Madison Area Technical College

Effective: 2014-2015

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 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			Hrs/week
First Semester		Credits	Lec-Lab
10-101-111	Accounting 1-Principles	4	4-0
10-102-134	Business Organization and Management	3	3-0
10-102-160	Business Law 1	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	17	
Second Semester			
10-101-113	Accounting 2-Principles	4	4-0
10-101-123	Tax 1	4	4-0
10-101-138	Accounting and Payroll Systems	3	3-1
	OR all of the immediately following three (3) courses:		
10-101-152	*Introduction to Peachtree Accounting*	*(2)*	*1-2*
10-101-153	*Systems Accounting Cycle*	*(1)*	*0.5-1*
10-101-154	*Payroll Accounting*	*(1)*	*0.5-1*
10-801-196	Oral/Interpersonal Communication	3	3-0
10-809-199	Psychology of Human Relations	3	3-0
	Semester Total	17 *(18)*	

SECOND YEAR			
First Semester			
10-101-121	Accounting 3-Intermediate	4	4-0
10-101-125	Cost Management	4	3-0
10-801-198	Speech	3	3-0
10-809-195	Economics	3	3-0
10-809-166	Intro to Ethics: Theory & Application OR	3	3-0
20-809-276	Business Ethics*	(3)	(3-0)
	Semester Total	17	
Second Semester			
10-101-122	Accounting 4-Intermediate	4	4-0
10-101-124	Auditing	3	3-1
10-101-137	Computerized Accounting Applications	3	3-1
10-114-126	Corporate Finance	3	3-0
10-106-190	Professional Development	1	1-0
	Elective	3	E
	Semester Total	17	

Electives must be associate (100 level) or college transfer (200 level) courses.

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 or ASSET test or on completion of the appropriate prerequisites

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

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.

10-101-124 Auditing 3 credits
This course is an introduction to auditing. Emphasis is on the preparation of working papers to support audit findings. An audit case is completed to illustrate various auditing concepts and procedures. The course includes an evaluation of internal controls, conventional auditing procedures, and the preparation of audited financial statements in conformity with generally accepted accounting principles. Prerequisite: 10-101-121.

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. In addition, the student will learn to use QuickBooks Pro accounting software. 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 Peachtree accounting software. Prerequisites: grade of C or better in 10-101-113 (or concurrent enrollment) and completion of 10-103-133.

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 a C or better in 10-101-113 and 10-804-144.

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.

10-102-160 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.

10-804-144 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.

Recommended Electives

Electives must be associate (100 level) or college transfer (200 level) courses.

10-101-118	Management Accounting	4 credits
10-101-140	Accounting/Business Internship	3 credits
10-102-104	Business Statistics	3 credits
10-102-127	Financial Analysis	3 credits
10-102-143	Management Techniques	3 credits
10-103-139	Excel–Intermediate	1 credit
10-103-145	Access-Beginning	1 credit
10-106-172	Administrative Office Management	2 credits

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.

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

Rev. 08/13

Madison Area Technical College

Effective: 2014-2015

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 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
10-101-111	Accounting 1-Principles	4	4-0
10-102-134	Business Organization and Management	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	14	

Second Semester			
10-101-113	Accounting 2-Principles	4	4-0
10-101-123	Tax 1	4	4-0
10-101-138	Accounting and Payroll Systems OR	3	3-0
10-101-152	*Intro to Peachtree Accounting AND*	*(2)*	*1-1*
10-101-153	*Systems Accounting Cycle AND*	*(1)*	*.25-.50*
10-101-154	*Payroll Accounting*	*(1)*	*.25-.50*
10-103-139	Excel-Intermediate	1	0.25-1.5
10-106-190	Professional Development	1	1-0
	Semester Total	13	

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 order to graduate.

Madison Area Technical College

Accounting Assistant

Program Number: 31-101-1

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. 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.

10-101-138 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 Peachtree accounting software. Prerequisites: grade of C or better in 10-101-113 (or concurrent enrollment) and completion of 10-103-133. This requirement can be satisfied by completing the following three courses: 10-101-152, 10-101-153, and 10-101-154:

10-101-152 Intro to Peachtree Accounting 2 credits
Prepares the student to use Peachtree accounting in a "real world" business setting. The student will learn how to set up a company's accounting system within Peachtree. Once set up, the student will learn how to use the general journal, purchases journal, cash disbursements journal, sales journal, cash disbursements journal, and payroll journal. The student will learn how to prepare the financial statements and how to make modifications to Peachtree's predefined statements. The prerequisite for this course is an introductory financial accounting course or demonstration of an understanding of basic financial accounting. Prerequisite: 10-101-111.

10-101-153 Systems Accounting Cycle 1 credit
The objective of this course is to help students understand and visualize the accounting systems used by companies. This is accomplished by using a manual practice set which has students performing all accounting functions for a small service company. A manual accounting system is used, with the expectation that understanding the flows within a manual system will provide a strong foundation for understanding computerized systems. Students will work with commonly used business documents. Flowcharting and internal control procedures are also covered. Prerequisite: 10-101-111, or consent of instructor.

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: 10-101-111

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.

10-103-133 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.

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.

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

Rev. 08/13

Madison Area Technical College

Effective: 2014-15

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.

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 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

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			
10-101-108	Applied Accounting 1	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	

SECOND YEAR

First Semester			
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	

Second Semester			
10-106-134	Software Simulation	2	0.5-3
10-106-186	Project Management and Coordination	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.

Madison Area Technical College
Administrative Professional

Program Number: 10-106-6

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 Project Management and Coordination 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. 04/14

Madison Area Technical College

Effective: 2014-2015

Certificates in Microsoft® Office -Advanced

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 basic and advanced 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 $10.00 to $12.00 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/advance-certificate-microso.

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.

Microsoft® is a registered trademark of the Microsoft Corporation.

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 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.

BASIC Certificate in Microsoft® Office		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	

ADVANCED Certificate in Microsoft® Office (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
	Total	8	
	(Choose 6 of the 8 credits)		

**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

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MADISON AREA | TECHNICAL COLLEGE

Real world smart.

Madison Area Technical College

Certificates in Microsoft® Office

Program Number: 90-103-5

Basic Certificate in Microsoft® Office

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.

Advanced Certificate in Microsoft® Office

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.

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 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.

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

Course		Credits	Hrs/week 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

Madison Area Technical College

Emergency Medical Technician

Program Numbers: 30-531-3 / 30-531-6 / 30-531-4

Advanced EMT (AEMT)
Less-Than-One-Year Diploma

This course builds on the EMT curriculum. Students learn advanced patient assessment, communication skills and beginning advanced life support interventions. This course meets the educational requirements for EMT Intermediate Technician licensure in Wisconsin. Prerequisite: a valid Wisconsin EMT-Basic license. Students must complete a Criminal History Check as required by the state for licensure and clinical sites. The Department of Health and Family Services may set other requirements. For additional Advanced EMT I course information and application/registration materials, go to: http://madisoncollege.edu/program-info/advanced-emt and click on the Admissions tab.

Program Course

30-531-360 Advanced EMT 4 credits
Students learn advanced patient assessment, communication skills and beginning advanced life support interventions. Meets requirements for licensure in Wisconsin. Prerequisite: a valid Wisconsin EMT–Basic License.

Career Potential:

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

- Emergency Room Technician
- Firefighter
- Emergency Medical Technician-Intermediate
- EKG Technician
- Paramedic
- Medical Laboratory Technician
- Home Health Aide
- Medical Assistant
- Emergency Medical Technician-Paramedic
- 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: 05/14

Madison Area Technical College

Effective: 2014-2015

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 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			Hrs/week
First Semester		Credits	Lec-Lab
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	
Summer Session			
10-070-175	Power Transmissions	4	2-4
10-806-139	Survey of Physics	3	2-1
	Semester Total	7	
SECOND YEAR			
First 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
10-531-190	Ag Tech CPR/First Aid*	1	4-0
10-801-197	Technical Reporting*	3	3-0
	Semester Total	15	
Second Semester			
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	15	
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.

Madison Area Technical College

Agricultural Equipment Technology

Program Number: 10-070-1

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.

10-070-176 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.

10-531-190 Ag Tech CPR/First Aid 1 credit
A combination of safety, first aid and CPR for emergencies which may occur in the agricultural equipment industry. Prepares students for a standard Red Cross first aid certificate. Presents the instruction and practical content of the American Heart Association's basic life support course.

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.

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Rev. 07/13

Madison Area Technical College

Effective: 2014-2015

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 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.

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			Hrs/week
First Semester		Credits	Lec-Lab
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			
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
	Elective	3	E
	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.

Madison Area Technical College

Animation – Concept Development

Program Number: 10-207-1

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: 10-207120 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.

Rev. 07/14

Madison Area Technical College

Effective: 2014-2015

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 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			Hrs/week
First Semester		Credits	Lec-Lab
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	UW-Milwaukee
809-172 Race, Ethnic & Diversity	American Minority Groups SOCIOL 224
809-217 Race, Class, Gender	General Elective GEN EL
809-241 Race and Ethnic Relations	American Minority Groups (D) SOCIOL 224
809-284 Anthro of Race & Ethnicity	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 e 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. 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. 08/13

Madison Area Technical College

Effective: 2014-2015

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.

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			Hrs/week
First Semester		Credits	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.

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.

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.

Rev. 07/13

Madison Area Technical College

Effective: 2014-2015

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 (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 program requirements and application processing dates visit the programs website at: http://madisoncollege.edu/program-info/associate-degree-nursing-rn.

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.

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	Interpersonal & Small Group Communication* (Note: Speech only, English 2 will no longer suffice.)	(3)	(3-0)
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* (check with your next school about transfer requirements)	(5)	(3-4)
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
	Elective*	4-5	
	Total	36	

FIRST YEAR			Hrs/week
First Semester		Credits	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	Nursing: Intro to Clinical Practice	2	0-6
	Semester Total	9	
Second Semester			
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	Nursing: Intro to Clinical Management	2	0-6
	Semester Total	10	

SECOND YEAR			
First 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	
Second 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	

*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.

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

Madison Area Technical College

Associate Degree Nursing

Program Number: 10-543-1

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 advances 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.

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.

Rev: 06/14

Madison Area Technical College

Effective: 2014-2015

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 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			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
	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.

Madison Area Technical College

Auto Collision Repair and Refinish Technician

Program Number: 31-405-1

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 wind-shields, 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.

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

Rev. 07/13

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 an 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 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			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
32-405-361	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.

MADISON AREA TECHNICAL COLLEGE

Real world smart.

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 td 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 Striping: 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 and 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.

Rev. 08/13

Madison Area Technical College

Effective: 2014-2015

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

10-106-186 Project Management and Coordination 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.

10-414-100 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 2014-2015 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			Hrs/week
First Semester		Credits	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			
10-106-186	Project Management and Coordination	2	0.5-1.5
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			
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			
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

MADISON AREA TECHNICAL COLLEGE

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 trouble-shooting 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.

Rev. 07/13

Madison Area Technical College

Effective: 2014-2015

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.

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 (404) must be 2.0 or above.

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			Hrs/week
First Semester		Credits	Lec-Lab
32-404-319	Automotive Electrical/Electronics	3	4-2
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
10-890-100	College Student Success*	1	1-0
	Semester Total	16	
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	
SECOND YEAR			
First 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	
Second 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		57	

*Meets for 9 weeks.

Notes:

- Safety procedures are required in all labs.
- Prerequisites can be waived with center 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.

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

Automotive Technician

Program Number: 32-404-2

Program Courses

10-442-126 Metal Repair Techniques 2 credits
This course covers safety, layout and measurement, grinding, drill press tne 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 or 32-404-319, and 10-602-166 or 32-404-335; or instructor consent.

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: 32-404-319 and32-404-340.

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. Pre- or Co- requisite: 32-404-319.

32-404-319 Automotive Electricity/ Electronics 3 credits
Because of the rapid advancement of electrical/electronic controls and systems within the contemporary automobile, the need for more advanced training of these systems is essential. Upcoming technicians within the service industry must become better acquainted with the application of and diagnostic approaches to this complex subject area. Every system within the current and upcoming production vehicles will be electronically controlled or will be, at the very least, heavily influenced by this constantly evolving technology. This course will study the science of basic electricity through the application of advanced electronic controls. Sound basic diagnostic practices are studied and practiced in the laboratory setting. Must complete this course with a grade of C or better.

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: 32-404-319 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: 32-404-319, 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: 32-404-319.

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: 32-404-319.

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: 32-404-319.

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: 32-404-319 and 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: 32-404-319 and 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: 32-404-319; 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.

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

Rev. 07/13

Madison Area Technical College

Effective: 2013-2014

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 2013-2014 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
10-602-102	Service Repair Procedures*	4	2-12
10-602-119	Automotive Electronics	3	1-2
10-602-156	Comfort Control Systems*	2	1-2
10-602-166	Powertrain Management Technology*	5	4-14
10-804-107	College Mathematics	3	3-0
	Semester Total	17	

Second Semester			
10-442-126	Metal Repair Techniques	2	2-2
10-602-157	Technical Braking Systems*	4	2-12
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	16	

SECOND YEAR			
First 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	

Second 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
10-602-158	Service Management*	3	3-0
10-801-197	Technical Reporting	3	3-0
10-806-134	General Chemistry	4	3-9
	Semester Total	20	

*Meets for 9 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 center 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.

Madison Area Technical College

Automotive Technology-Comprehensive

Program Number: 10-602-6

Program Courses

10-442-126 Metal Repair Techniques 2 credits
This course covers safety, layout and measurement, grinding, drill press tne 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: 10-602-119.

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 or 32-404-319, and 10-602-166 or 32-404-335; or instructor consent.

10-602-119 Automotive Electronics 3 credits
Because of the rapid advancement of electrical/electronic controls and systems within the contemporary automobile, the need for more advanced training of these systems is essential. Upcoming technicians within the service industry must become better acquainted with the application of and diagnostic approaches to this complex subject area. Every system within the current and upcoming production vehicles will be electronically controlled or will be, at the very least, heavily influenced by this constantly evolving technology. This course will study the science of basic electricity through the application of advanced electronic controls. Sound basic diagnostic practices are studied and practiced in the laboratory setting. Must complete this course with a grade of C or better.

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: 10-602-119, 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: 10-602-119, 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: 10-602-119 and 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: 10-602-119 and 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. Pre- or Co-requisite: 10-602-119.

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: 10-602-119.

10-602-158 Service Management 3 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: 10-602-119 and 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-requisites: 10-602-119.

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: 10-602-119 and 10-602-102.

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. 07/13

Madison Area Technical College

Effective: 2014-2015

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 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.

	Semester prior to start of program	Credits	Hrs/week Lec-Lab
31-314-300	Baking Boot Camp	1	1-1
	Semester Total	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
	Semester Total	14	

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	

Madison Area Technical College
Baking & Decorative Arts

Program Number: 31-314-1

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.

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

Rev. 04/14

Madison Area Technical College

Effective: 2014-2015

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 barbering and cosmetology, and may be licensed to practice in either area. A COMPASS or equivalent assessment test is required before registration.

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/barbercosmetologist

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	Barber/Cosmetology Techniques 1	4	0-8
31-502-322	Barber/Cosmetology Techniques 2	3	0-6
31-502-340	Barber/Cosmetology Theory 1	5	10-0
31-502-341	Barber/Cosmetology Theory 2	5	10-0
31-502-392	Barber/Cosmetology Sales and Advertising 1	1	2-0
10-104-189	Customer Relations	2	2-0
	Semester Total	20	
Second Semester			
31-502-323	Barber/Cosmetology Techniques 3	3	0-6
31-502-324	Barber/Cosmetology Techniques 4	3	0-6
31-502-325	Barber/Cosmetology Techniques 5	5	0-10
31-502-326	Barber/Cosmetology Techniques 6	4	0-8
31-502-342	Barber/Cosmetology Theory 3	2	4-0
31-502-393	Barber/Cosmetology Sales and Advertising 2	1	2-0
	Semester Total	18	
Summer Semester			
31-502-327	Barber/Cosmetology Techniques 7	5	0-10
31-502-328	Barber/Cosmetology Techniques 8	4	0-8
31-502-343	Barber/Cosmetology Theory 4	3	6-0
31-502-395	State Board Review	1	2-0
	Semester Total	13	

Madison Area Technical College

Cosmetology

Program Number: 31-502-1

Program Courses

31-502-330 Making the Cut 1 credit
This valuable course is mandatory for students considering the Barbering/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 Barber/Cosmetology. Upon successful completion of this course, accepted students will be enrolled in the Barber/Cosmetology Academy.

31-502-321 Barber/Cosmetology Techniques 1 4 credits
Introduces various services performed by the barber/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 Barber/Cosmetology Techniques 2 3 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 Barber/Cosmetology Techniques 3 3 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 Barber/Cosmetology Techniques 4 3 credits
Continuation of 31-502-323. Prerequisite: all first semester courses.

31-502-325 Barber/Cosmetology Techniques 5 5 credits
Continuation of 31-502-324. Prerequisite: all first semester courses.

31-502-326 Barber/Cosmetology Techniques 6 4 credits
Continuation of 31-502-325. Prerequisite: all first semester courses.

31-502-327 Barber/Cosmetology Techniques 7 5 credits
Continuation of 31-502-326. Prerequisite: all first and second semester courses.

31-502-328 Barber/Cosmetology Techniques 8 4 credits
Continuation of 31-502-326. Prerequisite: all first and second semester courses.

31-502-340 Barber/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 Barber/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 Barber/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 Barber/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 Barber/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 Barber/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.

10-104-189 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.

Rev. 07/14

Madison Area Technical College

Effective: 2014-2015

Certificates in Microsoft® Office -Basic

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 basic and advanced 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 $10.00 to $12.00 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-certificate-in-microsoft-office.

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.

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 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.

BASIC Certificate in Microsoft® Office		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	

ADVANCED Certificate in Microsoft® Office (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
	Total	8	
	(Choose 6 of the 8 credits)		

**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

Madison Area Technical College

Certificates in Microsoft® Office

Program Number: 90-103-1

Basic Certificate in Microsoft® Office

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.

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Rev. 04/14

Advanced Certificate in Microsoft® Office

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.

Madison Area Technical College

Effective: 2014-2015

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 Basic Medical Reception Skills Certificate may be applied to the Medical Administrative Specialist Associate in Applied Science degree program and the Medical Transcription Technical Diploma 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 leaning/advanced standing.

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.

Fall Semester

Courses		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

Courses		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

Madison Area Technical College

Basic Medical Reception Skills Certificate

Program Number: 90-106-4

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 suing 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. 06/14

Madison Area Technical College

Effective: 2014-2015

Bioenergy Certificate

Program Number: 90-480-3

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 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
Core Course List			
A minimum of 6 credits from these core courses:			
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
	Sub-total	6-9	
Additional Course List			
Plus additional credits from these courses to reach a total of 15 credits:			
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, and Recycling	1	1-0
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 transesterfication 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, transesterfication, 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.

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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Rev. 04/14

Madison Area Technical College

Effective: 2014-2015

Bioinformatics Certificate

Program Number: 90-152-4

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 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.

			Hrs/week
FIRST YEAR			
First Semester		**Credits**	**Lec-Lab**
10-007-180	Introduction to Bioinformatics	3	2-2
10-152-109	Python Programming*	3	2-2
	Semester Total	6	
Second Semester			
10-007-182	Bioinformatics Algorithms and Techniques	3	2-2
	Semester Total	3	
SECOND YEAR			
10-007-181	Advanced Bioinformatics	3	2-2
	Semester Total	3	

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.

Madison Area Technical College

Bioinformatics Certificate

Program Number: 90-152-4

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 better in 10-007-180, 10-152-109, and 10-007-182.

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
10-007-124	Molecular Biology	3 credits
10-007-125	Research Methods Biotechnology	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.

Rev. 04/14

Madison Area Technical College

Effective: 2014-2015

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 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			Hrs/week
First Semester		Credits	Lec-Lab
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)	
SECOND YEAR			
First 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	
Second 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 Number: 10-007-2

Program 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 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.

10-007-104 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).

10-007-105 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).
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10-007-110 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.

10-007-111 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.

10-007-112 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.

Note: Lab included unless otherwise indicated.

10-007-121 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).

10-007-122 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).

10-007-123 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.

10-007-124 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. Prerequisite: 10-007-115.

10-007-125 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.

10-007-126 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.

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

Rev. 04/14

Madison Area Technical College

Effective: 2014-2015

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 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.

