



Program Curriculum Sheets Catalog

2011-2012

Center for Agriscience & Technologies

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Basic Horticulture

Program Number: 30-001-5

Associate Degree Transfer Program

Agriculture and Natural Resources Program Cluster

Center for Agriscience and Technologies

Courses offered at Madison Campuses

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

About the Program

Madison Area Technical College offers eight associate-degree courses dealing specifically with ornamental horticulture- the cultivation and use of plants and flowers to control, beautify and improve our environment.

Although a full associate degree program is not available at Madison Area Technical College, these courses offer students a foundation in horticulture and with additional Madison Area Technical College courses can provide up to 40 credits that can transfer to Gateway Technical College's Horticulture Program in Kenosha, Wisconsin. We recommend communicating directly with Gateway Technical College regarding transfer of credits and other advising on how best to pursue this degree by calling (262) 564-2434.

Students enroll in horticulture courses for varying reasons. Some take one or more courses to explore the field. Others take a few horticulture courses to further training. Others are interested in graduating with an associate degree in horticulture. For those individuals, staff can arrange a specific schedule including general education, business and marketing courses that will transfer to Gateway Technical College. Students planning to pursue an associate degree should contact the Agriscience Department before or at the time of registration.

Horticulture classes, except field trips, are held at the Commercial Avenue Education Center, 2125 Commercial Avenue, during the regular college semester. Three courses are typically offered each semester and are taught in the evening.

Curriculum

The courses listed below outline the requirements for graduation for students entering this program in the 2011-2012 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 myMadisonCollege account for specific graduation requirements. Program requirements are subject to change.

In a typical semester, three courses are offered.

Courses	Hrs/week	
	Credits	Lec-Lab
10-001-111 Introduction to Horticulture	3	2-2
10-001-120 Landscaping -Interior	3	2-2
10-001-134 Turf and Lawn Management	3	2-2
10-001-140 Introduction to Landscape Design.....	3	2-2
10-001-143 Garden and Bedding Plants	3	2-2
10-001-144 Floral Design 1.....	3	1-4
10-001-145 Floral Design 2.....	3	1-4
10-001-155 <u>Garden Center Operations</u>	3	2-2
Semester Total	24	



Program Courses

10-001-111 Introduction to Horticulture 3 credits

This introductory course provides a broad spectrum of topics in the discipline of Horticulture science. Specific topics covered are: plant anatomy, classification, plant growth, development, propagation, chemical controls, common pests and diseases. The course objective is for students to survey Horticulture science to help prepare them for future classes in the Horticulture curriculum of a more specific nature. Also, the course is geared for commercial horticulture workers as well as for the novice interested in the plant sciences. The subject matter is covered scientifically with the intent of practical and sustainable application.

10-001-120 Landscaping-Interior 3 credits

Students learn to choose plants to create pleasing and professional interior displays. Includes diagnosing and solving plant problems, drawing plans and writing maintenance contracts. Labs provide hands-on experience.

10-001-134 Turf and Lawn Management 3 credits

Examines how to effectively start and maintain professional appearing lawns/turf. Discusses which grasses to use, turf chemicals, equipment and diagnosing problems. Labs include identification of weeds and several field trips to study various uses of turf.

10-001-140 Introduction to Landscape Design 3 credits

Teaches how to plan and draw a professional landscape design. Focuses on selecting correct plant material, proper placement and uses of landscape construction elements. Lab provides practical design and drawing experience.

10-001-143 Garden and Bedding Plants 3 credits

Covers greenhouse propagation and growing of annual and perennial plants used for bedding plants in landscaping. Covers bedding plant identification, culture, landscape use and flower-bed design. Labs include hands-on experience emphasizing proper technique in propagating and transplanting bedding plants, applying growth regulators and controlling pests.

10-001-144 Floral Design 1/Commercial 3 credits

Students practice basic principles, elements and mechanics of floral design. Involves identification, care and handling of flowers and foliage. Includes hands-on designing of corsages, primary arrangements and holiday arrangements.

