and tasting class, students will learn a common methodology for describing and evaluating food and wine flavor characteristics. Students will learn through experience how food and wine interact and transform each other. Students will learn to pair food and wine together to enhance each other's flavors in a variety of formal and informal dining settings including snacks, appetizer, entree, dessert, and cheese courses consistent with food and restaurant industry standards. Students must be aged 21 to enroll.

10-109-238 The Business of Wine

1 credit

In this course, the student will learn the business of wine service in a restaurant. The course will expose the student to the following: wine and health, wine service, purchasing, storage, marketing – to include developing a wine list and pricing strategies. The course includes several hands-on opportunities and will prepare the individual to provide responsible, profitable wine service in a restaurant environment. Students must be aged 21 to enroll. Prerequisite: 10-109-137

More detailed and updated information on this program may be available at: madisoncollege.edu. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

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