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

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

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

Courses		Credits	Hrs/week 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	2-0
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	

Madison Area Technical College
Biotechnology "Traditional" Post-baccalaureate Certificate

Program Number: 90-007-2

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 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.

10-007-104 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.

10-007-105 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.

10-007-116 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 immmunodetection 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.

10-007-117 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.

10-007-118 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.

10-007-119 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.

10-007-122 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.

10-007-123 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.

10-007-124 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.

10-007-125 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.

Note: Lab included unless otherwise noted.

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.

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Rev. 04/14

Madison Area Technical College

Effective: 2014-2015

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 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.

Courses		Credits	Hrs/week 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
	Total	15	

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.

MADISON AREA TECHNICAL COLLEGE

Real world smart.

Madison Area Technical College

Biotechnology Intensive Post-baccalaureate

Program Number: 90-007-2

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.

10-007-122 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.

10-007-123 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.

10-007-124 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.

10-007-124 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.

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Rev. 04/14

Madison Area Technical College

Effective: 2014-2015

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 commit to a 24 month core program cycle of one night a week. 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 just 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.

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			Hrs/week
First Semester		Credits	Lec-Lab
10-101-111	Accounting 1-Principles	4	4-0
10-102-134	Business Organization and Management	3	3-0
10-801-195	Written Communication	3	3-0
10-804-144	Math of Finance	3	3-0
10-809-195	Economics	3	3-0
	Semester Total	16	
Second Semester			
10-102-135	Project Management	3	3.0
10-116-145	Introduction to Human Resources	3	3-0
10-103-133	Excel–Beginning	1	0.25-1.5
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	16	
SECOND YEAR			
First Semester			
10-101-118	Management Accounting	4	4-0
10-102-114	Business Communication	3	3-0
10-102-143	Management Techniques	3	3-0
10-102-168	Employment Law OR	3	3-0
	Concentration Course 1 (see list)	*(3)*	*3-0*
10-103-139	Excel-Intermediate	1	0.25-1.5
10-114-126	Corporate Finance	3	3-0
	Semester Total	17	
Second Semester			
10-102-104	Business Statistics	3	3-0
10-102-132	Leadership for Business Excellence	3	3-0
10-102-133	Business Trends and Topics	3	3.0
10-104-102	Marketing Principles	3	3-0
20-809-276	Business Ethics OR	3	3-0
10-809-166	Intro to Ethics: Theory and Application	(3)	3-0
	Elective OR	3	E
	Concentration Course 2 (see list)	*(3)*	*3-0*
	Semester Total	18	

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 knowledge and marketability.

Madison Area Technical College
Business Management

Program Number: 10-102-3

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, but are not limited to: effective listening, conveying ideas concisely and persuasively during conversations, and adapting one's communication style to best connect with others. Business and managerial applications are emphasized; examples include: selling yourself in an interview setting, business networking, negotiation tactics, and successfully managing difficult ("crucial") conversations while avoiding destructive conflict. The course requires extensive "field work" to apply the concepts learned in class to the real world. This course complements, but does not require, classes in written communication and public speaking.

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 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.

10-102-133 Business Trends and Topics 3 credits
This course provides an understanding of current and future trends in the workplace that will directly or indirectly affect the role of leaders and managers. A discussion-based format will allow the learners to identify, research, and analyze the rapid changes that organizations will be facing and develop strategies to meet these challenges based on the knowledge and skills developed through their course work and experience. The use of outside resources, current literature, periodicals and speakers will ensure that students stay on the forefront of managerial changes. The topics will vary depending on new developments in the areas of business, management and technology. 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 an introductory Project Management class which develops the following project management skills; 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. Skills covered include but are not limited to Project Charters, Gant Charts, Critical Paths, Milestones, Risk Control and Prioritization, Teamwork and Problem Solving.

10-102-143 Management Techniques 3 credits
This course includes both what managers do and techniques for how to manage at first, middle, and top levels. A student who is already a manager can expect to become a better manager. A student who aspires to becoming a manager will acquire techniques to fulfill that aspiration. A student who is not interested in becoming a manager will develop an appreciation for the job of manager. Typical management responsibilities include: placing the right person in the right job; starting new employees in the organization (orientation); training employees for jobs that are new to them; improving the job performance of each person; gaining creative cooperation and developing smooth working relationships; interpreting the company's policies and procedures; controlling labor costs; developing the abilities of each person; creating and maintaining departmental morale; and protecting employees' health and physical conditions.

10-102-168 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.

10-103-133 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.

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

Business-Related Concentration Areas:

Business Management 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.)

Accounting
10-101-113 Accounting 2-Principles
10-101-138 Accounting and Payroll Systems
Finance
10-114-130 Personal Finance
10-114-140 Investments OR
10-114-128 Financial Institutions
Human Resources (certificate also available)
10-116-147 Wage, Salary and Benefits
10-116-152 Organizational Training and Development
10-116-148 Labor Relations
10-116-149 Effective Staffing
International Business
10-102-150 International Business
10-104-180 International Marketing
Marketing
10-104-107 Marketing Management
10-104-114 Social Media Principles
Non-Profit management
10-102-171 Non-Profit Management
10-109-117 Partnership Development
Quality/Process Improvement (certificate also available)
10-625-111 Understanding Organizational Changes
10-625-116 Introduction to Quality Systems
Real Estate
10-194-182 Real Estate Law
10-194-185 Real Estate Brokerage
Risk Management & Insurance (certificate also available)
10-162-133 Managing Business Risks
10-162-135 Detecting Employee Fraud
Social Media (certificate also available)
10-104-114 Social Media Campaigns
10-104-115 Social Media Plus
Sustainability (certificate also available)
10-102-170 Introduction to Sustainable Business
10-102-172 Green Operations and Purchasing
Supervision
10-196-189 Team Building and Problem Solving
10-196-192 Foundations of Quality

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. 04/14

Madison Area Technical College

Effective: 2014-15

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 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.

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	*Innovation to Implementation*	*(3)*	*3-0*
	Total	8-9	

MADISON AREA | TECHNICAL COLLEGE

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Madison Area Technical College

Business Plan Certificate

Program Number: 90-145-3

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 Innovation to Implementation 3 credits
Dreaming of starting your own business? Do you need guidance for your current 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. Topics such as marketing, networking, financing, web design, and resource utilization will also be encompassed in the course. Whether you dream of a new business, or have a plan that needs further development, this course can help you reach your goals. Successful completion of the course will qualify students to compete in the Madison College Business Plan Competition.

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. 02/14

Madison Area Technical College

Effective: 2014-2015

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 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.

			Hrs/week
First Semester		Credits	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[a]	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			
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	

[a] 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.

Madison Area Technical College

Business Software Applications Specialist

Program Number: 31-106-9

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.

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Rev. 04/13

Madison Area Technical College

Effective: 2014-2015

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 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
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
	Semester Total	16	

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
	Semester Total	16	

*Meets for 9 weeks.

Notes:

- Safety procedures are required in all labs.
- Prerequisites can be waived with center approval.
- Advanced standing may be gained through the center dean.
- Certain associate degree or higher post secondary courses specific to the curriculum may substitute for courses upon approval of the 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.

Madison Area Technical College

Cabinetmaking and Millwork

Program Number: 31-409-2

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, his 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.

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Rev. 04/14

Madison Area Technical College

Effective: 2014-2015

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 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

		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	

SECOND YEAR

		Credits	Hrs/week Lec-Lab
First 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	
Second 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.

Madison Area Technical College
Civil Engineering Technology

Program Number: 10-607-1

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.

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Rev. 07/13

Madison Area Technical College

Effective: 2014-2015

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 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			Hrs/week
First Semester		Credits	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			
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			
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.

Madison Area Technical College

Clinical Ophthalmic Assistant

Program Number: 90-516-1

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.

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Rev. 05/13

Madison Area Technical College

Effective: 2014-2015

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 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.

Courses		Credits	Hrs/week
32-420-346	Intro to CNC – G-code Programming○	2	3-1
32-420-337	Manufacturing w/Solid Modeling - 2D♦	2	4-0
32-420-348	Applied CNC - Conversational & Setup♦	2	1-3
32-420-336	Manufacturing w/Solid Modeling – 3D○	2	4-0
32-420-389	Applied CNC - Intermediate Operations○	2	1-3
32-420-370	Manufacturing w/Solid Modeling - Advanced♦	1	2-0
32-420-391	Applied CNC - Advanced Operations♦	1	0-2
	Total	12	

○ 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.

Madison Area Technical College

CNC Specialist Certificate

Program Number: 90-420-1

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.

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.

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Madison Area Technical College

Effective: 2014-2015

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 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
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.

Madison Area Technical College

Construction and Remodeling

Program Number: 31-410-6

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.

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Madison Area Technical College

Effective: 2014-2015

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 as well as in depositions, business meetings, and conferences;
- Broadcast Captioners are realtime reports 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.

The program is accredited by the National Court Reporters Association (NCRA).

Admission Requirements

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

Program Entrance Requirements

Orientation for all new students is mandatory. All new students must purchase or rent a realtime-ready student stenowriter 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 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
10-102-160	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 1	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			
10-170-11`4	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			
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. 06/14

Madison Area Technical College

Effective: 2014-2015

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 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			Hrs/week
First Semester		**Credits**	**Lec-Lab**
10-504-170	Introduction to Corrections Δ	3	3-0
10-504-900	Introduction to Criminal JusticeΔ	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)
10-890-100	College Student Success OR	1	1-0
20-890-200	College Success*	(1)	(1-0)
	Semester Total	16	
Second Semester			
10-504-171	Private Sector SecurityΔ	3	3-0
10-504-902	Criminal LawΔ	3	3-0
10-504-904	Juvenile LawΔ	3	3-0
10-801-196	Oral/Interpersonal CommunicationΔ 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	

SECOND YEAR			
First Semester			
10-504-103	Professional Development Seminar for Criminal JusticeΔ	1	1-0
10-504-901	Constitutional LawΔ	3	3-0
10-504-905	Report WritingΔ	3	3-0
10-504-906	Criminal Investigation TheoryΔ	3	2-2
10-504-908	Traffic TheoryΔ	3	3-0
10-531-150	Emergency Response for Protective ServicesΔ	2	1-1
	Elective	3	E
	Semester Total	18	
Second Semester			
10-504-143	Criminology for Law EnforcementΔ	3	3-0
10-504-152	Emergency ManagementΔ	3	3-0
10-504-903	Professional CommunicationsΔ	3	3-0
10-504-907	Community Policing StrategiesΔ	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	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
10-540-101	Intro to Homeland Security	3 credits
10-540-104	Emergency Preparedness	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.

Rev: 04/14

Madison Area Technical College

Effective: 2014-2015

Culinary Arts

Program Number: 10-316-1

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 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 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			Hrs/week
First Semester		Credits	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			
10-101-116	Hospitality Industry Accounting 1	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	
Summer Session			
10-316-194	Culinary Internship**	2	0-8
SECOND YEAR			
First Semester			
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	
Second Semester			
10-109-125	Tourism Management	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

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Real world smart.

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 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.

10-316-130 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 prospective. 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.

[b]spring semester offering

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

Effective: 2014-2015

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 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
10-508-101	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
	Total	16	

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

Madison Area Technical College

Dental Assistant

Program Number: 30-508-2

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.

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Rev. 04/14

Madison Area Technical College

Effective: 2014-2015

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.

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 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		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	General Microbiology *	(5)	(3-4)
	Semester Total	14	
First Semester			
10-508-101	Dental Health Safety	1	1-0
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
	Elective*	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	
SECOND YEAR			
First 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	Contemporary American Society*	(3)	(3-0)
	Semester Total	16	
Second 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	Written Communication*	(3)	(3-0)
20-810-201	Fundamentals of Speech* OR	3	3-0
10-801-198	Speech	(3)	(3-0)
20-809-236	Applied Psychology* OR	3	3-0
20-809-237	Abnormal Psychology* OR	(3)	(3-0)
20-809-233	Developmental Psychology* OR	(3)	(3-0)
20-809-235	Psychology of Personal Adjustment* OR	(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 are strongly encouraged to be taken prior to admission to the program.

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

MADISON AREA TECHNICAL COLLEGE

Real world smart.

Madison Area Technical College

Dental Hygienist

Program Number: 10-508-1

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 ultra-sonic 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.

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Rev. 08/13

Madison Area Technical College

Effective: 2014-2015

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 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.

			Hrs/week
FIRST YEAR			
First Semester		Credits	Lec-Lab
10-890-100	College Student Success	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.

Madison Area Technical College

Diesel Equipment Technology

Program Number: 10-412-1

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 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. 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, 10-412-140, 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, 10-412-140, 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.

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Rev. 08/13

Madison Area Technical College

Effective: 2014-2015

Diesel and Heavy Equipment Technician

Program Number: 32-412-1

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 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 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			Hrs/week
First Semester		Credits	Lec-Lab
10-890-100	College Student Success	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.

Madison Area Technical College

Diesel and Heavy Equipment Technician

Program Number: 32-412-1

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.

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Rev 08/13

Madison Area Technical College

Effective: 2014-2015

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 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			
10-504-185	Introduction to Computer Forensics∆	3	3-0
10-504-186	Introduction to Internet & Network Concepts∆	3	3-0
10-504-196	Ethics	1	1-0
		7	
Second Semester			
10-504-187	Legal Issues and Digital Evidence	3	3-0
10-504-189	Introduction to Video Evidence∆	3	3-0
10-504-195	Small Devices∆	3	3-0
		9	
Third Semester			
10-504-188	Advanced Computer Forensics/Practicum∆	3	2-2
		3	
	Total	19	

∆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.

Madison Area Technical College

Digital Forensics Certificate

Program Number: 90-504-1

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, stegonography, 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.

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Rev: 04/14

Madison Area Technical College

Effective: 2014-2015

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 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 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			Hrs/week
First Semester		Credits	Lec-Lab
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
20-810-205	Small Group and Interpersonal Communication*	(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	
SECOND YEAR			
First 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	
Second 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 is 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. Students interested in a part-time schedule should consult the Program Director prior to registration.

Madison Area Technical College
Early Childhood Education

Program Number: 10-307-1

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: COMPASS Reading score of 65 or higher.

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: COMPASS Reading score of 65 or higher.

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: COMPASS Reading score of 65 or higher.

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 standards for quality in early childhood education. This first of four training experiences develops skill in interacting with children and adults. Madison College faculty help students through periodic observation and conferences. In addition, there is a weekly discussion focusing on what students are observing and learning at their practicum sites and on developing skills as team members. Prerequisite: COMPASS Reading score of 65 or higher.

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 Madison College faculty and teacher-caregivers at centers. Planning and implementing activities are included and conferences are scheduled to help students.
Prerequisite: 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. Prerequisites: 10-307-174 and 10-307-192.

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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Rev. 04/14

Madison Area Technical College

Effective: 2014-2015

Electrical Engineering Technology

Program Number: 10-662-1

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 Technology 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

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.

Applicants can receive advanced standing for Applied Electronics Math 1 by scoring a 66 in College Algebra section of the COMPASS test. Advanced placement for Applied Electronics Math 2 can be obtained by scoring a 46 in the Trigonometry section of the COMPASS test. 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 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			Hrs/week
First Semester		Credits	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			
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	
SECOND YEAR			
First Semester			
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	
Second Semester			
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]

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).

Madison Area Technical College

Electrical Engineering Technology

Program Number: 10-662-1

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 not automatic upon course completion. IPC certification is awarded separately from the academic credits. Prerequisite: 10-605-118.

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, 10-605-173, and 10-605-176.

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 studies 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

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.

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Madison Area Technical College

Effective: 2014-2015

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 COMPASS placement test score for Algebra 1 (1-39), or 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 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.

OPTION 1: SINGLE SEMESTER			Hrs/week
First Semester		Credits	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			
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.

Rev: 07/14

Madison Area Technical College

Electronics

Effective: 2014-2015

Program Number: 10-605-1

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

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.

Applicants can receive advanced standing for Applied Electronics Math 1 by scoring a 66 on the College Algebra section of the COMPASS test. Advanced placement for Applied Electronics Math 2 can be obtained by scoring a 46 in the Trigonometry section of the COMPASS test. 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 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

	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
10-605-171	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	

SECOND YEAR

	First 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	

	Second 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.

Madison Area Technical College
Electronics

Program Number: 10-605-1

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:

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. *IPC certification is not automatic upon course completion. 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.

10-605-123 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 10-605-173, or 10-605-123.

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 Course is only offered in the first 8 weeks of each semester. Prerequisite:

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

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

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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Madison Area Technical College

Effective: 2014-2015

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 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.

			Hrs/week
First Semester		Credits	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
	Semester Total	11	
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 critical thinking competencies are required.

Madison Area Technical College

Electron Microscopy Post-Baccalaureate Certificate

Program Number: 90-636-1

Program Courses

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.

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Rev. 03/14

Madison Area Technical College

Effective: 2013-2014

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 2013-2014 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
10-636-111	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 Number: 10-636-1

Program Courses

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.

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Rev. 07/13

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 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.

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

Course		Credits	Hrs/week 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

Madison Area Technical College

Emergency Medical Technician

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

Advanced EMT (AEMT)
Less-Than-One-Year Diploma

This course builds on the EMT curriculum. Students learn advanced patient assessment, communication skills and beginning advanced life support interventions. This course meets the educational requirements for EMT Intermediate Technician licensure in Wisconsin. Prerequisite: a valid Wisconsin EMT-Basic license. Students must complete a Criminal History Check as required by the state for licensure and clinical sites. The Department of Health and Family Services may set other requirements. For additional Advanced EMT course information and application/registration materials, go to: http://madisoncollege.edu/program-info/advanced-emt and click on the Admissions tab.

Program Course

30-531-360 Advanced EMT 4 credits
Students learn advanced patient assessment, communication skills and beginning advanced life support interventions. Meets requirements for licensure in Wisconsin. Prerequisite: a valid Wisconsin EMT–Basic License.

Career Potential:

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

- Emergency Room Technician
- Firefighter
- Emergency Medical Technician-Intermediate
- EKG Technician
- Paramedic
- Medical Laboratory Technician
- Home Health Aide
- Medical Assistant
- Emergency Medical Technician-Paramedic
- 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: 05/14

Madison Area Technical College

Effective: 2012-2013

Engineering Transfer Blueprint Program

Program Number: 20-800-1E

An articulation agreement with University of Wisconsin-Madison College of Engineering (COE)

School of Arts and Sciences

Courses offered at Madison Campus

For information call: (608) 246-6246
(800) 322-6282 ext. 6246

Engineering Transfer Blueprint Overview

Madison Area Technical College and University of Wisconsin-Madison (UW-Madison) College of Engineering (COE) have signed an agreement which provides a clear pathway for students to start their post-secondary engineering career at Madison Area Technical College and, if all conditions are met, be guaranteed admission into UW-Madison's COE. The transfer agreement applies only to 9 specific degree programs, namely:

- Civil Engineering
- Computer Engineering
- Electrical Engineering
- Engineering Mechanics
- Geological Engineering
- Industrial Engineering
- Materials Science and Engineering
- Mechanical Engineering
- Nuclear Engineering

Eligibility: Students must be enrolled at Madison Area Technical College and sign a Declaration of Intent to Participate form prior to the completion of 30 college transfer credits. They must specify the engineering degree program at UW-Madison they wish to enter. They will then become Engineering Transfer Blueprint candidates.

The Agreement: Madison Area Technical College students must fulfill the Minimum Requirements for Application to University of Wisconsin-Madison. They must also complete UW-Madison COE Admission Requirements with at least a 2.5 grade point average (GPA) in specified math/science courses and an overall Madison Area Technical College GPA of at least a 3.0 in all college transfer courses. Students who successfully complete these requirements are guaranteed admission to one of UW-Madison's participating engineering degree-granting programs.

Additional details regarding the Engineering Transfer Blueprint can be found in a separate document called The Engineering Transfer Blueprint Requirements.

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.

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Curriculum

The courses listed below outline the requirements for graduation for students entering this program in the 2012-2013 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 degree progress report available through their student center account for specific graduation requirements. Program requirements are subject to change.