10-001-145 Floral Design 2/Commercial 3 credits

Covers hands-on use of fresh flowers, fresh foliage, dried materials, silks and fruit in the more advanced floral designs. Includes discussion of color theory and development of floral creativity. Prerequisite: 10-001-144.

10-001-155 Garden Center Operations 3 credits

Covers garden center establishment and operation. Course content includes financial records, merchandising/promotion strategies and the selection/maintenance of quality plant materials. Labs include hands-on experiences and field trips.

Career Potential:

- Nursery Grower
- Greenhouse Grower
- Sales and Marketing Representative
- Floral Designer
- Golf Course Maintenance Worker

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

- Landscape Designer
- Landscape Maintenance Technician
- Interior Plantscaper
- Production Supervisor
- Floral Shop Owner/Manager
- Garden Center Manager/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. 01/11

Farm Business and Production Management Program

Program Number: 30-090-1

Less-Than-One-Year Diploma

Agriculture & Natural Resources Program Cluster

Center for Agriscience and Technologies

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

About the Program

The objective of the Farm Business and Production Management Program is to meet the educational needs of farmers. Most program participants are well-established producers and dairymen. But this program is also available to those that do not own farms and or who are becoming established in the business of farming. Individualized on-farm instruction is the most valuable part of the program. It is provided on a scheduled basis on your farm.

Individualized Instruction is offered on your farm and Group Learning Experiences such as Field Trips and Class Sessions are held in dozens of locations, some of which are probably near your farming operation.

Who should enroll?

The ideal student is a beginning or experienced farmer who wants to advance his/her abilities in areas that are new to the operation he manages. Curriculum is constantly updated to establish confidence in production techniques that did not exist only a few years ago. (I.e., GPS, Genomics, GMOs, Nutrient Planning, SNAP+, QuickBooks, etc) and also in other areas that producers need to learn to stay competitive (ie Commodity Marketing, Estate Planning, etc.).

The program offers individuals a wide variety of opportunities, both in the delivery of the program and the curriculum offered. Valued instruction is offered in all facets of production agriculture and individualized learning experiences are designed to help meet the established goals of the farmer.

Unique Requirements for Admission

Enrollment for this program is open to any individual who is beyond high school age and is actively engaged in or about to enter farming. This includes farm owners, operators, renters, partners, managers and hired persons. Instruction is mostly done in the cognitive and affective domains in a relaxed and informal, yet informative setting.

Note: The State of Wisconsin will pay for half the tuition costs if criteria are met. Other financial aid and grants are also available.

Curriculum

The courses listed below outline the requirements for graduation for students entering this program in the 2011-2012 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 myMadisonCollege account for specific graduation requirements. Program requirements are subject to change.

Courses	Credits
30-090-381 Operating the Farm Business.....	3
30-090-382 Soils Management	3
30-090-383 Crop Management.....	3
30-090-384 Livestock Nutrition	3
30-090-385 Livestock Management.....	3
30-090-386 Farm Records and Business Analysis	3
Total	18

Unique Requirements for Graduation

To graduate from this program, a student must successfully complete the six required courses, 18 credits.



Program Courses

30-090-381 Operating the Farm Business 3 credits

This important curriculum area helps develop competencies in business principles, goal setting (very important), organizing farm business records, establishing fundamental business management expertise, and proficiently marketing commodities. It emphasizes the management skills and concepts necessary for farmers to continue as technologies change. The farm business skills learned builds a foundation that allows farms to succeed, prosper, and transfer to the next generation.

30-090-382 Soils Management 3 credits

Covers preparation and implementation of a land-use plan and helps students understand soil testing procedures and reports. Students receive instruction on understanding and implementing fertilizer recommendations and budgets as well as application of farm manures, chemicals, soil conservation practices, and the management and safe use of farm machinery and equipment. Inclusive are areas such as Nutrient Management Planning, SNAP-Plus, agronomic crop growth, and soil analysis.