FIRST YEAR			Hrs/week
First Semester		Credits	Lec-Lab
20-801-201	English 1*	3	3-0
20-804-231	Calculus and Analytic Geometry 1*	5	5-0
20-806-209	College Chemistry 1*	5	4-3
	Social Science/Humanities**	3	3-0
	Semester Total	16	
Second Semester			
20-804-232	Calculus and Analytic Geometry 2*	5	5-0
20-806-212	College Chemistry 2*	5	4-3
20-623-260	Introduction to Engineering Design***	3	2-3
	Social Science/Humanities**	3	3-0
	Semester Total	16	
SECOND YEAR			
First Semester			
20-806-223	University Physics 1-Calculus Based*	5	5-3
20-804-233	Calculus 3**	5	5-0
	Recommended Course***	3-5	
	Social Science/Humanities/Ethnic Studies**	3	3-0
	Semester Total	16-18	
Second Semester			
20-806-224	University Physics 2-Calculus Based**	5	5-3
20-804-241	Introduction to Engineering Statistics***	3	5-0
	Recommended Course***	3-5	
	Social Science/Humanities**	3	3-0
	Semester Total	14-16	

*Required for Engineering Transfer Blueprint.

**Required in all COE degree programs. (Exception: Calculus 3 is not required for Materials Science and Engineering.)

***Recommended course. One or more of these courses might fulfill COE degree program requirements; check the curriculum of your specified program and consult with an advisor.

20-606-231	Introductory Engineering Graphics	3 credits
20-605-252	Introduction to Computer Engineering	3 credits
20-605-270	AC/DC Circuit Techniques and Principles	3 credits
20-804-255	Techniques in Ordinary Differential Equations	3 credits
20-804-256	Elem Matrix and Linear Algebra	3 credits
10-801-198	Speech	3 credits
20-623-260	Introduction to Engineering Design	3 credits
20-804-208	Computer Science	3 credits
20-804-241	Introduction to Engineering Statistics	3 credits
20-804-265	Into to Discrete Math	3 credits
20-806-203	Introduction to Zoology	5 credits
20-806-209	Organic Chemistry 1	5 credits
20-806-212	Organic Chemistry 2	5 credits
20-806-207	Anatomy & Physiology 1	5 credits
20-806-208	Anatomy & Physiology 2	5 credits
20-806-244	General Geology	4 credits
20-806-274	General Microbiology	5 credits
20-809-211	Macroeconomics	3 credits
20-809-212	Microeconomics	3 credits
20-809-228	Environmental Economics	3 credits

MADISON AREA TECHNICAL COLLEGE

Madison Area Technical College

Effective: 2014-15

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 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.

Courses		Credits	Hrs/week Lec/On the Job
10-104-185	Customer Service Management	3	3-0
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
10-145-217	*Innovation to Implementation*	*(3)*	*3-0*
	Total	14-15	

Madison Area Technical College

Entrepreneurship Certificate

Program Number: 90-145-2

Courses

10-104-185 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.

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
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.

10-145-106 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 Innovation to Implementation 3 credits
Dreaming of starting your own business? Do you need guidance for your current 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. Topics such as marketing, networking, financing, web design, and resource utilization will also be encompassed in the course. Whether you dream of a new business, or have a plan that needs further development, this course can help you reach your goals. Successful completion of the course will qualify students to compete in the Madison College Business Plan Competition.

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. 02/14

Madison Area Technical College

Effective: 2013-2014

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 Ethnics 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 2013-2014 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
Literature Courses:		**Credits**	**Lec-Lab**
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
20-803-238	Introduction to North American Latino/Chicano Histories	3	3-0
20-803-240	Afro-American History	3	3-0
Social Sciences Courses:			
20-809-217	Race, Class, Gender	3	3-0
20-809-283	Cultural Anthropology & Human Diversity	3	3-0
20-809-286	The Anthropology of Globalization & Multiculturalism	3	3-0

To be awarded the Madison College Ethnic Studies certificate, you need to successfully complete at least one course from each of the three academic areas (Literature, History and Social Sciences) and also complete an independent research project under the supervision of the Ethnics Studies director. Contact John Luke Matthews at (608) 258-2438 or email at JMatthews@madisoncollege.edu.

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

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.

20-803-238 Introduction to North American Latino/Chicano Histories 3 credits
This course surveys Latino/Chicano (a) histories and cultures in North America from earliest times to the present. Special emphasis is placed on indigenous peoples as well as later immigrants from Mexico, Cuba, Puerto Rico, Central and South America, and other areas within the Caribbean. Students are introduced to the varieties and complexities of Latino/Chicano social, political and economic conditions and achievements in the region of what is now the United States. 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.

20-809-217 Race, Class, Gender 3 credits
This introductory course examines ethnic, racial, religious and cultural origins of Americans. The course focuses on social interactions that contribute to the understanding of different groups in diverse settings.

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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Rev. 08/13

Madison Area Technical College

Effective: 2013-2014

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 Ethnics 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 2013-2014 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
Literature Courses:		**Credits**	**Lec-Lab**
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
20-803-238	Introduction to North American Latino/Chicano Histories	3	3-0
20-803-240	Afro-American History	3	3-0
Social Sciences Courses:			
20-809-217	Race, Class, Gender	3	3-0
20-809-283	Cultural Anthropology & Human Diversity	3	3-0
20-809-286	The Anthropology of Globalization & Multiculturalism	3	3-0

To be awarded the Madison College Ethnic Studies certificate, you need to successfully complete at least one course from each of the three academic areas (Literature, History and Social Sciences) and also complete an independent research project under the supervision of the Ethnics Studies director. Contact John Luke Matthews at (608) 258-2438 or email at JMatthews@madisoncollege.edu.

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

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.

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This course surveys Latino/Chicano (a) histories and cultures in North America from earliest times to the present. Special emphasis is placed on indigenous peoples as well as later immigrants from Mexico, Cuba, Puerto Rico, Central and South America, and other areas within the Caribbean. Students are introduced to the varieties and complexities of Latino/Chicano social, political and economic conditions and achievements in the region of what is now the United States. 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.

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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.

20-809-217 Race, Class, Gender 3 credits
This introductory course examines ethnic, racial, religious and cultural origins of Americans. The course focuses on social interactions that contribute to the understanding of different groups in diverse settings.

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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Rev. 08/13

Madison Area Technical College

Effective: 2014-2015

Event Marketing Certificate

Program Number: 90-109-5

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

Organizations are focusing on achieving financial results by creating events that engage key customers, channel partners, employees, and vendors. Event marketing, also called engagement marketing, is a marketing strategy that directly invites and encourages consumers to participate in the evolution of a brand. Meetings, events, and tradeshows are the highly effective in the brand development process. This certificate combines the competencies of both meeting and event management with marketing to prepare students to create experiences that transform the meeting experience into engagement with the brand and accelerate the buying relationship.

Admissions Requirements

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

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 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.

			Hrs/week
Two Required Courses		Credits	Lec-Lab
10-104-107	Marketing Management	3	3-0
10-109-104	Meeting Design	3	3-0
		6	
Two Elective Courses			
Students must also complete at least one course from each of the following lists:			
Marketing (select one):			
10-104-114	Social Media Campaigns	3	3-0
10-104-126	Publicity and Promotional Strategies	3	3-0
		3	
Meeting and Event Management Courses (select one):			
10-109-110	Meeting Coordination	3	3-0
10-109-112	Exhibition Management	2	3-0
		2-3	
	Total	11-12	

Madison Area Technical College
Event Marketing Certificate

Program Number: 90-109-5

Courses

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 proposal writing and interpreting marketing information are other topics 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. Prerequisite: 10-104-102

10-104-114 Social Media Campaigns 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. Prerequisite: 10-104-102

10-104-126 Publicity & Promotional Strategies 3 credits
This course further explores the elements of the promotions mix-public relations, sales promotion, media buying and sponsorship/sports marketing. Flexibility is built into the course to allow for additional time to cover specific types of promotion such as trade shows and/or other popular techniques of promotion. This course, together with Promotion Principles 1 (advertising focus) provides students with a complete understanding of the promotions mix and how it is an integral part of today's marketing. Prerequisite: 10-104-102

10-109-104 Meeting Design 3 credits
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.

10-109-110 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

10-109-112 Exhibition Management 2 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 an exhibitor prospectus; identify contractors necessary for producing the show; and learn how to effectively interact and communicate with exhibitors throughout the process. Prerequisite: 10-109-102

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. 11/13

Madison Area Technical College

Effective: 2014-2015

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. 06/13

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.

Courses		Credits	Hrs/week 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	Building Management Systems**	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.

Madison Area Technical College

Effective: 2014-2015

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. Second-year students enroll in the Internship course during the summer semester and receive 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-seven 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 Ann Taylor, Boston Store, Buckle, Old Navy, Lands End, TJX Companies, Victoria's Secret, Macy's, Wintersilks, 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.

Design Focus – students interested should contact the program director.

Admissions Requirements

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

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.

			Hrs/week
FIRST YEAR			
First Semester		**Credits**	**Lec-Lab**
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	
Summer Semester			
10-104-157	Fashion Internship	3	3-0
SECOND YEAR			
First Semester			
10-104-113	Leadership Strategies in Marketing	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	
Second 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 program advisor for information.
***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.

Madison Area Technical College
Fashion Marketing

Program Number: 10-104-4

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.

10-104-110 Supervision Principles 3 credits
Introduces the principles, methods and techniques of supervision and their application to case problems. Special attention is given to problem-solving, small group decision-making, teamwork and the supervisor-employee relationship.

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.

10-104-157 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.

10-104-161 Marketing Computer Applications 3 credits
Students acquire various technology skills and apply it to marketing-related business requirements. Through hands-on experience, students will complete projects related to word processing, spreadsheets, databases, presentations, web navigation and Internet communications. In addition, effective presentation techniques, proper file management and appropriate email etiquette are emphasized. Prerequisite: introduction to computers, basic keyboard or equivalent work experience.

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.

10-104-193 Introduction to Promotion 3 credits
Introduces students to the theory and practice of integrated marketing communications (IMC). Elements of the promotions mix are summarized including advertising, public relations and sales promotion. Characteristics of major media, including print and broadcast are examined. This course is an overview and is not intended for students enrolled in the Marketing program.

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

10-103-139	Excel–Intermediate	1 credit
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
10-104-124	Retail Management	3 credits
10-104-162	Mobile Marketing (Social Media)	3 credits
10-104-185	Customer Service Management	3 credits
10-104-186	History of Costume	3 credits
10-201-198	Social Media/Web Design Strategies	3 credits

Also recommended:

10-104-120 Adobe Photoshop Fashion Design 3 credits
This course focuses on the key tools and processes using Adobe Photoshop and other computer software programs that are part of technical specification design packets in the fashion industry. Students will be creating projects in major categories of fashion.

10-104-122 Adobe Illustrator for Fashion 3 credits
This course focuses on the key tools and processes using Adobe Illustrator and other computer software programs that are part of technical specification design packets in the fashion industry. Students will be creating projects in major categories of fashion.

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.

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Rev. 04/14

Madison Area Technical College

Effective: 2014-2015

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 occupational specific 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 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			Hrs/week
First Semester		Credits	Lec-Lab
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*	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*	3	3-0
	Semester Total	17 (18)	
SECOND YEAR			
First 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*	3	3-0
10-801-196	Oral/Interpersonal Communication*	3	3-0
	Semester Total	16	
Second Semester			
10-114-127	Financial Analysis	3	3-0
10-114-140	Investments	3	3-0
10-102-143	Management Techniques	3	3-0
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
	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 the Center for Business & Applied Arts (Room 369) 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. 04/14

Effective: 2014-2015

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 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.

Fire Protection Technician

FIRST YEAR			Hrs/week
First Semester		Credits	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 AND	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 Recruit AcademyΔ	(5)	(1-0-9)
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	
SECOND YEAR			
First Semester			
10-503-148	Principles of Fire and Emergency Service AdministrationΔ	4	4-0
10-503-151	Fire Prevention	4	4-0
10-503-195	Fire Behavior and CombustionΔ	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	
Second Semester			
10-503-156	Strategies, Tactics & Incident ManagementΔ	4	4-0
10-503-157	Fire InvestigationΔ	3	3-0
10-503-192	Principles of Emergency Services/Survival	3	2-2
10-503-193	Fire Protection SystemsΔ	3	3-0
10-503-194	Fire Protection HydraulicsΔ	3	3-0
	Elective	1	E
	Semester Total	17	

*College transfer equivalent courses
ΔPrerequisite 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 Δ OR	5	6-4
10-503-100	Fire Recruit AcademyΔ	(5)	(1-0-9)
10-531-102	Emergency Medical Technician 1 AND	2	7-4
10-531-103	Emergency Medical Technician 2	3	7-4
	Total	10	

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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 he 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. Prerequisite: 10-503-139 and 10-503-143.

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: 10-503-151, 10-503-152, 10-503-157.

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, 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
10-540-101	Intro to Homeland Security	3 credits
10-540-104	Emergency Preparedness	3 credits

***3 elective credits are required for the program and can be any three 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: COMPASS Reading score of 80 or higher.

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 Asset Reading of 40+, OR have transcripts on file showing a college level English course with a grade of C or better.

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+, ACT of 18+, OR Asset Reading of 40+, 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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Rev: 04/14

Effective: 2014-2015

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 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.

Fire Protection Technician

FIRST YEAR			Hrs/week
First Semester		Credits	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 AND	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 Recruit AcademyΔ	(5)	(1-0-9)
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	
SECOND YEAR			
First Semester			
10-503-148	Principles of Fire and Emergency Service AdministrationΔ	4	4-0
10-503-151	Fire Prevention	4	4-0
10-503-195	Fire Behavior and CombustionΔ	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	
Second Semester			
10-503-156	Strategies, Tactics & Incident ManagementΔ	4	4-0
10-503-157	Fire InvestigationΔ	3	3-0
10-503-192	Principles of Emergency Services/Survival	3	2-2
10-503-193	Fire Protection SystemsΔ	3	3-0
10-503-194	Fire Protection HydraulicsΔ	3	3-0
	Elective	1	E
	Semester Total	17	

*College transfer equivalent courses
ΔPrerequisite 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 Δ OR	5	6-4
10-503-100	Fire Recruit AcademyΔ	(5)	(1-0-9)
10-531-102	Emergency Medical Technician 1 AND	2	7-4
10-531-103	Emergency Medical Technician 2	3	7-4
	Total	10	

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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 he 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. Prerequisite: 10-503-139 and 10-503-143.

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: 10-503-151, 10-503-152, 10-503-157.

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, 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
10-540-101	Intro to Homeland Security	3 credits
10-540-104	Emergency Preparedness	3 credits

***3 elective credits are required for the program and can be any three 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: COMPASS Reading score of 80 or higher.

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 Asset Reading of 40+, OR have transcripts on file showing a college level English course with a grade of C or better.

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+, ACT of 18+, OR Asset Reading of 40+, 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.

Rev: 04/14

Madison Area Technical College

Effective: 2014-15

Fitness/Health Club Specialist Certificate

Program Number: 90-109-1

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 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 (Fall)		Credits	Hrs/week Lec-Lab
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.

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

Rev. 05/13

Madison Area Technical College

Effective: 2014-2015

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.

			Hrs/week
First Semester		Credits	Lec-Lab
10-316-101	Principles of Sanitation*	1	1-0
10-316-106	Food Theory*	2	2-0
10-316-111	Professional Cooking 1*	4	0-8
10-316-118	Meat Cutting	2	1-2
10-316-112	Cuisines of the World	4	0-8
	Semester Total	13	

Second Semester			
10-316-108	Culinary Baking Fundamentals**	1	1-0
10-316-115	Culinary Baking Lab**	2	0-4
10-316-121	Professional Cooking 2	4	0-8
10-316-139	Catering	2	1-2
10-316-152	Nutrition	1	1-0
10-316-194	Culinary Internship	2	0-8
10-316-189	Breakfast Cookery	1	0-2
	Semester Total	13	

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 and a grade of C or better is required to continue with second semester courses.

**Baking Theory and Culinary Baking Lab must be taken concurrently.

Madison Area Technical College
Food Service Production

Program Number: 30-303-2

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.

10-316-106 Food Theory 2 credits
This lecture class teaches students basic culinary technique, classifications, equipment identification and all rudimentary aspects of professional cooking. Discussion includes culinary history, food group identification, and raw and cooked food classifications. Topics also cover stock making, knife skills, and equipment operation. Co-requisite: 10-316-111 and prerequisite of appropriate Reading Placement test score or equivalent course.

10-316-108 Culinary Baking Fundamentals 1 credit
This course provides an overview of basic baking principles and knowledge of the functions of major ingredients used in culinary baking. There are in depth lectures as well as practice of plating techniques for Gourmet service. How to set up a pastry station in a restaurant setting is discussed. 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 apply classroom work and lectures into hands-on cooking situations. All methods of cookery are covered and knife skills and other vital techniques are reinforced. Students experience practical situations as they produce food in a simulated food service environment. Emphasis on regional cookery, fusion cooking, classical cuisine and Nouvelle cuisine. Students create menus from scratch and interpret more refined recipes. Prerequisite or concurrent enrollment in 10-316-101; concurrent enrollment in 10-316-106 and appropriate Math Placement test score or equivalent course.

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 and appropriate Math Placement test score or equivalent course.

10-316-115 Culinary Baking Lab 2 credits
Introduces students to the fundamentals of production baking through hands-on application in a modern baking lab using production equipment. Students prepare a variety of standard bakery products, such as cookies, muffins, pies and breads, to obtain knowledge of the many processes of baking. Students also practice basic cake decorating techniques. Prerequisites: 10-316-101 and 10-316-111, and concurrent enrollment in 10-316-108.

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. Prerequisites or Co-requisites: 10-316-101 and 10-316-111 and prerequisite of appropriate Reading Placement test score or equivalent course.

10-316-121 Professional Cooking 2 4 credits
Continuation of 10-316-111 with emphasis placed on the demands of "cutting edge" cuisine. Students elevate their skills to such diversity as infusions, emulsions, terrines, reductions, and fat free cuisine. Students interpret intense recipes, create dishes from scratch, and research international cuisine. Students prepare themselves for the rigor of the food service industry as they fine-tune all their skills. Research will be done on modern cuisine and trends. "Great American Chef Tours" including examination of the culinary epicenters of New York, San Francisco, and New Orleans. Students learn the specialty of catering, gourmet store operation, and private chef occupations. Prerequisites: grade of C or better in 10-316-101, 10-316-106 and 10-316-111.

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: grade of C or better in 10-316-101 and 10-316-111.

10-316-152 Nutrition 2 credits
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.

10-316-189 Breakfast Cookery 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. Prerequisite: 10-316-101 and 10-316-111.

10-316-194 Culinary Internship 2 credits
This course is designed to give students an opportunity to gain practical work experience through a supervised internship at an approved job site. This course is intended to complement and enhance program core courses. Selection of a site is based on the student's individual professional objectives.
Prerequisites for Culinary Arts students: grade of C or better in 10-316-111, 10-316-121, 10-316-101, 10-316-115, 10-316-106, and 10-316-108.
Prerequisites for Food Service Production students: grade of C or better in 10-316-111, 10-316-101, 10-316-115, 10-316-106, 10-316-108, and concurrent enrollment in 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.

Rev. 08/13

Madison Area Technical College

General Accountancy

Effective: 2014-2015

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 40 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 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.

			Hrs/week
FIRST SEMESTER		Credits	Lec-Lab
10-101-111	Accounting 1-Principles	4	4-0
10-103-133	Excel–Beginning	1	0.25-1.5
10-804-144	Math of Finance	3	3-0
	Semester Total	8	
SECOND SEMESTER			
10-101-113	Accounting 2-Principles	4	4-0
10-101-123	Tax 1	4	4-0
0-114-126	Corporate Finance	3	3-0
	Semester Total	11	
THIRD SEMESTER			
10-101-121	Accounting 3-Intermediate	4	4-0
10-101-125	Cost Management	4	4-0
10-101-137	Computerized Accounting Applications	3	3-0
	Semester Total	11	
FOURTH SEMESTER			
10-101-122	Accounting 4-Intermediate	4	4-0
10-101-124	Auditing	3	1-4
10-101-138	Accounting and Payroll Systems (OR)	3	1-4
	All of the following three courses:		
10-101-152	*Introduction to Peachtree Accounting*	*(2)*	*1-2*
10-101-153	*Systems Accounting Cycle*	*(1)*	*0.5-1*
10-101-154	*Payroll Accounting*	*(1)*	*0.5-1*
	Semester Total	10 (11)	
	Program Total	40 (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.

Madison Area Technical College

General Accountancy

Program Number: 31-101-3

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.

10-101-124 Auditing 3 credits
This course is an introduction to auditing. Emphasis is on the preparation of working papers to support audit findings. An audit case is completed to illustrate various auditing concepts and procedures. The course includes an evaluation of internal controls, conventional auditing procedures, and the preparation of audited financial statements in conformity with generally accepted accounting principles. Prerequisite: 10-101-121.

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 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. In addition, the student will learn to use QuickBooks Pro accounting software. 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 Peachtree accounting software. Prerequisite: grade of C or better in 10-101-113 (or concurrent enrollment) and completion of 10-103-133.

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 a C or better in 10-101-113 and 10-804-144.

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 or Elementary Algebra with Applications, 10-834-110.

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

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. 07/14

Madison Area Technical College

Effective: 2014-2015

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 in a variety of challenging areas for print 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 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			Hrs/week
First Semester		Credits	Lec-Lab
10-201-102	Design Fundamentals OR	3	0-6
20-815-201	Basic Design	(3)	0-6
10-201-103	Drawing Fundamentals OR	3	0-6
20-815-205	Drawing Fundamentals	(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	Math with Business Applications	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	Business Ethics*	(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	Intro to Art History OR	(3)	3-0
20-815-210	Art History: Modern Era 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.

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

Rev. 04/14

Madison Area Technical College

Effective: 2014-2015

Homeland Security/Emergency Preparedness Certificate

Program Number: 90-540-1

Certificate

Protective Services Program Cluster

School of Human and Protective Services

Program offered at Truax Campus

For information call: (608) 246-5251 or
(800) 322-6282 Ext. 5251 or
Edawson@madisoncollege.edu

About the Certificate

The Homeland Security/Emergency Preparedness Certificate is designed to prepare students with the strategic managerial skills necessary to mitigate, prepare for, respond to, and recover from any potential man-made or natural disaster event. Students will engage in Table-Top exercises consisting of multi-scenario incidents and agencies, and gain hands-on classroom experience employing comprehensive emergency management knowledge and strategies.

Additionally, the constant threat of terrorism and events surrounding situations such as the attacks on the World Trade Center, the documented rise in the number of weather-related disasters, and increasingly complex world events with regard to other natural and human-induced disasters provides strong evidence for the immediate and long-term need for well-educated and highly qualified Homeland Security professionals.

Students completing the Homeland Security/Emergency Preparedness curriculum will gain the necessary knowledge and skills to contribute to the four phases of emergency preparedness: mitigation, preparedness, response, and recovery. Students will be knowledgeable and have an understanding of how individuals, private sector businesses, not-for-profit organizations and all levels of government should mitigate, prepare for, respond to and recover from emergencies. Students completing the program will be able to face the specific challenges encountered by community leaders and managers.

Traditional students, firefighters, law enforcement officers, emergency medical personnel, homeland security officers, safety officers, engineers, scientists, nurses, health care practitioners, and social workers in both the public and the private sectors will enhance career opportunities and be better prepared to offer practical strategies and methodologies for effective response and recovery.

Learning activities will include: fundamentals in emergency planning; leadership and influence; decision making and problem solving; incident command; national response framework; exercise programs; emergency operations center; simulator training and internships. Graduates will be able to engage, facilitate and encourage community and organizational emergency preparedness to newly recognized national standards.

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.

Courses		Credits	Hrs/week Lec-Lab
10-540-101	Introduction to Homeland Security	3	3-0
10-540-102	Business Continuity	3	3-0
10-540-103	Community Resilience Planning	3	3-0
10-540-104	Emergency Preparedness	3	3-0
10-540-105	Homeland Security Grant/Fiscal Management	3	3-0
	Total	15	

Admission Requirements

To review program admission requirements and application processing dates, visit the program's website at: http://madisoncollege.edu/program-info/homeland-security-emergency-preparedness.

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.

Madison Area Technical College

Homeland Security/Emergency Preparedness Certificate

Program Number: 90-540-1

Program Courses

10-540-101 Introduction to Homeland Security 3 credits

The historical and current dimensions of the terrorist threat and related homeland security concepts and issues will be analyzed. An overview of the roles of federal, state and local entities in both the public and private sectors regarding homeland security since 9/11 is central to this discussion. The aspects of planning, preparedness and response will be addressed in the context of government organizational structures, capabilities and legal frameworks. Protection of critical infrastructure and systems including agriculture, banking/finance, communications, cyber, energy, transportation, and others will be assessed using case studies and related information.

10-540-102 Business Continuity 3 credits

This course examines the management issues involved with assessing the security and risk environments in both the private and public sectors in order to assure continuous system-wide operations. The course studies the elements of risk assessment and operational continuity using the project management framework of planning, organizing, and control. Students are exposed to the role of the firm/company in crisis response and management as well as the terms, systems, and interactions necessary to assure continuous operations. Topics include: the role and need for comprehensive assurance strategy and planning; the security aspects of the firm/company; an overview of the system-wide structure—as well as the organizations within that structure—designed to plan for and respond to local national crisis; the social and emotional impact on the workforce as well as its effect on productivity; and the organizational infrastructure relating to national, regional, and international compliance.

10-540-103 Community Resilience Planning 3 credits

This course examines the concept of community resiliency in the age of climate change. How do planners and designers measure, foster, organize, evaluate and implement the medley of tools, processes and programs that seek to foster resiliency in urban communities? The course reviews the concept of urban and rural adaptation in the context of vulnerability and adaptive capacity, and examines adaptive planning through the lens of environmental justice. Research on planning and urban and rural design approaches that minimize the hazards and public health risks of climate change and variability is emphasized. We will discuss the empirical evidence on climate impacts and the broader political economy of decision-making around environmental health issues and its relevance to creating resilient communities. We start with a definition offered by the Community and Regional Resilience Institute, "Community resilience is the capability to anticipate risk, limit impact, and bounce back rapidly through survival, adaptability, evolution, and growth in the face of turbulent change" and examine the work of successful initiatives such as Envi Renew, which has created a multi-sector dialogue on how communities can plan in advance of a disaster to rebuild in more resilient and sustainable ways after a disaster.

10-540-104 Emergency Preparedness 3 credits

This course introduces the basic concepts, operational procedures, and authorities involved in preparation, mitigation, response and recovery efforts to major disasters. Students will learn techniques and methods necessary to minimize the impact of natural, technological, and man-made disasters. Topics include federal, state, and local roles and responsibilities in major disaster response and recovery work, with an emphasis on governmental coordination. Upon completion, students should be able to implement a complete disaster response plan and assess the needs of those involved in a major disaster.

10-540-105 Homeland Security Grant and Fiscal Management 3 credits

This course will focus on the development and implementation of a Homeland Security Program. Students will learn of the wide array of funding sources, filing deadlines, and the wide variety of formats that may be required when seeking health and safety, critical infrastructure protection, and public safety grants. Specific Wisconsin Emergency Management Agency (WEM), Federal Emergency Management Agency (FEMA), and Department of Homeland Security (DHS) related guidelines will be reviewed and studied. Website links will be explored and information will be provided to identify grant sources appropriate for the agency needs. The student will draft at least one grant proposal for evaluation. The need for careful management, fiscal accountability, and quality control of grants received will be re-enforced and a review of audit and best practice methodology will be reviewed.

Career Potential:

- Emergency Manager
- Emergency Preparedness Specialist
- Program Specialist (fire; national security; response; preparedness; and mitigation
- Security Specialist
- Transportation Security Screener

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

- Immigration Officer
- Asylum Officer
- Border Patrol Agent
- Import Specialist
- Federal Coordinating Officer
- Law Enforcement Specialist (instruction)
- Detention and Deportation Officer
- Police Officer
- Intelligence Operations Specialist
- IT Specialist
- Telecommunications Specialist
- Criminal Investigator
- Contract 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. 10/13

Madison Area Technical College

Effective: 2014-15

Hotel and Restaurant 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 Hotel and Restaurant 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.

Hotel and Restaurant 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/hotel-restaurant-management.

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.

			Hrs/week
First Semester		**Credits**	**Lec-Lab**
10-109-101	Introduction to Tourism Services	2	2-0
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	14	
Second Semester			
10-101-116	Hotel/Restaurant Accounting 1*	3	3-0
10-109-102	Fundamentals of Meeting Management	3	3-0
10-109-136	Tourism Law	3	3-0
20-810-205	Interpersonal/Small Group Communication OR	3	3-0
10-801-196	Oral/Interpersonal Communication	(3)	(3-0)
10-802-100	Occupational Spanish/Conversation for Tourism	3	3-0
10-809-197	Contemporary American Society	3	3-0
	Semester Total	18	
Summer Semester			
10-109-157	Hospitality Internship* (Field Experience)	2	0-8
Third Semester			
10-101-117	Hotel/Restaurant Accounting 2*	3	3-0
10-109-124	Fundamentals of Food Preparation*	2	1-2
10-109-125	Tourism Management	3	3-0
10-109-141	Hospitality Internship Seminar*	1	1-0
10-102-145	Introduction to Human Resources	3	3-0
10-316-101	Principles of Sanitation*	1	1-0
	Elective	3	E
	Semester Total	16	
Fourth 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
10-809-195	Economics	3	3-0
	Elective	3	E
	Semester Total	18	

*Courses offered only in semester shown.
** Other course options are available. See program advisor for information.

Madison Area Technical College
Hotel and Restaurant Management

Program Number: 10-109-2

Program Courses

10-101-116 Hotel/Restaurant Accounting 1 3 credits
A study in the design and use of specialized accounting and financial control systems in management decision-making for hotels and restaurants.

10-101-117 Hotel/Restaurant Accounting 2 3 credits
Procedures of accounting for hotels and restaurants. Additional topics include analysis of hospitality financial statements, property and equipment, inventory accounting, and hospitality payroll accounting. Prerequisite: 10-101-116 or equivalent.

10-109-101 Introduction to Tourism Services 2 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.

10-109-124 Fundamentals of Food Preparation 2 credits
Students learn fundamental knife skills, basic food preparation and how to properly store food. Kitchen organization, setup and cleaning; stations of the kitchen and simple menu planning techniques are also discussed. Prerequisite or concurrent enrollment in 10-316-101.

10-109-125 Tourism Management 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 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.

10-109-141 Hospitality Internship Seminar 1 credit
A discussion and analysis of the field experience. Topics include interviewing skills, cover letters, resumes, business ethics, professional appearance and dressing. Provides opportunities to discuss current issues with industry representatives.

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.

10-196-193 Human Resources Management 3 credits
Provides improved understanding of human resources/ personnel management function, techniques and concepts to improve quality of work life and employee satisfaction.

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
Designed to develop or increase students' knowledge of wine. Students are provided with the basics of wine tasting, the wine making process, how to serve wine, how to select wine for food and food for wine. Includes discussion of wine regions, different grapes and how to read wine labels. Students must be 21 to enroll.

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.

20-890-200 College Success 1-3 credits
This course provides learners with strategies to develop skills for success in college. Learners will work on academic skills such as test taking, note taking, reading etc. And, learners will work on other success strategies such as motivation, goal setting, interdependence, and self-awareness. Learners will apply self-management techniques, explore resource management strategies, practice study skills, and learn about ways to improve personal effectiveness. Recommend taking in first semester.

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. 07/14

Madison Area Technical College

Effective: 2014-2015

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.

This program is also offered in an Accelerated delivery format, with the Program Number 10-116-2-AC.

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 if admitted prior to 2011.) 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 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			Hrs/week
First Semester		Credits	Lec-Lab
10-102-134	Business Organization and Management	3	3-0
10-116-145	Introduction to Human Resources OR	3	3-0
10-196-193	*Human Resource Management*	*(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
10-809-199	Psychology of Human Relations	3	3-0
	Semester Total	16	

Second Semester			
10-101-111	Accounting 1-Principles	4	4-0
10-102-143	Management Techniques	3	3-0
10-116-149	Effective Staffing	3	3-0
10-116-168	Employment Law	3	3-0
10-801-195	Economics	3	3-0
	Semester Total	16	

SECOND YEAR			
First Semester			
10-102-135	Project Management - Fundamentals	3	3-0
10-103-143	PowerPoint-Beginning	1	0.3-1.5
10-116-147	Wage, Salary, and Benefits Administration	3	3-0
10-116-148	Labor Relations	3	3-0
10-801-198	Speech	3	3-0
10-809-197	Contemporary American Society	3	3-0
	Semester Total	16	

Second Semester			
10-102-132	Leadership for Business Excellence	3	3-0
10-102-150	Intro to International Business	3	3-0
10-104-102	Marketing Principles	3	3-0
10-116-152	Organizational Training and Development	3	3-0
10-116-153	Meeting Facilitation	1	1-0
20-809-276	Business Ethics OR	3	3-0
10-809-166	Intro to Ethics: Theory and Application	(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.

Madison Area Technical College

Human Resource Management

Program Number: 10-116-2

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.

10-102-132 Leadership for Business Excellence 3 credits
The purpose of the course is to identify leadership approaches for guiding a work group or an entire enterprise. Topics covered include: strategic process management, manufacturing systems, operations strategy, product design, process technology selection, capacity planning, resource planning and scheduling, inventory control, project management and quality/productivity improvement tools and strategies. 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 fundamental course in project management covers project management basics: defining projects, planning projects, scheduling projects, and leading projects. Emphasis is placed on applying these fundamentals as both a participant and project leaders in cases and group projects using MS Project.

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.

10-116-145 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.

10-102-150 Intro to International Business 3 credits
Provides a basic understanding of the forces that affect business in an international environment. The following forces will be explored: economic theories, financial, dynamics of organization, socio-economics, physical, socio-cultural, political, legal, labor, and import/export practices. Sixteen different countries will be reviewed for influences on their business economy.

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.

10-103-133 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.

10-104-102 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.

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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Rev. 03/14

Madison Area Technical College

Effective: 2014-2015

Human Resources Certificate

Program Number: 90-116-1

Certificate

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 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.

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	*Human Resource Management*	*(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

Madison Area Technical College
Human Resources Certificate

Program Number: 90-116-1

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.

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Rev. 4/14

Madison Area Technical College

Effective: 2014-2015

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 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 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			Hrs/week
First Semester		**Credits**	**Lec-Lab**
10-520-105	Introduction to Human ServicesΔ	3	3-0
10-520-106	Orientation to Human Services PopulationsΔ	3	3-0
10-520-117	InterviewingΔ†	3	3-0
10-520-135	Issues in Alcohol and Other Drug AbuseΔ†	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	Group Work SkillsΔ†	3	3-0
10-520-130	Social Change SkillsΔ	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	
SECOND YEAR			
First Semester			
10-520-139	Human Services Agency Experience 1Δ**	4	0-16
10-520-157	Human Services Counseling Skills†Δ	3	3-0
10-520-188	Human Services Experience Conference 1Δ**	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*Δ	(3)	(3-0)
	Elective	3	E
	Semester Total	16	
Second Semester			
10-520-120	Community Service AgenciesΔ**	3	3-0
10-520-140	Human Services Agency Experience 2Δ**	5	0-20
10-520-189	Human Services Experience Conference 2Δ**	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.
ΔPrerequisites 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.

Madison Area Technical College
Human Services Associate

Program Number: 10-520-3

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.

†AODA Certification Course

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: 04/14

Madison Area Technical College

Effective: 2014-2015

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 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.

I. General Education Core (select one from each content group).....21-30 credits

Associate Degree		College Transfer
Communications.....6 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/Science.....3 credits*		
6. *Associate degree or college transfer approved courses		
Additional General Studies Courses.....6-15 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. Electives .....0-6 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 Credits.....60-70 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.

Madison Area Technical College

Effective: 2014-2015

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 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.

Courses		Credits	Hrs/week
32-414-318	Electronic Circuits for Maintenance○	3	3-3
32-414-319	Programmable Logic Controllers○	3	3-3
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
	Total	15	

○ Fall course offering

♦ 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.

Madison Area Technical College

Industrial Automation
Post Baccalaureate Certificate

Program Number: 90-463-3

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. 07/13

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 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			Hrs/week
First Semester		Credits	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
32-462-316	Industrial Fluid Distribution Systems	2	2-2
10-804-107	College Math	3	4-0
	Semester Total	13	
Second Semester			
10-623-311	Mechanisms for Industry 2	1	TBD
32-462-306	Industrial Fluid Power 1Δ	1	1-1
32-462-335	Metal Processes for Maintenance	2	1-3
32-462-303	Industrial Equipment Mechanisms	1	1-1
32-462-340	Industrial Electricity and Controls	4	4-4
32-462-341	Industrial Fluid Power 2□	2	2-2
10-103-133	Excel-Beginning	1	0.25-1.5
10-104-189	Customer Relations	2	3-0
	Semester Total	14	

Δ 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 prerequisite/s.

Madison Area Technical College

Industrial 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 credit
10-623-311 Mechanisms for Industry 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 10-623-311, 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.

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Madison Area Technical College

Effective: 2014-2015

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.

32-401-315 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.

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			Hrs/week
First Semester		Credits	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
32-462-316	Industrial Fluid Distribution Systems	2	2-2
10-804-107	College Math	3	4-0
	Semester Total	13	
Second Semester			
10-623-311	Mechanisms for Industry 2	1	TBD
32-462-303	Industrial Equipment Mechanisms	1	1-1
32-462-306	Industrial Fluid Power 1Δ	1	1-1
32-462-335	Metal Processes for Maintenance	2	1-3
32-462-340	Industrial Electricity and Controls	4	4-4
32-462-341	Industrial Fluid Power 2□	2	2-2
10-103-133	Excel-Beginning	1	0.25-1.5
10-104-189	Customer Relations	2	3-0
	Semester Total	14	
SECOND YEAR			
First Semester			
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	
Second Semester			
32-401-309	Heating and Air Conditioning 2**	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
32-462-315	Building Management Systems**	3	4-2
32-462-322	Industrial Maintenance Mechanic 2#	3	1-5
	Semester Total	18	

Δ Meets for 6 weeks
□ Meets for 11 weeks
Internship Course

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

Real world smart.

Madison Area Technical College

Industrial Maintenance Technician

Courses (continued)

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: 32-414-320.

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, 32-462-301, 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 credit
10-623-311 Mechanisms for Industry 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 10-623-311, 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.

32-401-308 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 32-462-308 into practice including boiler competencies. Prerequisite: 32-462-308.

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. 07/14

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.

10-623-311 Mechanisms for Industry 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. 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: 32-462-303.

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			Hrs/week
First Semester		Credits	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 1Δ	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			
10-623-311	Mechanisms for Industry 2	1	TBD
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
32-401-315	Building Management Systems	3	4-2
10-103-133	Excel - Beginning	1	0.25-1.5
10-104-189	Customer Relations	2	3-0
	Semester Total	16	

Δ 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.

Madison Area Technical College

Industrial Mechanic–HVAC

Program Number: 31-462-3

Courses (continued)

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. 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.

32-420-330 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.

32-401-308 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 Heating and Air Conditioning, 32-462-308, into practice including boiler competencies. Prerequisite: 32-462-308.

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.

32-401-315 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.

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.

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Madison Area Technical College

Effective: 2014-2015

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 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.

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	Current Issues in Risk Management & Insurance	(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.)*

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.

Rev.07/13

Madison Area Technical College

Effective: 2014-2015

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
(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 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.

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.

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.

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Courses

		Credits	Hrs/week Lec-Lab
World Languages			
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
20-806-290	Renewable Energy International Development	3	3-0

Also, courses taken as semester-abroad.
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	Special Topics in International Literature	3	3-0
20-801-230	Classical Mythology	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

Internationalized Courses cont'd

805 Music

20-805-207	World 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

807 Physical Education

20-807-260	Martial Arts Fundamentals	1	2-0

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

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
10-104-183	International Business in Fashion	2	2-0
10-104-180	International Marketing	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
10-110-171	Law and Contemp. Problems: Immigration Law	3	3-0
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

Madison Area Technical College

Effective: 2014-15

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.

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			Hrs/week
Summer (prior to start of program)		Credits	Lec-Lab
10-304-100	Survey of the Interior Design Profession**	1	1-0

Note: course can also be taken concurrently with the Fall courses in the first semester.