30-090-383 Crop Management 3 credits

Crop management emphasizes analysis of the farming business and planning cropping practices and strategies to meet student needs. Specific topics relate to variety selection, the use of GMOs, crop rotation planning, pest control, storage facilities, tillage systems, variable rate technology, GPS and auto-steer. Commodity Marketing, Managed Grazing, and computer records for cropping systems are optional emphasis areas.

30-090-384 Livestock Nutrition 3 credits

This course emphasizes the skills, techniques and concepts necessary for sound feeding management. The determination of feed values, the economics of feed, nutritional terminology and requirements, feed consumption of livestock, and metabolic disease prevention is emphasized. The student will understand feed tag labels and evaluate basic feeding programs. Nutrition concepts are taught using the latest software for balancing rations. Numerous tools that help feed animals efficiently and economically are introduced.

30-090-385 Livestock Management 3 credits

The livestock management course provides instruction on the various phases of selection, breeding, herd health, raising of replacement stock, and marketing livestock and livestock products. It includes the selection, operation and maintenance of milking, feeding, ventilation, manure handling, equipment and farm buildings.

30-90-386 Farm Records and Business Analysis 3 credits

Instruction includes the practical use of a record system in farm management and financial analysis. It accentuates the need for business goals, estate planning, the use of farm credit, farm business arrangements, income taxes and insurance. Instruction is provided on the use of computers and/or computer records. The importance of a sound risk management program is emphasized including commodity marketing with options and futures. The advanced student will be introduced to WIACT, a sophisticated analysis tool.

Recommended Elective:

30-090-387 Farm Management Update 1-3 credits

Because of changing production technology and farm management decisions, established farmers need to receive up-to-date instruction and information on current practices for farm records and analysis, soils, crop management, and livestock nutrition and management. The specific objectives of this course are modified on a yearly basis to meet the needs of area farmers. The advanced student will be introduced to FINPACK, a sophisticated analysis tool and data base that benchmarks your farming enterprises.

Career Potential:

- Family Farm Operator
- Family Farm Owner

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

- Dairy Herdsmen
- General Farm Manager
- Field Equipment Operator
- Livestock Production Specialist
- Crop Production Specialist

Rev. 10/10

Associate in Applied Science Degree

Agriculture & Natural Resources Program Cluster

Center for Agriscience and Technologies

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 Regulation and Licensing. 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.

A completed packet consists of the completed application form, \$30 application fee (if not previously paid), high school transcripts, GED/HSED test scores, college transcript(s) and ACT/COMPASS test scores. An incomplete packet will be returned without being considered for admissions. If the transcripts were previously submitted, a new copy(s) needs to be included with the admissions packet.

Unique Requirements for Admission

1) High school graduation or equivalency; 2) high school and post-secondary transcripts; 3) one year of high school algebra, biology and chemistry with a grade of C or better; and 4) satisfactory score on ACT test (or COMPASS or equivalent assessment test prior to admission).

It is recommended that applicants obtain occupational experience with animals prior to applying for admission. Applicants without algebra, biology and chemistry can take these courses at Madison College; however, they must complete them by the end of spring semester for admission the following fall. Courses in accounting, agriculture, math, keyboarding and computer skills may be helpful.

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 only once.*

Curriculum

The courses listed below outline the requirements for graduation for students entering this program in the 2011-2012 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

First Semester		Credits	Hrs/week Lec-Lab
10-091-105	Occupational Preparation	1	1-0
10-091-123	Laboratory Animal Science 1	2	1-3
10-091-170	Veterinary Medical Terminology	2	2-0
10-091-171	Animal Care and Management 1	3	2-3
10-801-195	Written Communication	3	3-0
10-806-105	<u>Principles of Animal Biology</u>	4	3-2
Semester Total		15	

Second Semester		Credits	Hrs/week Lec-Lab
10-091-107	Animal Disease 1	2	2-0
10-091-109	Pharmacology 1	2	1-2
10-091-120	Veterinary Clinical Pathology 1	3	1-4
10-091-131	Veterinary Office Procedures 1	1	1-0
10-091-172	Animal Care and Management 2	3	2-2
10-806-178	<u>Life Science Chemistry</u>	5	4-3
Semester Total		16	