First Semester			
10-304-102	Fundamentals of Design**	3	1-4
10-304-104	Basic Architectural Drawing**	3	2-3
10-304-105	Building and Furniture Construction**	3	2-3
10-304-107	Interior Design Textiles**	3	2-2
10-804-123	Math with Business Applications	3	3-0
	Semester Total	15	

Second Semester			
10-304-120	Advanced Architectural Drawing**	2	1-3
10-304-122	Perspective Lab**	1	0-2
10-304-124	Presentation Techniques**	2	1-3
10-304-125	Space Planning**	3	2-3
10-304-127	Materials and Finishes**	2	1-3
10-304-129	History of Interior Design**	3	3-0
10-801-195	Written Communication	3	3-0
20-809-276	Business Ethics*	3	3-0
	Semester Total	19	

SECOND YEAR			
First Semester			
10-304-133	Commercial Design**	5	3-6
10-304-135	Lighting**	2	2-0
10-304-142	Sales and Professional Practice**	3	2-2
10-304-146	Trends and Issues in Interior Design**	2	1-2
10-801-196	Oral/Interpersonal Communication	3	3-0
10-809-199	Psychology of Human Relations	3	3-0
	Semester Total	18	

Second Semester			
10-304-132	Kitchen and Bath Design**	5	3-6
10-304-143	Advanced Interior Design**	3	2-3
10-304-145	Interior Design Internship**	2	0-8
10-304-147	Portfolio Development**	1	0-2
10-801-198	Speech	3	3-0
10-809-197	Contemporary American Society	3	3-0
	Semester Total	17	

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

10-304-122 Perspective Lab 1 credit
The focus of this course is on the development of skill in sketching and drafting interiors in one and two point perspective and isometrics. Prerequisites: 10-304-102 and 10-304-104.

10-304-124 Presentation Techniques 2 credits
Students develop skill and speed in drawing, rendering, and board preparation for interior design presentations. Students gain awareness of the various media available and participate in the application of pencil and marker techniques.
Co-requisite: 10-304-122.

10-304-125 Space Planning 3 credits
Explores human factors, codes, regulations and standards, and barrier-free design as they relate to furniture arrangement and planning interior space. Projects take the student from the programming stage through the preliminary design of residential spaces. Students use various problem-solving conventions and methods to aid in the exploration of design solutions. Prerequisites: 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: 10-304-104 and 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: 10-304-124, 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, 10-304-124, 10-304-125, and 10-304-127, 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 10-304-105.

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 Advanced Interior Design 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.
Prerequisite: 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.

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.

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

Rev. 04/14

Madison Area Technical College

Effective: 2014-2015

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 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.

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 Webiste Development**	3	2-2
	Total	9	

*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.

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

Rev. 06/14

Madison Area Technical College

Effective: 2014-2015

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 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.

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	1	1-1
32-462-306	Industrial Fluid Power 1	1	1-1
32-462-340	Industrial Electricity and Controls	4	4-4
	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.

Madison Area Technical College

Introduction to Wind Energy Technology Certificate

Program Number: 90-462-4

Courses

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.

10-482-101 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.

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

Rev. 07/14

Madison Area Technical College

Effective: 2014-2015

Information Technology—
IT-Android Applications Development Certificate

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 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.

Courses		Credits	Hrs/week Lec-Lab
10-152-189	Android Applications Development*	3	2-2
10-152-195	Advanced Android 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

10-152-189 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.

Rev. 04/14

Madison Area Technical College

Information Technology — CISCO Certified Networking Associate (CCNA)

Effective: 2014-2015

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.

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.

Courses		Credits	Hrs/week Lec-Lab
10-150-121	Intro to Cisco Networking	3	2-2
10-150-122	Cisco Networking 2	3	3-4
10-150-123	Cisco Networking 3*	3	2-2
10-150-124	Cisco Networking 4*	3	2-2
	Total	12	

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 LANs and inter-VLAN routing in both IPv4 and IPv6. NOTE: must follow Intro to Cisco Networking, 10-150-121, within one year. Prerequisite: 10-150-121.

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 EIGPR, multi-area OSPF, Spanning Tree Protocol, and Link Aggregation. 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. NOTE: must follow Cisco Networking 2, 10-150-122, within one year.

Madison Area Technical College

Information Technology

Effective: 2014-2015

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-comptia-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 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.

Courses		Credits	Hrs/week Lec-Lab
10-154-189	Computer Hardware Essentials	3	2-2
10-154-191	A+ IT Technician	3	2-2
	Total	6	

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

Courses

10-154-189 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.

Rev. 04/13

Madison Area Technical College

Information Technology—

Computer Systems Administration Specialist

Effective: 2014-2015

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 Computer 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 YEAR			Hrs/week
First Semester		Credits	Lec-Lab
10-107-111	Exploration of Information Technology	1	0.5-1
10-150-121	Intro to Cisco Networking	3	2-2
10-150-160	IT Security Awareness	1	0.5-1
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	Contemporary American Society	3	3-0
	Total	17	
Second Semester			
10-152-104	Windows PowerShell	3	2-2
10-154-122	IT Service Concepts	3	2-2
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	Math of Finance	3	3-0
	Total	18	

SECOND YEAR			
First Semester			
10-107-175	Preparation for an IT Career	1	0.5-1
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
	Elective	3	E
	Total	16	
Second 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
	Elective	3	E
	Total	18	

*Offered fall semester only
**Offered spring semester only
****Note: CCNA 1&2: Network Routing Basics, 10-150-170 (5 credits), can be used in lieu of 10-150-101.*

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.

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
10-154-146	Help Desk Tools & Techniques	3 credits

MADISON AREA TECHNICAL COLLEGE

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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.

10-152-104 Windows PowerShell 3 credits
Windows PowerShell is used in the Microsoft world for administration and management of Windows Clients. This class will introduce IT students to PowerShell and how it is used for administering Microsoft Networks. Students will develop a sound understanding of administering Window's environments using PowerShell and developing scripts using basic programming logic.
Prerequisite: 10-154-184.

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.

10-154-171 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 Microsoft Exam 70-687. As an added bonus you will learn the operation of VMWare Workstation. Prerequisite: working knowledge of Microsoft Windows (computer literacy, proficiency with a mouse, file management).

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.

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: 10-150-121.

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.

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Rev. 04/14

Madison Area Technical College

Information Technology— Help Desk Support Specialist

Effective: 2014-2015

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 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			Hrs/week
First Semester		Credits	Lec-Lab
10-103-136	Word–Intermediate	1	0.36-1.5
10-107-111	Exploration of Information Technology	1	0.5-1
10-150-160	IT Security Awareness	1	0.5-1
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
	Total	15	

Second Semester			
10-103-139	Excel–Intermediate	1	0.25-1.5
10-107-175	Preparation for an IT Career	1	0.5-1
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
	Total	14	

*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.

Madison Area Technical College

IT-Help Desk Support Specialist

Program Number: 31-154-1

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 Microsoft Exam 70-687. As an added bonus you will learn the operation of VMWare Workstation. Prerequisite: working knowledge of Microsoft Windows (computer literacy, proficiency with a mouse, file management).

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. 04/14

Madison Area Technical College

Information Technology—
Information Security Certificate

Effective: 2014-2015

Program Number: 90-150-3

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 IT Information Security Certificate program provides comprehensive instruction for networking students and professionals who want to expand their skills in computer security. Students survey issues in IT security awareness, data confidentiality, network security, and legal and ethical issues associated with computer system security.

This certificate provides hands-on training in designing, planning and executing a vulnerability assessment on a computer network. Once the assessment is completed, students design a security plan to protect the network from threats. Students will be introduced to several firewall technologies including packet filtering, proxy firewalls, application gateways and circuit gateways. In addition, the students will be trained in properly securing a network using Virtual Private Networks (VPNs).

The IT Information Security Certificate prepares the student to test for two of the CISCO Certified Security Professional (CCSP) exams.

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			Hrs/week
First Semester		Credits	Lec-Lab
10-150-129	Emerging Trends in Security*	3	2-2
10-150-164	Penetration Testing/Network Defense**	3	2-2
10-150-185	Introduction to Computer Forensics*	3	2-2
10-150-196	Intrusion Detection Systems*	3	2-2
10-152-109	Python Programming	3	2-2
	Total	15	

*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

Students are expected to have a current CISCO Certified Networking Associate (CCNA) certificate or minimally have completed the equivalent course work at Madison College.

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.

Madison Area Technical College

IT—Information Security Certificate

Program Number: 90-150-3

Courses

10-150-129 Emerging Trends in Security 3 credits
Introduces topics surrounding current and evolving trends in Information Security. 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 database, web services, cloud integration, and mobile devices as well as other technologies as they evolve. Prerequisite: 10-150-122.

10-150-164 Penetration Testing/ Network Defense 3 credits
Introduces the network security specialist to the various methodologies for attacking a network. The student is introduced to the concepts, principles and techniques, supplemented by hands-on exercises for attacking and disabling a network. These methodologies are presented within the context of properly securing the network. The course emphasizes network attack methodologies with the emphasis on student use of network attack techniques and tools. Prerequisites: grade of C or better in 10-150-196 and 10-152-109.

10-150-185 Introduction to 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. Other topics include the importance of digital evidence controls, how to process crime and incident scenes, 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. Prerequisites: 10-152-109 and certificate acceptance.

10-150-196 Intrusion Detection Systems 3 credits
This course introduces the basics of Intrusion Detection and network defense strategies. The student will be introduced to the tools and techniques used to identify network threats and recommended ways to mitigate those threats. 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. Prerequisite: 10-152-109 and certificate acceptance.

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. Prerequisite: working knowledge of Microsoft Windows (computer Literacy, proficiency with a mouse, file management).

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. 04/14

Madison Area Technical College

Effective: 2014-2015

Information Technology— iOS Applications Development Certificate

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 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.

Courses		Credits	Hrs/week 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.

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

Real world smart.

Madison Area Technical College

Effective: 2014-2015

Information Technology—
Java Professional Developer Certificate

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 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.

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.

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—
LAMP Open Source Development Certificate

Effective: 2014-2015

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

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
10-152-157	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

Effective: 2014-2015

Information Technology—
Microsoft® Technologies Certificate

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.

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 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.

Courses		Credits	Hrs/week 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 courses:

10-152-104	Windows PowerShell	3	2-2
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.

Madison Area Technical College
IT—Microsoft® Technologies Certificate

Program Number: 90-154-7

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 Microsoft Exam 70-687. As an added bonus you will learn the operation of VMWare Workstation. Prerequisite: Working knowledge of Microsoft Windows (computer literacy, proficiency with a mouse, file management).

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

10-152-104 Windows PowerShell 3 credits
Windows PowerShell is used in the Microsoft world for administration and management of Windows Clients. This class will introduce IT students to PowerShell and how it is used for administering Microsoft Networks. Students will develop a sound understanding of administering Window's environments using PowerShell and developing scripts using basic programming logic. Prerequisite: 10-154-184

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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Madison Area Technical College

Effective: 2014-2015

Information Technology— Microsoft® Visual Studio.NET Certificate

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-studionet-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 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.

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.

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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Rev. 04/13

Madison Area Technical College

Information Technology- Mobile Applications Developer

Effective: 2014-2015

Program Number: 10-152-8

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

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 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			Hrs/week
First Semester		Credits	Lec-Lab
10-107-111	Exploration of Information Technology	1	0.5-1
10-150-160	IT Security Awareness	1	0.5-1
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
10-801-196	Oral/Interpersonal Communication	3	3-0
10-809-197	Contemporary American Society	3	3-0
10-809-199	Psychology of Human Relations	3	3-0
	Semester Total	18	
SECOND YEAR			
First Semester			
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	0.5-1
10-152-121	Advanced Website Development-XML	3	2-2
10-152-131	Object-Oriented Systems Analysis*	3	2-2
10-801-197	Technical Reporting	3	2-2
	Semester Total	16	
Second Semester			
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
10-152-126	Database Design and Data Warehousing**	3 credits
10-152-157	Ruby on Rails Development**	3 credits
10-154-190	Linux Server	3 credits

MADISON AREA TECHNICAL COLLEGE

Madison Area Technical College

IT- Mobile Applications Developer

Program Number: 10-152-8

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

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.

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Rev. 04/14

Madison Area Technical College

Information Technology—
Network Security Specialist

Effective: 2014-2015

Program Number: 10-150-3

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.

10-150-160 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.

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			Hrs/week
First Semester		Credits	Lec-Lab
10-107-111	Exploration of Information Technology	1	0.5-1
10-150-160	IT Security Awareness	1	0.5-1
10-150-121	Intro to Cisco Networking	3	2-2
10-152-109	Python Programming	3	2-2
10-154-184	Windows Client	3	2-2
10-801-195	Written Communication	3	3-0
10-804-144	Math of Finance	3	3-0
	Total	17	
Second Semester			
10-150-122	Cisco Networking 2	3	2-2
10-152-104	Windows PowerShell	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
	Total	18	
SECOND YEAR			
First Semester			
10-107-175	Preparation for an IT Career	1	0.5-1
10-150-129	Emerging Trends in Security*	3	2-2
10-150-185	Introduction to Computer Forensics*	3	2-2
10-150-196	Intrusion Detection Systems*	3	2-2
10-801-197	Technical Reporting	3	3-0
10-809-166	Introduction to Ethics: Theory and Applications	3	3-0
	Total	16	
Second Semester			
10-150-164	Penetration Testing/Network Defense**	3	2-2
10-150-193	Network Security Design**	3	2-2
10-150-194	Firewall/VPN Technologies**	3	2-2
10-150-197	Network Security Internship**	3	2-2
10-809-197	Contemporary American Society	3	3-0
	Elective	3	E
	Total	18	

Recommended Electives

Electives must be associate degree (10-level) or college transfer (20-level) courses

10-150-123	Cisco Networking 3*	3 credits
10-150-150	VOIP Convergence Fundamentals*	3 credits
10-152-120	Website Development HTML5	3 credits
10-154-172	Windows Server 2*	3 credits

*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.

MADISON AREA TECHNICAL COLLEGE

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Madison Area Technical College

IT—Network Security Specialist

Program Number: 10-150-3

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. 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. Prerequisite: 10-150-121. NOTE: must follow Intro to Cisco Networking, 10-150-121, within one year.

10-150-129 Emerging Trends in Security 3 credits
Introduces topics surrounding current and evolving trends in Information Security. 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 database, web services, cloud integration, and mobile devices as well as other technologies as they evolve. Prerequisite: 10-150-122.

10-150-164 Penetration Testing/ Network Defense 3 credits
Introduces the network security specialist to the various methodologies for attacking a network. The student is introduced to the concepts, principles and techniques, supplemented by hands-on exercises for attacking and disabling a network. These methodologies are presented within the context of properly securing the network. The course emphasizes network attack methodologies with the emphasis on student use of network attack techniques and tools. Prerequisites: 10-150-196 and 10-152-109.

10-150-185 Introduction to 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. Other topics include the importance of digital evidence controls, how to process crime and incident scenes, 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.
Prerequisites: 10-150-122, 10-152-109, and 10-154-171.

10-150-193 Network 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: 10-150-196 and 10-152-109, and completion or concurrent enrollment in 10-150-164.

10-150-194 Firewall/VPN Technologies 3 credits
Introduces the network security specialist to the various methodologies for defending a network. Students are introduced to the concepts, principles, types and topologies of firewalls to include packet filtering, proxy firewalls, application gateways, circuit gateways and stateful inspection. Students also learn the skills necessary for one of the CISCO Certified Security Professional (CCSP) certification exams.
Prerequisite: 10-150-122.

10-150-196 Intrusion Detection Systems 3 credits
This course introduces the basics of Intrusion Detection and network defense strategies. The student will be introduced to the tools and techniques used to identify network threats and recommended ways to mitigate those threats. 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. Prerequisites: 10-150-122, 10-152-109, 10-154-171, 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.

10-152-104 Windows PowerShell 3 credits
Windows PowerShell is used in the Microsoft world for administration and management of Windows Clients. This class will introduce IT students to PowerShell and how it is used for administering Microsoft Networks. Students will develop a sound understanding of administering Window's environments using PowerShell and developing scripts using basic programming logic. Prerequisite: 10-154-184.

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 Microsoft Exam 70-687. As an added bonus you will learn the operation of VMWare Workstation. 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: 10-150-121.

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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Rev. 04/14

Madison Area Technical College

Information Technology—
Network Specialist

Effective: 2014-2015

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 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			Hrs/week
First Semester		Credits	Lec-Lab
10-107-111	Exploration of Information Technology	1	0.5-1
10-150-160	IT Security Awareness	1	0.5-1
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	
SECOND YEAR			
First Semester			
10-107-175	Preparation for an IT Career	1	0.5-1
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	
Second 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

10-152-104	Windows PowerShell	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.

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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, 10150121, 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 EIGPR, multi-area OSPF, Spanning Tree Protocol, and Link Aggregation. Prerequisite: 10-150-122. NOTE: must follow Cisco Networking 2, 10150122 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.

10-150-195 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 Microsoft Exam 70-687. As an added bonus you will learn the operation of VMWare Workstation. Prerequisite: working knowledge of Microsoft Windows (computer literacy, proficiency with a mouse, file management).

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: 10-150-121.

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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Rev. 04/14

Madison Area Technical College

Effective: 2014-2015

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 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.

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. 04/13

MADISON AREA TECHNICAL COLLEGE

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Madison Area Technical College

Information Technology— VMware Certified Professional Certificate

Effective: 2014-2015

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/mgrReg/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 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.

Courses		Credits	Hrs/week Lec-Lab
10-154-175	VMware Certified Professional (VCP)**	3	2-2
	Total	3	

*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.

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

Rev. 04/13

MADISON AREA | TECHNICAL COLLEGE

Real world smart.

Madison Area Technical College

Information Technology—
Web Software Developer

Effective: 2014-2015

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

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FIRST YEAR

First Semester		Credits	Hrs/week Lec-Lab
10-107-111	Exploration of Information Technology	1	0.5-1
10-150-160	IT Security Awareness	1	0.5-1
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
10-801-196	Oral/Interpersonal Communication	3	3-0
10-809-197	Contemporary American Society	3	3-0
10-809-199	Psychology of Human Relations	3	3-0
	Semester Total	18	

SECOND YEAR

First Semester			
Course #2	Emphasis Area Course #2 (*see below*)	3	2-2
10-107-175	Preparation for an IT Career	1	0.5-1
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	

Second Semester			
Course #3	Emphasis Area Course #3 (*see below*)	3	2-2
10-152-126	Database Design and Data Warehousing**	3	2-2
10-152-132	Web Analyst/Programmer 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
	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
10-152-166	PHP Web Development with MySQL**	#1
10-152-167	Advanced PHP & MySQL Web Development*	#2
10-152-157	Ruby on Rails Development**	#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

MADISON AREA TECHNICAL COLLEGE

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.

10-152-126 Database Design and Data Warehousing 3 credits
Study of the construction of relational databases. Activities include: designing a database using the relational database model, implementing a database in normal form and demonstrating a functional database in terms of performance, integrity and security.
Prerequisites: 10-152-125 and 10-152-131.

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 Analyst/Programmer 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

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. 04/14

Madison Area Technical College

Effective: 2013-2014

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, or copy editor.

Students need only to complete the curriculum requirements (four required courses and one elective course) 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. Other 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.

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2013-2014 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	Newswriting	4	4-0
20-801-246	Feature Writing.	4	4-0
20-801-253	Documentary Storytelling	3	3-0
20-801-262	Social Media Writing	3	3-0
20-801-271	Journalism Practicum 1	1	0-4
	Total	15	

Electives

Students must also complete at least/a minimum 3 credits from the following electives:

10-203-173	Photojournalism	2	0-4
20-801-251	Intro to Mass Communication	4	4-0
20-801-252	World Issues Journalism	4	4-0
20-801-272	Journalism Practicum 2	1	0-4
20-801-273	Journalism Practicum 3	1	0-4
20-801-274	Journalism Practicum 4	1	0-4
	Total	3 (minimum)	
	Certificate Total	18 (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:
a) Submit a portfolio of written work that includes at least three quality news articles or feature stories published by a media organization, a business, or a nonprofit organization.
b) Submit a quality cover letter/resume.

Admission Requirements

To review program admission requirements and application processing dates visit the programs 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 2.5 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.

Madison Area Technical College

Journalism

Program Number: 90-801-2

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.

20-801-245 Newswriting 4 credits
This course teaches students the basic skills and knowledge needed as an entry-level reporter working at a small media organization. In Newswriting and Reporting, the student will learn general news reporting; speech, news conference, and public meeting coverage; and police, fire and accident reporting. In addition, students will learn interviewing skills needed to write a compelling news feature. Students will be presented with a basic understanding of libel law. Students will also study online journalism and how media convergence impacts spot news coverage today. Prerequisite: English 1, 20-801-201, or Written Communication, 10-801-195, or the instructor's consent.

20-801-246 Feature Writing 4 credits
Writing a longer magazine feature is the main focus of this course. As a follow-up to Newswriting and Reporting, students will examine in more detail various interviewing strategies needed as a feature writer. Then students will apply these interviewing skills when researching well-developed, compelling features. Students will learn how to incorporate the narrative structure, or storytelling approach, into their feature stories. Students will examine privacy laws as they apply to feature stories. Students will also study online journalism and the impact of media convergence as on long-form journalism. Prerequisite: English 1, 20-801-201, or Written Communication, 10-801-195, or the instructor's consent.

20-801-251 Intro to Mass Communication 4 credits
This course examines the history, evolution, and cultural power of today's media, both nationally and internationally. The course analyzes newspaper journalism, magazine journalism, radio news, Internet journalism, television news, public relations, advertising, and journalism ethics and law. Prerequisite: English 1, 20-801-201, or Written Communication, 10-801-195, or the instructor's consent.

20-801-252 World Issues Journalism 4 credits
Students of the course will engage in news reporting assignments that relate to world issues, such as water, energy, and war. Students will create audio news reports using podcast software and voice recording technology. Students will also record video logs and write news summaries about world issues. In addition to the reporting assignments, students will study free press issues worldwide and the journalism practices and traditions that emerge from different parts of the world. Prerequisites: English 1, 20-801-201 or Written Communications, 10-801-195, 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 the 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 credit
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 (one credit), students will spend a minimum of 48 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.

20-801-272 Journalism Practicum 2 1 credit
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, 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 2 (one credit), students will spend a minimum of 48 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. Prerequisite: 20-801-271

20-801-273 Journalism Practicum 3 1 credit
Journalism Practicum 3 is a follow-up to Journalism Practicum 2. 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 3 (one credit), students will spend a minimum of 48 hours engaged in news reporting, copy editing 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. Prerequisite: 20-801-272

20-801-274 Journalism Practicum 4 1 credit
Journalism Practicum 4 is a follow-up to Journalism Practicum 3. 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 4 (one credit), students will spend a minimum of 48 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. Prerequisite: 20-801-273

Career Potential:

- News Reporter
- Feature Writer
- Public Relations Writer
- Copy Editor

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Rev. 07/13

Madison Area Technical College

Effective: 2013-2014

Journalism

Program Number: 90-801-2

Certificate

School of Arts and Sciences

Program offered at Madison Campus

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OR (800) 322-6282 ext. 6246 or ext. 2389

About the Certificate

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20-801-253	Documentary Storytelling	3	3-0
20-801-262	Social Media Writing	3	3-0
20-801-271	Journalism Practicum 1	1	0-4
	Total	15	

Electives

Students must also complete at least/a minimum 3 credits from the following electives:

10-203-173	Photojournalism	2	0-4
20-801-251	Intro to Mass Communication	4	4-0
20-801-252	World Issues Journalism	4	4-0
20-801-272	Journalism Practicum 2	1	0-4
20-801-273	Journalism Practicum 3	1	0-4
20-801-274	Journalism Practicum 4	1	0-4
	Total	3 (minimum)	
	Certificate Total	18 (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:
a) Submit a portfolio of written work that includes at least three quality news articles or feature stories published by a media organization, a business, or a nonprofit organization.
b) Submit a quality cover letter/resume.

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Madison Area Technical College

Journalism

Program Number: 90-801-2

Courses

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This course teaches students the basic skills and knowledge needed as an entry-level reporter working at a small media organization. In Newswriting and Reporting, the student will learn general news reporting; speech, news conference, and public meeting coverage; and police, fire and accident reporting. In addition, students will learn interviewing skills needed to write a compelling news feature. Students will be presented with a basic understanding of libel law. Students will also study online journalism and how media convergence impacts spot news coverage today. Prerequisite: English 1, 20-801-201, or Written Communication, 10-801-195, or the instructor's consent.

20-801-246 Feature Writing 4 credits
Writing a longer magazine feature is the main focus of this course. As a follow-up to Newswriting and Reporting, students will examine in more detail various interviewing strategies needed as a feature writer. Then students will apply these interviewing skills when researching well-developed, compelling features. Students will learn how to incorporate the narrative structure, or storytelling approach, into their feature stories. Students will examine privacy laws as they apply to feature stories. Students will also study online journalism and the impact of media convergence as on long-form journalism. Prerequisite: English 1, 20-801-201, or Written Communication, 10-801-195, or the instructor's consent.

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20-801-252 World Issues Journalism 4 credits
Students of the course will engage in news reporting assignments that relate to world issues, such as water, energy, and war. Students will create audio news reports using podcast software and voice recording technology. Students will also record video logs and write news summaries about world issues. In addition to the reporting assignments, students will study free press issues worldwide and the journalism practices and traditions that emerge from different parts of the world. Prerequisites: English 1, 20-801-201 or Written Communications, 10-801-195, 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 the 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 credit
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 (one credit), students will spend a minimum of 48 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.

20-801-272 Journalism Practicum 2 1 credit
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, 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 2 (one credit), students will spend a minimum of 48 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. Prerequisite: 20-801-271

20-801-273 Journalism Practicum 3 1 credit
Journalism Practicum 3 is a follow-up to Journalism Practicum 2. 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 3 (one credit), students will spend a minimum of 48 hours engaged in news reporting, copy editing 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. Prerequisite: 20-801-272

20-801-274 Journalism Practicum 4 1 credit
Journalism Practicum 4 is a follow-up to Journalism Practicum 3. 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 4 (one credit), students will spend a minimum of 48 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. Prerequisite: 20-801-273

Career Potential:

- News Reporter
- Feature Writer
- Public Relations Writer
- Copy Editor

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. 07/13

Madison Area Technical College

Effective: 2014-2015

Criminal Justice—Law Enforcement Academy

Program Number: 30-504-1

Less-Than-One-Year Diploma

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 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 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.

Course		Credits
30-504-301	Policing in America	1
30-504-302	The Legal Context	2
30-504-303	Tactical Skills	3
30-504-304	Relational Skills	3
30-504-305	Patrol Procedures	4
30-504-306	Investigations	2
30-531-317	Emergency Response for Protective Services	1
	Total	16

Note: A copy of the essential functions necessary to successfully complete the program of study is available upon request from the department office.

Madison Area Technical College

Criminal Justice—Law Enforcement Academy

Program Number: 30-504-1

Program Courses

30-504-301 Policing in America 1 credit
Learn the rules and procedures of the academy and how the various elements of the criminal justice system relate as well as the importance of professionalism. Explore the role law enforcement officers play in a democracy and apply this knowledge in classroom exercises, including role-plays and other scenario-based training. Belief systems, social pressures, moral problems, decision making and the consequences of decisions are discussed. Identify the resources available in communities to assist law enforcement officers. Discuss issues involved in policing in a diverse society and identify strategies for working effectively with a diverse community. Course covers Wisconsin requirements for written law enforcement agency policies and procedures.

30-504-302 The Legal Context 2 credits
Covers the structure of the criminal justice system, including criminal procedure. Learn the legal bases for law enforcement action such as arrest, use of force and search and seizure, as well as the limits on law enforcement activity. Learn the classifications of crimes and other violations including felonies, misdemeanors, and ordinance violations, and the elements of crimes listed in the criminal code. Laws and procedures that affect juveniles, including those related to taking a juvenile into custody, are discussed.

30-504-303 Tactical Skills 3 credits
Learn the basis for and limits to use of force by Wisconsin officers including specific techniques for intervention covered in the Wisconsin system of Defense and Arrest Tactics. Learn the necessary weapons handling skills and how to care for and maintain duty handguns. Learn to shoot quickly and accurately under a variety of conditions including under low light, while moving and from behind cover. Learn the basics of room clearing, tactical movement, use of cover and concealment, and application to emergency situations.

30-504-304 Relational Skills 3 credits
Learn how to write a wide variety of law enforcement reports to accurately and fairly convey necessary information for use by investigators, prosecutors and the public. Explore the role of communication in law enforcement and develop and apply specific professional communication skills and strategies in a variety of simulated situations. The course covers principles, guidelines and techniques for proper law enforcement response to persons with possible mental disorders, alcohol or drug problems and/or developmental disabilities and the legal bases, requirements and practical guidelines for conducting emergency detentions and protective placements of persons. The basics of presenting effective court testimony also are discussed. Explore evolving police strategies, activities and attitudes that build effective law enforcement and community relationships, as well as problem-oriented policing strategies.

30-504-305 Patrol Procedures 4 credits
Become familiar with Wisconsin's traffic laws and ordinances, including those related to operator licensing and vehicle registration and equipment. Learn to enforce these laws, complete Wisconsin Uniform Traffic Citations and to direct and control traffic effectively. Material covered includes steps taken as first-in officer to stabilize and manage a complex scene, investigate traffic accidents, take appropriate enforcement actions and prepare accident reports. Learn emergency vehicle operation including basic patrol operation, emergency vehicle response and pursuit driving. Understand the legal bases for making vehicle contacts, how to conduct a threat assessment and how to conduct different types of vehicle contact, including how to administer and interpret the Operating a Motor Vehicle While Intoxicated/Standardized Field Sobriety Test (OMVWI/SFST).

30-504-306 Investigations 2 credits
Provides techniques and procedures necessary to interview or interrogate adult and juvenile witnesses, suspects and victims. Learn how to recognize, process and preserve physical evidence and how to respond to crime victims. Explore the dynamics of victimization and victim's rights. Learn the statutory elements of each of the sensitive crimes and the dynamics, impacts and investigative strategies unique to these crimes.

30-531-317 Emergency Response for Protective Services 1 credit
Learn how to perform an initial medical assessment for injury or medical condition, how to provide immediate treatment for a variety of injuries and conditions, and how to perform CPR and use an automated emergency defibrillator.

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.

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Rev: 04/14

Madison Area Technical College

Effective: 2014-2015

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 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			Hrs/week
First Semester		Credits	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	

SECOND YEAR			
First 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	

Second 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.

Madison Area Technical College

Machine Tooling Technics

Program Number: 32-420-5

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.

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Rev. 04/14

Madison Area Technical College

Effective: 2014-2015

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 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.

Courses		Credits	Hrs/week Lec-Lab
10-623-200	Interpreting Engineering Drawings	2	0-4
32-420-346	Intro to CNC – G-code Programming○	2	3-1
32-420-351	Elements of Basic Metrology○	2	2-2
32-420-322	Machine Tool 1*○	4	4-12
32-420-323	Machine Tool 2*○	4	4-12
31-801-356	Communications 1○	1	2-0
31-804-381	Machine Tool Mathematics 1○	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
○ 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.

Madison Area Technical College

Machine Tool Operations Certificate

Program Number: 90-420-2

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 comparitor, 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. 04/14

Madison Area Technical College

Effective: 2014-2015

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 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.

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.

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Rev. 04/14

Madison Area Technical College

Effective: 2014-15

Marketing

Program Number: 10-104-3

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 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

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***	3	3-0
10-804-123	Math with Business Applications***	3	3-0
	Semester Total	15	

Second Semester			
10-104-103	Marketing Research**	3	3-0
10-104-112	Marketing Design Strategies**	3	3-0
10-104-113	Leadership Strategies in Marketing	3	3-0
10-104-125	Principles of Advertising**	3	3-0
10-801-198	Speech***	3	3-0
10-809-197	Contemporary American Society***	3	3-0
	Semester Total	18	

SECOND YEAR

First Semester			
10-104-107	Marketing Management**	3	3-0
10-104-162	Mobile Marketing (Social Media)	3	3-0
10-104-180	International Marketing**	3	3-0
10-809-199	Psychology of Human Relations***	3	3-0
10-809-195	Economics***	3	3-0
	Approved Marketing Elective	3	3-0
	Semester Total	18	

Second Semester			
10-104-111	Innovative Trends in Marketing	3	3-0
10-104-114	Social Media Principles**	3	3-0
10-104-188	Marketing Portfolio	1	0-2
10-809-166	Introduction to Ethics: Theory & Application***	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
10-104-115	Advanced Social Media Campaigns	3 credits
10-104-126	Publicity and Promotions Strategy ♦	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○	3 credits

○ 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)
***Course may be substituted by another Arts & Sciences Center approved class listed on your Advising Report, the Marketing program website under Program Curriculum, or contact Marketing co-Lead Teachers.

♦ Fall Semester Δ Spring Semester □ Summer Term

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

Program Courses continued

10-104-108 B2B 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 educate and enhance current and new selling skills. Prerequisite: 10-104-104 or Instructor consent.

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. Course should be taken in the fourth or final semester of study in the program.
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. Prerequisite: 10-104-102.

10-104-113 Leadership Strategies in Marketing 3 credits
This course introduces participants to principles, methods and techniques of leadership and communications with applications to case studies. Special attention is given to problem solving, small group decision making, and teamwork.

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 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.

10-104-126 Publicity & Promotions Strategy 3 credits
This course further explores the elements of the promotions mix-public relations, sales promotion, media buying and sponsorship/sports marketing. Flexibility is built into the course to allow for additional time to cover specific types of promotion such as trade shows and/or other popular techniques of promotion. This course provides students with a complete understanding of the promotions mix and how it is an integral part of today's marketing. Prerequisite: 10-104-102

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.

1010-104-160 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.

10-104-162 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.

10-104-165 Marketing Internship 3 credits
This course will fulfill either your required Marketing Elective or General Elective. Students must be employed a minimum of 150 hours during the semester, summer or any combination of time. They are also in contact (email and in person) on a regular basis with the coordinator during the semester or summer. The internship can be paid or unpaid. To qualify, all students must have Instructor consent.

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.

10-104-180 International Marketing 3 credits
Students explore how marketing strategies and tactics must be managed and adapted for success in different cultural, economic, geographic and political environments around the world. Students will develop marketing and management skills and perspectives in order to work effectively in the global marketplace.
Prerequisite: 10-104-102.

10-104-187 Global Studies Seminar 3 credits
This unique learning and travel experience gives students the opportunity to enhance their understanding of the global marketplace. Upon completion of the course and travel students will be familiar with the history, culture, social and business issues of the host country. Students will examine current trends and business practices relating to (but not limited to) management, marketing, hospitality and global strategies. Participation in this course requires travel to the host country. This experience is designed to help students develop a lifelong global mindset and to enhance abilities to communicate, work on international teams and think creatively.

10-104-188 Marketing Portfolio 1 credit
E-portfolios are essential for today's job hunting marketplace. This course will help you to organize the marketing projects you have worked on throughout the program into an e-portfolio format. Additionally you will add other collateral materials to your portfolio including a resume that includes e-screening words for marketing, professional reference page and cover letter, and e-tabs within your portfolio. Your project collection on a thumb drive or your student drive will assist you with your portfolio preparation. Prerequisite: instructor consent.

Other Required Courses

10-103-133 Excel-Beginning 1 credit
See college website for description.
10-103-137 Word-Beginning 1 credit
See college website for description.
10-103-143 PowerPoint-Beginning 1 credit
See college website for description.

Career Potential:

- Account Executive
- Advertising Coordinator
- Buyer
- Customer Service Manager/Representative
- Internet Marketing Assistant
- Market Research Assistant
- Marketing Assistant
- Promotion Coordinator
- Sales/Marketing Manager
- Sales Representative (inside and outside)
- Store Manager

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

- Brand or Product Manager
- International Sales Manager
- Internet Marketing Manager/Director
- Market Research Analyst
- Marketing and Promotion Manager/Director
- New Product Development Manager
- Public Relations Director
- Senior Manager/Executive
- Social Media 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. 04/14

Madison Area Technical College

Effective: 2014-2015

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 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			Hrs/week
First Semester		Credits	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			
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			
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			
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.

Madison Area Technical College

Mechanical Design Technology

Program Number: 10-606-1

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. 07/13

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 Campus
(Also offered 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.

Earn your Medical Administrative Specialist degree completely online! The benefits of completing a degree online include courses available 24 hours a day, 7 days a week; an opportunity to choose your own study time with course guidelines; an ability to join in online discussions with professionals; and stay current with new business technology and trends in the medical administrative setting. For more information about the online Medical Administrative Specialist degree program, contact the School of Online and Accelerated Learning at (608) 245-5850.

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			Hrs/week
First Semester		Credits	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			
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	
SECOND YEAR			
First Semester			
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	
Second Semester			
10-101-108	Applied Accounting 1	3	3-0
10-106-134	Software Simulation	2	0.5-3
10-106-177	Specialized Insurance Claims**	2	1-2
10-106-186	Project Management & Coordination	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.

Madison Area Technical College
Medical Administrative Specialist

Program Number: 10-106-4

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 suing 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 Project Management and Coordination 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.

10-501-153 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.

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.

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.

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Rev. 05/14

Madison Area Technical College

Effective: 2014-2015

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, 35 East Wacker Drive, Suite 1970, Chicago, IL 60601-2208, (312) 553-9355.

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).

Aptitudes and interests that are helpful are a genuine interest in medicine and in helping people.

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 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			Hrs/week
First Semester		Credits	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			
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.

Madison Area Technical College

Medical Assistant

Program Number: 31-509-1

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. 08/13

Madison Area Technical College

Effective: 2014-2015

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 and the Medical Transcription Technical Diploma 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 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/Fall Courses		Credits	Hrs/week Lec-Lab
10-106-101	Keyboarding Introduction (Q1)	1	0.25-1.5
10-103-123	Windows 7	1	0.25-1.5
10-103-137	Word–Beginning (Q2)	1	0.25-1.5
10-106-178	Medical Language for the Business Professional 1*	2	2-0
10-106-165	Medical Administrative Procedures	3	1-4
	Total	8	

Second Semester/Spring Courses		Credits	Lec-Lab
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)	1	0.25-1.5
10-103-139	Excel–Intermediate (Q4)	1	0.25-1.5
10-106-177	Specialized Insurance Claims**	2	1-2
10-106-164	Customer Contact Skills	1	0.25-1.5
	Total	8	

*Course offered in fall semester only

**Course offered in spring semester only

Courses are listed in suggested sequence.

Madison Area Technical College

Medical Billing Specialist Certificate

Program Number: 90-106-6

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. 04/14

Madison Area Technical College

Effective: 2014-2015

Medical Coding Specialist

Program Number: 31-530-2

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) 246-6015, 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 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.

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

Madison Area Technical College

Medical Coding Specialist

Program Number: 31-530-2

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 procedures 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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Rev. 06/13

Madison Area Technical College

Effective: 2014-2015

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 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

	First Semester	Credits	Hrs/week Lec-Lab-Clin
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	

	Summer Session		
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	

SECOND YEAR

	First 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	

	Second 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.

Madison Area Technical College
Medical Laboratory Technician

Program Number: 10-513-1

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 Clinical Lab 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 Clinical Lab Tech 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 anerobes. 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 CLT program and resume for CLT 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:

- Clinical 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:

- Clinical Laboratory Scientist (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.

Rev. 07/13

Madison Area Technical College

Effective: 2014-2015

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 profession. Develop negotiation, decision-making, problem-solving and communication skills. Learn about site selection, contract law, logistics coordination, tradeshow management, financial management and related areas of convention, meeting and event 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, non-profit organizations, 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 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			Hrs/week
First Semester		Credits	Lec-Lab
10-103-133	Excel-Beginning	1	0.25.1.5
10-101-106	Accounting Concepts	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	
SECOND YEAR			
First 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	
Second 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.

Madison Area Technical College
Meeting and Event Management

Program Number: 10-109-6

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 principle s 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.

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Rev. 08/13

Madison Area Technical College

Effective: 2014-2015

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 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.

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
	Total	11	

*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.

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Rev. 06/13

MADISON AREA TECHNICAL COLLEGE

Real world smart.

Madison Area Technical College

Effective: 2014-2015

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 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.

Three Required Courses		Credits	Hrs/week Lec-Lab
10-104-162	Social Media-Mobile Marketing	3	3-0
10-104-176	mCommerce (Mobile Marketing)	3	3-0
10-104-177	Introduction to Mobile Applications	3	3-0
10-201-193	Mobile Web Design	3	2.5-1
	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.

10-104-176 mCommerce (Mobile Marketing) 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 Social Media/Web Design Strategies 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.

10-201-193 Mobile Web Design 3 credits

The future of the web is mobile; learn the latest strategies in web design theory and technology to create a powerful experience on any device. This course is designed for students who wish to expand their knowledge of websites to the most modern of Internet users - people who use their mobile phones and tablets to access the Internet. In this course you will gain practical knowledge of the different types of mobile web design, mobile web usability, accessibility and mobile web optimization.

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.

Rev. 04/14

Madison Area Technical College

Effective: 2014-2015

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 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
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.

Madison Area Technical College

Motorcycle, Marine and Outdoor Power Products Technician

Program Number: 31-461-2

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).

**Completion with a grade of C or better

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.

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Rev. 07/13

Madison Area Technical College

Effective: 2014-2015

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 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
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 Concepts 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 has 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. 08/13

Madison Area Technical College

Effective: 2014-2015

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 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, 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.

Continuing Education
10-501-120 Diagnostic Aide……2……4-4

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.

Rev. 4/13

Madison Area Technical College

Effective: 2014-2015

Nursing Completion LPN to ADN

Program Number: 10-543-1

Associate in Applied Science Degree

Nursing Program Cluster

School of Health Education

Program offered at Madison, Reedsburg and Fort Campuses

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 (61 Broadway, NY, NY 10006, (212) 363-5555, ext. 153 or (800) 669-1656, ext. 153) and approved by the Wisconsin Department of Regulation 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-lpn-adn.

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.

Pre-Nursing Courses:

The following courses must be completed prior to or be currently in progress with last course for application for the Nursing Completion LPN to A DN courses:

		Credits	Lec-Lab
30-543-300	Nursing Assistant	3	2.1
	Elective	5	2-0
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 Communication OR	(3)	(3-0)
20-810-201	Fundamentals of Speech (Note: English 2 will no longer suffice.)		
20-809-203	Intro to Sociology OR	3	3-0
10-809-197	Contemporary American Society	(3)	(3-0)
20-806-207	Anatomy and Physiology 1	4	3-2
20-806-208	Anatomy and Physiology 2	4	3-2
20-806-273	Microbiology	5	3-4
20-809-231	Intro to Psychology	3	3-0
20-809-233	Developmental Psychology	3	3-0
	Total	36	

Practical Nursing and Licensure requirements:

Semester 1

31-543-301	Nursing Fundamentals	2	4-0
31-543-302	Nursing Skills	3	0-6
31-543-303	Nursing Pharmacology	2	4-0
31-543-304	Nursing: Intro to Clinical Practice	2	0-6

Semester 2

31-543-305	Nursing Health Alterations	3	6-0
31-543-306	Nursing Health Promotion	3	6-0
31-543-307	Nursing: Clinical Care Across the Lifespan	2	0-6
31-543-308	Nursing: Intro to Clinical Care Management	2	0-6
	Total	19	& LPN Licensure

Associate Degree Nursing 2nd year requirements:

Third Semester

10-543-164	Orientation to Associate Degree Nursing	3	3-0
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	10	

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.

Madison Area Technical College

Nursing Completion LPN to A DN

Program Number: 10-543-1

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 advances 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.

10-543-164 Orientation to Associate Degree Nursing — 3 credits

Introduction to the Associate Degree Nursing Program for licensed practical nurses. Prerequisite: Admission to the ADN program and permission of the program director.

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. 04/14

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Madison Area Technical College

Effective: 2014-2015

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 20824-3449. 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 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			Hrs/week
First Semester		**Credits**	**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.

MADISON AREA | TECHNICAL COLLEGE

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Madison Area Technical College

Occupational Therapy Assistant

Program Number: 10-514-1

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, symptomology, 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: 1 0-514-175, 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. 11/13

Madison Area Technical College

Effective: 2014-2015

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 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			Hrs/week
First Semester		Credits	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			
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.

Madison Area Technical College

Optometric Technician

Program Number: 31-516-2

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.

Rev. 05/13

Madison Area Technical College

Effective: 2014-2015

Paralegal

Program Number: 10-110-1

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 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.

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.

			Hrs/week
SUMMER (Prior to the start of program)		Credits	Lec-Lab
10-110-175	Orientation to Paralegal Profession	1	1-0

FIRST YEAR

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
	Elective	3	E
	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	Speech	(3)	(3-0)
10-809-197	Contemporary American Society	3	3-0
	Choose 1 Selective (see list)	3	S
	Semester Total	15	

SECOND YEAR

First 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	General Anatomy & Physiology OR	(4)	(3-1)
20-806-204	Biological Greek & Latin Terminology OR	(3)	(3-0)
20-806-206	General Anatomy & Physiology	(4)	(3-1)
	Choose 2 Selectives (see list)	6	S
	Semester Total	14	

Second 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
	Choose 2 Selections (see list)	6	S
	Semester Total	18	

*Although any section may be taken to satisfy the requirement, a specific section is offered for the paralegal students and it recommended for program students to register for that section.

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.

10-110-168 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.

Rev. 07/14

Madison Area Technical College

Effective: 2014-2015

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 Certificate 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 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.

Summer (Prior to start of first semester)		Credits	Hrs/week Lec-Lab
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
	Semester Total	14	

Second Semester

10-110-105	Legal Writing	3	3-0
10-110-142	Paralegal Internship	3	3-0
	Selectives	9	E
	Semester Total	15	

Madison Area Technical College

Paralegal Post-baccalaureate

Program Number: 31-110-1

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.

10-110-168 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.

Electives: Choose three courses from this list (9 credits):

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.

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Rev. 06/14

Madison Area Technical College

Effective: 2014-2015

Paramedic

Program Number: 30-531-2

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) 828-7963 or
(800) 322-6282 Ext. 7963

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.

Admission Requirements

To review program admission program 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 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
30-531-370	Introduction to Advanced Emergency Care	2	4-0
30-531-371	Pharmacology	2	4-0
30-531-374	EMT-Paramedic Clinical 1	3	0-12
30-531-377	Advanced Cardiopulmonary Emergency Care	2	4-0
30-531-378	Adult and Pediatric Advanced Cardiac Life Support	1	2-0
30-531-379	EMT-Paramedic Clinical 2	3	0-12
	Total	13	

Second Semester			
30-531-372	Trauma Care for the Paramedic	2	4-0
30-531-373	EMS Operations	1	2-0
30-531-375	Medical Emergencies 1	2	4-0
30-531-376	Emergency Care for Specialties	2	4-0
30-531-380	Paramedic Seminar	1	2-0
30-531-381	EMT-Paramedic Internship	4	0-16
	Total	12	

Madison Area Technical College

Paramedic

Program Number: 30-531-2

Program Courses

30-531-370 Introduction to Advanced Emergency Care 2 credits
Provides an introduction to the paramedic program with an emphasis on the role and responsibilities of a paramedic. Subjects covered include the study of human growth and development, and anatomy and physiology. The course continues with legal and ethical issues, communication and patient assessment. Medical history, data collection, physical examination and clinical decision-making will be addressed in both lecture and lab format. This course is based on the Department of Transportation National Standard Curriculum, Wisconsin Revised Version for EMT– Paramedic. Prerequisites: Healthcare Provider CPR course and Emergency Medical Technician–Basic, 10-531-101. Co-requisites: 30-531-371. 30-531-374, 30-531-377, 30-531-378, and 30-531-379.

30-531-371 Pharmacology 2 credits
Offers an introduction to basic vocabulary and principles of pharmacology and clinical therapeutics. Study of fluid and electrolytes along with acid base balance are addressed. Administration of drugs, including intramuscular, subcutaneous, endotracheal and intravenous therapy will be studied along with the drug protocols. This course is based on the Department of Transportation National Standard Curriculum, Wisconsin Revised Version for EMT–Paramedic. Prerequisites: Healthcare Provider CPR course and Emergency Medical Basic–Basic, 10-531-101. Co-requisites: 30-531-370, 30-531-374, 30-531-377, 30-531-378 and 30-531-379.

30-531-372 Trauma Care for the Paramedic 2 credits
Review of all systems, which include mechanism of injury, patient presentation and assessment, management techniques, including pharmacology and local protocols. Lecture format is used followed by a lab to utilize the knowledge learned in the classroom to apply in the laboratory setting. This course is based on the Department of Transportation National Standard Curriculum, Wisconsin Revised Version for EMT–Paramedic. Prerequisites: all first-semester courses. Co-requisites: 30-531-373, 30-531-375, 30-531-376, 30-531-380, and 30-531-381.

30-531-373 EMS Operations 1 credit
Addresses the current issues involved in bioterrorism and the management of incidents involving hazardous materials. The operations, roles and responsibilities are addressed along with the resources available. This course is based on the Department of Transportation National Standard Curriculum, Wisconsin Revised Version for EMT–Paramedic. Prerequisites: all first-semester courses. Co-requisites: 30-531-372, 30-531-375, 30-531-376, 30-531-380, and 30-531-381.

30-531-374 EMT-Paramedic Clinical 1 3 credits
Clinical experience provided during which the paramedic student utilizes the knowledge and skills learned in the classroom and labs. A preceptor will evaluate the student in the following areas: ambulatory care, emergency department, operating room and intensive care units. This course is based on the Department of Transportation National Standard Curriculum, Wisconsin Revised Version for EMT–Paramedic. Prerequisites: Healthcare Provider CPR course and Emergency Technician–Basic, 10-531-101. Co-requisites: 30-531-370, 30-531-371, 30-531-377, 30-531-378, and 30-531-379.

30-531-375 Medical Emergencies 1 2 credits
Review provided of systems, definitions, signs and symptoms, assessment, management techniques including pharmacology and local protocols. The following specialties are addressed: gastroenterology, hematology, immune system, neurology, endocrinology, toxicology and communicable diseases. This course is based on the Department of Transportation National Standard Curriculum, Wisconsin Revised Version for EMT– Paramedic. Prerequisites include all courses in the first semester. Co-requisites: 30-531-372, 30-531-373, 30-531-376, 30-531-380, and 30-531-381.

30-531-376 Emergency Care for Specialties 2 credits
Continuation of review of systems, definitions, signs and symptoms, assessment, management techniques including pharmacology and local protocols. The following specialties are addressed: gynecology, obstetrics, neonatology, pediatrics and geriatrics. This course is based on the Department of Transportation National Standard Curriculum, Wisconsin Revised Version for EMT–Paramedic. Prerequisites: all first-semester courses. Co-requisites: 30-531-372, 30-531-373, 30-531-375, 30-531-380, and 30-531-381.

30-531-377 Advanced Cardiopulmonary Emergency Care 2 credits
Overview of the course includes the pulmonary, cardiovascular and renal systems. Systems, definitions, signs and symptoms, assessment and management techniques are reviewed and discussed. Labs include airway and ventilation management, ECG interpretation and pharmacology as it relates to the above systems. Upon completion of the course with a grade of a C or higher, the student will be eligible to attend the ACLS certification course. This course is based on the Department of Transportation National Standard Curriculum, Wisconsin Revised Version for EMT–Paramedic. Prerequisites: Healthcare Provider CPR course and Emergency Medical Technician-Basic, 10-531-101. Co-requisites: 30-531-370, 30-531-371, 30-531-374, 30-531-378, and 30-531-379.

30-531-378 Adult and Pediatric Advanced Cardiac Life Support 1 credit
The American Heart Association sponsored courses of advanced certification in the adult and pediatric patients. This course is based on the Department of Transportation National Standard Curriculum, Wisconsin Revised Version for EMT– Paramedic. Prerequisites: Healthcare Provider CPR course and Emergency Medical Technician-Basic, 10-531-101. Co-requisites: 30-531-370, 30-531-371, 30-531-374, 30-531-377 and 30-531-379.

30-531-379 EMT-Paramedic Clinical 2 3 credits
Clinical experience provided during which the paramedic student utilizes the knowledge and skills learned in the classroom and labs. A preceptor will evaluate the student in the following areas: hospital, clinic, public health department and home health. This course is based on the Department of Transportation National Curriculum, Wisconsin Revised Version for EMT–Paramedic.
Prerequisites: 30-531-374.

30-531-380 Paramedic Seminar 1 credit
Allows the paramedic students' preceptors and clinical instructors to meet, plan, implement and evaluate the clinicals along with the field internship. Instruction on how to study for the licensure exam is included. Prerequisites: completion of all courses in the one-year diploma paramedic program with a grade of C or higher.
Co-requisite: 30-531-381.

30-531-381 EMT-Paramedic Internship 4 credits
Field Internship includes hours participating on-call, riding in the ambulance with direct patient care. Duties include direct patient care in the pre-hospital setting, documentation, maintenance and inventory of equipment, and duties as assigned by the preceptor and sponsoring agency. Students are eligible to sit for the National Registry Certification Exam upon successful completion of all Field Internship clinical hours. Upon passing the National Registry Exam for EMT–Paramedic, the student will be eligible for licensure by the State of Wisconsin. Prerequisites: completion of all courses in the one-year diploma paramedic program with a grade of C or higher.
Corequisite: 30-531-380.

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.

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

Rev: 04/13

Madison Area Technical College

Effective: 2014-2015

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.

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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			Hrs/week
First Semester		Credits	Lec-Lab
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			
10-203-108	Studio Photo 2	3	3-3
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			
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			
10-203-109	Studio Photo 3	3	3-3
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.

MADISON AREA | TECHNICAL COLLEGE

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Madison Area Technical College

Photography

Program Number: 10-203-1

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.

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Rev. 06/13

Madison Area Technical College

Effective: 2014-2015

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 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
Required (Pre-requisite) Course List			
Complete 1 of the following courses:			
10-414-100	DC/AC Circuits for Industry OR	3	0.5-5
32-414-316	DC/AC Circuits	(3)	4-2
	Subtotal	3	
Core Course List			
Complete (at least 8) credits from the following courses:			
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
	Subtotal	8	
Additional Course List			
Complete additional credits from these courses to reach a total of 15 credits:			
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	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 Photo Systems Installation Lab	1	0.5-1
10-482-149	Photovoltaic Technical Sales	1	1-0
20-806-290	Renewable Energy for International Development OR	3	3-0
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.
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Rev. 07/14

Madison Area Technical College

Effective: 2014-2015

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

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.

			Hrs/week
FIRST YEAR		**Credits**	**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			
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 prerequisite/s.

MADISON AREA TECHNICAL COLLEGE

Madison Area Technical College

Physical Therapist Assistant

Program Number: 10-524-1

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. 07/14

Madison Area Technical College

Effective: 2014-2015

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 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.

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.

Rev. 12/13

Madison Area Technical College

Effective: 2014-2015

Early Childhood Education-Preschool Credential-Certificate

Program Number: 90-307-1

Certificates

Education Program Cluster

School of Human and Protective Services

Certificate courses are offered in Madison; Courses and certificate are also available in a bilingual (Spanish/English) format.

For information call:
(608) 245-5888 or (800) 322-6282 Ext. 5888

About the Certificate

Research demonstrates that the best predictor of quality childcare is a teacher's level of education. The completion of the Preschool Credential helps meet this goal and provides students a mechanism to move through The Registry Career Levels. The last course of the credential, the capstone, synthesizes course information so that students are able to prepare a portfolio for The Registry's commission process.

Admission Requirements

To review program admission requirements and application processing dates, visit the program's website at: http://madisoncollege.edu/program-info/preschool-credential-certifiate.

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 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
10-307-130	ECE: Preschool Capstone	3	3-0
10-307-148	ECE: Foundations of Early Childhood Education	3	3-0
10-307-167	ECE: Health, Safety, and Nutrition	3	3-0
10-307-178	ECE: Art, Music, and Language Arts	3	2-2
10-307-179	ECE: Child Development	3	3-0
10-307-188	ECE: Guiding Children's Behavior	3	2-2
	Total	18	

(It is recommended that students first enroll in Foundations of Early Childhood Education followed by Child Development. The Preschool Capstone must be taken last. Other than this suggested order, there are no pre-requisites for the Preschool Credential courses.)

Program Number: 90-307-1

10-307-130 ECE: Preschool Capstone 3 credits
The capstone is the last course all students take prior to completing the Preschool Credential. The intent of this capstone course is to cover and revisit some important themes from the prior five courses. The student will synthesize the information and demonstrate mastery of the competencies through the completion of a portfolio. Pre-requisites: 10-307-148, 10-307-167, 10-307-178, 10-307-179, and 10-307-188.

10-307-148 ECE: Foundations of Early Childhood Development 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 education models.

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.

10-307-178 ECE: Art, Music, and Language Arts 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.

10-307-179 ECE: Child Development 3 credits
This 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.

10-307-188 ECE: Guiding Chidren'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.

Career Potential:

- Child Care Teachers
  Work in full-day and part-day child care programs, nursery schools and Head Start programs.
- Child Care Assistant Teachers
  Work under the supervision of a child care teacher.
- Family Child Care Providers
  Care for eight children or less in provider's home.

For professionals already employed in the Early Childhood field, the Preschool certificate will help you advance your career and earn professional recognition by preparing you to get the Preschool Credential awarded through the Wisconsin Child Care Registry.

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. 08/13

Madison Area Technical College

Effective: 2014-2015

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 to appeal to those individuals desiring professional development, career advancement, or knowledge in a field of Project Management.

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 may be applied to the Administrative Assistant Associate Degree program, 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. 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 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.

Courses		Credits	Hrs/week Lec-Lab
10-103-139	Excel-Intermediate**	1	0.25-1.5
10-103-186	MS Project*	2	1-2
10-106-164	Customer Contact Skills	1	0.25-1.5
10-106-186	Project Management and Coordination	2	2-0
Plus, choose one of the following courses:			
10-109-102	Fundamentals of Meeting Management	3	3-0
10-196-189	Team Building and Problem Solving	3	3-0
	Total	9	

* Prerequisite: Working knowledge of Microsoft Windows
** Prerequisite: Excel-Beginning, 10-103-133, or equivalent

Madison Area Technical College

Project Management Certificate

Program Number: 90-106-5

Courses

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.

10-103-186 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 Project Management and Coordination 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.

10-109-102 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.

10-196-189 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.

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Rev. 04/14

Madison Area Technical College

Effective: 2014-2015

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 exam. 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.

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 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.

Courses		Credits	Hrs/week Lec-Lab-Occup
10-194-182	Real Estate Law*	4	4-0-0
	(Salesperson Educational Requirement)		
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	Real Estate Internship***	3	1-0-8
	Total	20	

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 offer spring semester
***Only offered during interim

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Property Management Certificate

Program Number: 90-194-1

Required 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. 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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Madison Area Technical College

Effective: 2014-2015

Quality Management

Program Number: 90-185-1

Certificate

Business and Marketing Program Cluster

School of Business and Applied Arts

Certificate offered online

For information call: (608) 246-6003 or (608) 258-2370
(800) 322-6282 Ext. 6003 or 2370

About the Certificate

This certificate features a course of study designed to teach skills that are necessary for implementing the concepts of quality and continuous process improvement in service, manufacturing or government organizations. The certificate contains four related courses that are basic to the process of quality improvement. Upon completion of all four courses, the learner will receive 12 academic credits and a certificate that recognizes concentrated study in a particular field. It is not mandatory, but, ideally, the curriculum will be taken in sequence.

Admissions Requirements

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

- Manager
- Supervisor
- Lead Worker
- Team Leader
- Team Facilitator
- Quality Inspector
- Quality Technician

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.

COURSES		Credits	Hrs/week Lec-Lab
10-625-110	Managing for Quality	3	3-0
10-625-111	Understanding Organizational Change	3	3-0
10-625-112	Employee Involvement in Quality	3	3-0
10-625-116	Intro to Quality Systems	3	3-0
	Total	12	

Program Courses

10-625-110 Managing for Quality — 3 credits

Examines the manager's role in a quality-focused organization. Students will be introduced to the four basic functions of management as practiced in an environment that focuses on employee participation. The management philosophies of Crosby, Deming, and Juran will be presented. The concept of teams and teamwork, and variation and implementation strategies are introduced.

10-625-111 Understanding Organizational Change — 3 credits

Analyze the process or organizational change. Shows students how to be agents for change, and how to deal with resistance to change. Students will understand how to implement and standardize project improvements. An organizational model for total quality improvement will be presented.

10-625-112 Employee Involvement in Quality — 3 Credits

Explore the importance of groups in improving quality and productivity. The stage of group development and factors that affect group performance will be identified. Students will also be introduced to team building, team facilitation, and conflict resolution.

10-625-116 Introduction to Quality Systems — 3 Credits

In the course Intro to Quality Systems learners will be introduced to modern quality systems and their function as it relates to continuous improvement, lowering costs associated with waste, rework and process variation. Each learner will have the opportunity to practice planning, implementing, documenting and assessing quality improvements through the application of these concepts and accepted practices using their own work experience.

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.

Rev. 04/13

Madison Area Technical College

Effective: 2014-2015

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) 259-2902,or (800) 322-6282 Ext. 6065 or 2902

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

1) Caregiver Background Check (CBC); refer to catalog for Health, Human and Protective Services Policy;
2) Physical exam and a completed Health History Form on file prior to beginning clinical training;
3) Essential functions for the Radiography Program; and
4) Recommend meeting with the program director; and
5) CPR advanced certification.

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			Hrs/week
Pre-Radiography course:		Credits	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	
Summer Semester			
10-526-193	Radiography Clinical 3	3	0-32
	Semester Total	3	
SECOND YEAR			
First 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	
Second 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	
Summer Semester			
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.

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Radiography

Program Number: 10-526-1

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 hoe 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 Densitomitrist
- 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.

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Rev. 05/13

Madison Area Technical College

Effective: 2014-2015

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.

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.

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. This basic course provides a comprehensive overview of the exciting world of marketing.

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.

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2013-2014 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
10-194-182	Real Estate Law	4	4-0-0
	(Salesperson Educational Requirement)		
10-194-185	Real Estate Brokerage	4	4-0-0
	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
	Semester Total	9	
10-194-195	Real Estate Internship*	3	1-0-8
	Semester Total	3	

Sales Emphasis:

10-104-160	Sales Management	3	3-0-0

*Only offered during interim

Program Courses (continued)

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 2 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.

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. 07/14

Madison Area Technical College

Effective: 2014-2015

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 Carroll College and George Williams College, 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 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			Hrs/week
First Semester		Credits	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			
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	
Summer			
10-109-175	Recreation Internship Practicum***	2	0-8
	Total	2	
SECOND YEAR			
First Semester			
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	
Second Semester			
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.

10-109-173 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.

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..

Madison Area Technical College

Effective: 2014-15

Renewable Energy Certificate

Program Number: 90-480-2

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 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
*Choose at least 6 credits from among these **Core** courses:*			
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)	(3-0)
	Total	at least 6 credits*	
*Choose at least 2 credits from among these **Intermediate** courses:*			
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*	
*Choose **additional** credits from the following courses to reach a **total of 12 credits**:*			
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

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.

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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 transesterfication 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, transesterfication, 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.

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

Rev. 04/14

Madison Area Technical College

Effective: 2014-2015

Respiratory Therapist

Program Number: 10-515-1

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) 246-6697, or (800) 322-6282 Ext. 6065 or 6697

About the Program

Respiratory therapists are members of a team of health care professionals working in a wide variety of clinical settings. They evaluate, treat and manage patients of all ages with respiratory and cardiopulmonary disease. Working with physicians, respiratory therapists are involved in clinical decision-making and patient education. Respiratory therapists work primarily in hospital settings providing and assessing the clinical status of patients and performing diagnostic testing. Therapists work in emergency rooms and intensive care units, participating in life support activities, such as airway care, mechanical ventilation and resuscitation efforts. Respiratory therapists may also work in diagnostic labs, such as a pulmonary function or sleep labs. They also work in home care and clinic settings.

This program is accredited by the Commission on Accreditation for Respiratory Care (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).

Insert 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 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			Hrs/week
First Semester		Credits	Lec-Lab
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	
Interim			
10-515-175	Respiratory Clinical 1	2	0-36
	Semester Total	2	
Summer			
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	3	
SECOND YEAR			
First 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	
Second 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.

Madison Area Technical College
Respiratory Therapist

Program Number: 10-515-1

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. 05/13

Madison Area Technical College

Effective: 2014-15

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 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.

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 though 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.

Rev. 05/13

Madison Area Technical College

Effective: 2014-2015

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 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
10-103-133	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
10-104-185	Customer Service Management	3	3-0
10-145-105	Operations Management	3	3-0
10-145-106	Small Business Marketing & Promotional Techniques	3	3-0
10-801-195	Written Communications	3	3-0
10-804-123	Math with Business Applications	3	3-0
	Semester Total	18	

Second Semester			
10-101-106	Accounting Concepts	3	3-0
10-104-104	Selling Principles	3	3-0
10-145-102	Small Business Development and Planning	3	3-0
10-145-108	Field Experience Seminar	2	1-8
10-196-191	Principles of Supervision	3	3-0
	*Required Technical Course Selection	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	Innovation to Implementation	3 credits

Notes:

(1) 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.

(2) Courses may be taken in any order, as long as any pre-requisites have been satisfied (for any individual courses that have them).

(3) Students should review their Academic Requirements (advising report) in their student center for any in lieu of choices for individual course requirements.

Madison Area Technical College

Small Business Entrepreneurship

Program Number: 31-145-1

Program Courses

10-101-106 Accounting Concepts 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.

10-104-185 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.

10-104-104 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 and Planning 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 and Promotional Techniques 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.

10-196-191 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.

Recommended 3-Credit Electives (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 Innovation to Implementation

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. 04/14

Madison Area Technical College

Effective: 2014-2015

Social Media

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

10-201-198 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 investigate the use of various social media applications including blogs, Twitter and virtual worlds.

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 has 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 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. Prerequisites: 10-104-114 and Instructor Consent.

Curriculum

The courses listed below outline the requirements for completion for students officially admitted in the 2014-2016 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
10-201-198	Social Media/Web Design Strategies	3	3-0
10-104-114	Social Media Principles	3	3-0
20-801-262	Social Media Writing	3	3-0
	Total	9	

One Elective

Students must also complete at least one course (minimum 3 credits) in the following electives:

10-104-115	Advanced Social Media Campaigns	3	3-0
10-104-162	Social Media-Mobile Marketing	3	3-0
10-104-163	Social Media Business Ethics	3	3-0
10-206-143	Digital Storytelling	3	3-3
	Total	(at least) 3	

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.

10-104-163 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.

10-206-143 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.

20-801-262 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.

Jobs in Social Media

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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MADISON AREA | TECHNICAL COLLEGE

Real world smart.

Madison Area Technical College

Effective Fall: 2014-2015

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

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.

			Hrs/week
First Semester		Credits	Lec-Lab
10-007-118	Introduction to Human Stem Cell Concepts	1	1-0
10-007-116	Introduction to Human Stem Cell Methods	3	0-6
	Semester Total	4	
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

10-007-116 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 immmunodetection 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.

10-007-117 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.

10-007-118 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.

10-007-119 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.

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.

Rev. 04/14

Madison Area Technical College

Effective: 2014-2015

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 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.

			Hrs/week
Supervisory / Core Management Skills		**Credits**	**Lec-Lab**
10-196-191	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	Diversity and Change Management	3	3-0
	Total	33	
Related Study Requirements			
10-101-106	Accounting Concepts	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	Contemporary American Society	3	3-0
	Total	30	
Elective Requirements			
	Electives	3	E
	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.

Madison Area Technical College
Supervisory Management

Program Number: 10-196-1

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.

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

Rev. 04/14

Madison Area Technical College

Effective: 2014-2015

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 and 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.

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.

Pre-Surgical Technologist courses:		Credits	Hrs/week Lec-Lab
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 (1st 9 weeks)	4	8-0
31-512-328	ST Fundamentals 1 (1st 9 weeks)	4	8-0
31-512-329	ST Fundamentals 2 (2nd 9 weeks)	2	4-0
31-512-330	ST Clinical 1 (2nd 9 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.

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

Madison Area Technical College
Surgical Technologist

Program Number: 31-512-1

Program Requirements

1) Hepatitis B vaccine prior to beginning the program.
2) Physical exam and completed History Form on file prior to beginning the program.
3) Caregiver Background Check (CBC). For the most current information on the Caregiver Law, visit this website: www.dhfs.state.wi.us.
4) CPR certification (includes C level/Healthcare Provider and two-person rescue).

Additional Fees: Hepatitis B vaccine, parking fees at clinical sites, clinical shoes, 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
- 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.

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Rev. 04/14

Madison Area Technical College

Effective: 2014-15

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 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.

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	

Madison Area Technical College

Sustainable Business Certificate

Program Number: 90-102-5

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. 08/13

Madison Area Technical College

Effective: 2014-2015

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 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 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.

Coursework required for degree	Credits
Occupational Specific Courses[1]	39 credits
General Education[2]	21 credits
Total	60 credits

[1]Occupational 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.

[2]Must 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

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.

Rev. 07/13

Madison Area Technical College

Effective: 2014-2015

Therapeutic Massage

Program Number: 30-537-1

Less-Than-One-Year Program

Health-Related Professions Program Cluster

School of Health Education

Program offered at Downtown Education Center, Madison

For information call: (608) 246-6065, (608) 258-2321, or (800) 322-6282 Ext. 6065 or 2321

About the Program

The Therapeutic Massage program offers an entry-level training program for students interested in pursuing a professional career in massage therapy, or for health care providers looking to enhance their range of clinical skills and knowledge. There is a wide range of career opportunities available in this rapidly expanding field. During their training, students gain a comprehensive understanding of the human body and a high degree of technical skill, with an emphasis on personal and professional development, increased self-awareness and sensitivity. Our graduates enjoy the benefits of being of service to others and having work that is meaningful.

Upon graduation from the program, students are eligible to become Wisconsin Licensed Massage Therapists.

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 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
30-537-336	Musculoskeletal Anatomy*	1	5-0
30-537-334	Applied Musculoskeletal Anatomy*	1	5-0
10-501-153	Body Structure and Function* OR	3	3-0
20-806-206	General Anatomy & Physiology*	(4)	5-4
30-537-340	Introduction to Therapeutic Massage 1	3	6-9
30-537-342	Introduction to Therapeutic Massage 2	3	6-9
	Total	11	

Second Semester			
30-537-338	Kinesiology**	1	2.5-0
30-537-339	Pathology**	1	2.5-0
30-537-344	Specialized Techniques	3	0-15
30-537-346	Massage Clinic and Business Practices	3	8-7
	Total	8	

*Course may be taken prior to entering the program
**Course may be taken prior to entering the program with proper prerequisites

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 Estimated Fees:

Madison Area Technical College

Therapeutic Massage

Program Number: 30-537-1

Courses

30-537-334 Applied Musculoskeletal Anatomy 1 credit
Explores a thorough understanding of musculoskeletal anatomy as it applies to Therapeutic Massage. Students will develop palpation skills, practice ROM movements, and learn specific massage therapy techniques to identify the bones and muscles that comprise the musculoskeletal system. Students apply their knowledge from the Musculoskeletal Anatomy course in a hands-on, lab-type setting.
Co-requisite: 30-537-336.

30-537-336 Musculoskeletal Anatomy 1 credit
Course focuses on the anatomy and physiology of the skeletal and muscular systems of the body. Students will learn the names, locations, insertion points and actions of many of the muscles of the human body. An optional cadaver lab is offered to interested students. Co-requisite: 30-537-334.

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.

30-537-338 Kinesiology 1 credit
Students further study the musculoskeletal system with an emphasis on muscle groups used to perform specific actions. This course will assist students in making assessments and identifying muscles involved in certain injuries. Prerequisites: 30-537-336, 30-537-334, and 10-501-153.

30-537-339 Pathology 1 credit
Covers the types of disorders that may occur in each of the major body systems and more specifically, the signs and symptoms of selected disorders that could endanger the health of either the massage client or the practitioner. Students also gain a basic understanding of pharmacology and the possible interactions between medications and massage.
Prerequisites: 30-537-336, 30-537-334, and 10-501-153.

30-537-340 Introduction to Therapeutic Massage 1 3 credits
This course introduces students to the field of "touch therapies." Topics covered include the history of massage, educational and legal requirements, effects, benefits and contraindications of massage, basic massage techniques, proper draping techniques, body mechanics, chair massage and selecting a massage table. Many learning activities help students in developing increased body awareness and relaxation skills. Prerequisites/Co-requisites: 30-537-334, 30-537-336, and 10-501-153 (or its alternatives listed in curriculum).

30-537-342 Introduction to Therapeutic Massage 2 3 credits
Topics covered include personal and professional ethics, medical terminology, sanitation and safety, choosing massage equipment and supplies to create the massage environment, interviewing clients, assessments and keeping client records. Students are instructed in making positive choices for a healthy lifestyle. Massage techniques include learning a full body massage routine. Prerequisite: 30-537-340.

30-537-344 Specialized Techniques 3 credits
Students learn to work with clients with special needs such as pregnant clients, the elderly and individuals with particular health challenges. Remedial techniques taught include trigger point therapy, cross fiber friction, sports massage, reflexology and other therapeutic techniques. Related and complimentary fields are explored. Prerequisite: 30-537-342.

30-537-346 Massage Clinic and Business Practices 3 credits
This training provides the massage student with an opportunity to practice and refine their massage skills and to deal with clients with varying needs. The student-run clinic affords the student experience in scheduling appointments, keeping client records, and creating a restful, relaxing atmosphere for clients. In the business portion of the class, students explore career opportunities and compare advantages. Students must be certified in First Aid/CPR before beginning clinic. Prerequisite: 30-537-344. Student must be prepared to take the State licensing exam and submit the appropriate fees at this time.

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.

Rev 05/13

Madison Area Technical College

Veterinary Technician

Effective: 2014-2015

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; 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 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			Hrs/week
First Semester		**Credits**	**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	Principles of Animal Biology	4	3-2
	Semester Total	15	
Second Semester			
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	Life Science Chemistry	5	4-3
	Semester Total	16	
Summer Session			
10-091-158	Internship (8 weeks/288 hours minimum)	4	40
SECOND YEAR			
First Semester			
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	Oral/Interpersonal Communication	3	3-0
	Semester Total	17	
Second Semester			
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	Psychology of Human Relations	3	3-0
	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.

Madison Area Technical College

Veterinary Technician

Program Number: 10-091-1

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 in 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 prohylaxis, 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.

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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.

Rev. 07/14

Madison Area Technical College

Effective: 2014-15

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 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
10-206-126	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	Digital Storytelling	3	3-3
	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
	Selective (from list below)	2	2-2
	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.

Madison Area Technical College

Effective: 2014-2015

Virtual Assistant

Advanced Technical Certificate

Program Number: 80-106-1

Advanced Technical Certificate

Business Technology Program Cluster

School of Business and Applied Arts

Certificate courses are offered online

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

About the Certificate

Virtual assistants are independent contractors who (from a remote location, usually their home or office) support multiple clients in a variety of industries by providing administrative, creative, and technical services.

This certificate is available to those who already possess mastery of their administrative skill set, have provided administrative services in a high-level working environment, and those looking to market their unique skills to open and operate their own virtual assistant business.

Admission Requirements

To review program admission requirements and application processing dates, visit the program's website at: http://madisoncollege.edu/program-info/virtual-assistant-advanced-technical-certificate.

Prior to applying, please contact us at: va@madisoncollege.edu.

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. 05/14

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.

Courses		Credits	Hrs/week Lec-Lab
FIRST TERM			
FIRST TERM			
10-145-102	Small Business Development and Planning	3	3-0
10-106-186	Project Management and Coordination	2	0.5-3
10-152-164	Website Design Concepts	1	0.25-1.5
SECOND TERM			
10-106-176	Managing the Virtual Office	3	1-4
10-103-169	Collaboration Tools	1	0.25-1.5
10-106-198	Virtual Assistant Live	2	0.5-3
	Total	12	

Courses

10-145-102 Small Business Development and Planning 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.

10-106-186 Project Management and Coordination 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 software and GANTT charts. Project management and coordination techniques and concepts are learned by examining case studies and completing a project.

10-152-164 Website Design Concepts 1 credit
Use Web-design tools and techniques to plan, create, test, publish, and maintain a Web site. Use HTML, Dreamweaver or FrontPage, or other Web authoring software to develop a Web site that is user friendly, well designed, and effective. Prerequisite: understanding of Windows and either HTML, Dreamweaver, FrontPage, or other web authoring software.

10-106-176 Managing the Virtual Office 3 credits
Students will prepare and plan for the operations of their virtual office. Topics include: setting up the home office, considering physical space, technology; transitioning from employee to employer, setting hours and limits, writing client contracts, ending contracts; securing a team of professionals; managing a budget, tracking income/expenditures; billing clients; professional support and connections, social networking, professional virtual assistant organizations; thriving in autonomy, decision-making, organizing work; developing business relationships; developing the business marketing lifecycle/marketing plan. Prerequisites: 10-145-102 and 10-106-182. *Enrollment restricted to students accepted into the Virtual Assistant ATC Program.*

10-103-169 Collaboration Tools 1 credit
This course will focus on the common web-based collaborative tools used by virtual assistants in the industry. Topics include: web-based application software collaboration in web-based groups and blogs; research additional web-based tools used in the industry. *Enrollment restricted to students accepted into the Virtual Assistant ATC Program.*

10-106-198 Virtual Assistant Live 2 credits
This course is a capstone course for students at the end of their VA program. Students will combine skills learned in previous VA courses to build VA business materials and become ready to "Go Live" with the virtual administrative services business. Topics include: creating marketing materials and business stationary, creating the company website, and using social media tools. Students will also generate a customer contract and fulfill the requirements of that contract. Prerequisites: 10-145-102, 10-106-182, and completion or concurrent enrollment in 10-103-169 and 10-106-176. *Note: must be taken as either the last course or concurrently with other courses in the final semester. Enrollment is restricted to students accepted into the Virtual Assistant ATC Program.*

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 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			Hrs/week
First Semester		Credits	Lec-Lab
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	Psychology of Human Relations	3	3-0
	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	Oral/Interpersonal Communication	3	3-0
	Semester Total	18	
SECOND YEAR			
First 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	Contemporary American Society	3	3-0
	Semester Total	17	
Second 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
	Electives	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.

Recommended Electives

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
10-201-155	WordPress for Designers	3	2-2
10-201-195	Advanced Web Page Design (8 wk course)	2	2-2
10-201-196	Advanced Web Page Design 2 (8 wk course)	2	2-2

Madison Area Technical College

Program Number: 10-206-1

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 devise. 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 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.

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Rev. 07/14

Madison Area Technical College

Effective: 2014-2015

Web Page Design

Program Number: 90-201-1

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 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.

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 steams 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:

- Web Page Design and Layout
- Web Illustration
- Web Animation
- Web Project Management
- 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.

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Rev. 04/14

MADISON AREA | TECHNICAL COLLEGE

Real world smart.

Madison Area Technical College

Effective: 2014-2015

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. 04/14

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.

Courses		Credits	Hrs/week 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.

Madison Area Technical College

Effective: 2014-2015

Welding

Program Number: 31-442-1

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

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) must be 2.0 or above.

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
10-623-200	Interpreting Engineering Drawings	2	0-4
31-442-301	Layout & Fabrication 1	2	1-3
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
31-804-379	Vocational Mathematics 1	1	2-0
	Semester Total	15	

Second Semester			
31-442-316	Arc Welding (SMAW) Horizontal	1	1-1
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
31-442-302	Layout and Fabrication 2	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
	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.

Madison Area Technical College
Welding

Program Number: 31-442-1

Program 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.

31-442-301 Layout and Fabrication 1 2 credits
Students perform welding fabrication techniques on common shaped products like hoods, hoppers, structural beams and manufactured products using geometric, triangulation and plate layout. Fabrication projects develop students' knowledge of hand and power tools, shearing, oxy-fuel and plasma arc hand and semi-automatic shape cutting. Calculating weld joint and bend allowances, metal forming, grinding and polishing. Layout is applied to fabrication of welded assemblies from drawings of developing a drawing and bill of materials for a part. Welding repairs and crane safety are also covered.
Co-requisite: 32-442-314 or consent of instructor.

31-442-302 Layout and Fabrication 2 2 credits
Students perform welding fabrication techniques on common shaped products like hoods, hoppers, structural beams and manufactured products using geometric, triangulation and plate layout. Fabrication projects develop students' knowledge of hand and power tools, shearing, oxy-fuel and plasma arc hand and semi-automatic shape cutting. Calculating weld joint and bend allowances, metal forming, grinding and polishing. Layout is applied to fabrication of welded assemblies from drawings of developing a drawing and bill of materials for a part. Welding repairs and crane safety are also covered.
Prerequisite: 31-442-301.

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.

31-442-316 Arc Welding (SMAW) Horizontal 1 credit
Emphasizes shielded metal are welding (stick arc) techniques in the horizontal position. Included are AWS fillet and groove welds using 1/8" to 5/32" diameter E-6010, iron powder and low hydrogen electrodes on welded assemblies.
Prerequisite: 31-442-315.

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.

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.

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Rev. 07/13

Madison Area Technical College

Effective: 2014-2015

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 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.

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
	Total	3	

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.

Rev. 08/13