Summer Session		Credits	Hrs/week Lec-Lab
10-091-158	Internship (8 weeks/288 hours minimum)	4	40

SECOND YEAR

First Semester		Credits	Hrs/week Lec-Lab
10-091-108	Animal Disease 2	2	2-0
10-091-124	Veterinary Clinical Pathology 2	3	2-3
10-091-127	Surgical Nursing 1	3	2-3
10-091-128	Animal Nursing 1	2	1-3
10-091-132	Veterinary Office Procedures 2	1	0-2
10-091-140	Animal Anatomy and Physiology 1	4	2-4
10-801-197	<u>Technical Reporting</u>	3	3-0
Semester Total		18	

Second Semester		Credits	Hrs/week Lec-Lab
10-091-110	Pharmacology 2	2	1-2
10-091-121	Veterinary Clinical Pathology 3	3	1-4
10-091-122	Advanced Topics in Clinical Pathology	1	1-0
10-091-152	Surgical Nursing 2	2	1-3
10-091-153	Diagnostic Imaging	3	1-4
10-809-197	Contemporary American Society	3	3-0
10-809-199	<u>Psychology of Human Relations</u>	3	3-0
Semester Total		17	

Recommended Additional Courses

10-091-114	Animal Behavior	2 credits
10-091-117	Exotic Animal Husbandry	2 credits
10-091-129	Clinical Rotation	2 credits

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

Program Courses

10-091-105 Occupational Preparation 1 credit
 Acquaints new students with the general competencies necessary to be employed as veterinary and laboratory animal technicians. Addresses the student's personal safety, health and stress management. Discusses memberships in professional organizations, certification, licensing, and internship preparation. Briefly discuss animal loss and bereavement.

10-091-107 Animal Disease 1 2 credits
 Covers etiology, symptoms, transmission, diagnosis, prevention and control of diseases that are transmissible from animals to humans as well as animals to animals. Reporting requirements and handling of diagnostic samples involving high-exposure diseases are also discussed. Prerequisite: 10-091-170.

10-091-108 Animal Disease 2 2 credits
 Covers etiology, symptoms, transmission, diagnosis, prevention and control of common diseases in a wide variety of animal species. Toxic plants and other substances, as well as reporting and monitoring of federally regulated diseases will also be discussed. Prerequisites: 10-091-107 and completion of or concurrent enrollment in 10-091-171 and 10-091-123.

10-091-109 Pharmacology 1 2 credits
 Introduction to drugs and other substances used in veterinary medicine. Emphasizes drug usage, client education, measurement, administration, and safe storage of antiparasitics, antiinflammatories, 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 Clinical Pathology 1 credit
 Current topics and advanced diagnostic procedures in clinical pathology. Prerequisites: 10-091-124 and completion of or concurrent enrollment in 10-091-121.

10-091-123 Laboratory Animal Science 1 2 credits
 Includes the history of laboratory animal technology and laboratory animal uses. Emphasizes the Animal Welfare Act and other regulations pertaining to the care of laboratory animals. Covers laboratory animal husbandry in depth as students provide care and treatment for a colony of laboratory animals. Prerequisites: completion of or concurrent enrollment in 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 & Management 2, with emphasis on large animal anesthetic techniques, surgical preparation and monitoring. Prerequisites: 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. Prerequisite: 10-806-105 or equivalent and completion of or concurrent enrollment in 10-091-171.

10-091-152 Surgical Nursing 2 2 credits
 Focuses on the continuation of basic surgical nursing and anesthesia skills. Also covers basic dental prophylaxis, dental radiography and cardiopulmonary resuscitation. Prerequisite: 10-091-127.

10-091-153 Diagnostic Imaging 3 credits
 Explores concepts in veterinary radiology, electrocardiography, ultrasound, endoscopy, and other special imaging procedures and technologies. Prerequisites: 10-091-127 and 10-091-140.

10-091-158 Internship 4 credits
 Internship (work experience) is a very important phase of practical training for students enrolled in the program. It generally follows the second semester of classwork in the college summer recess and is conducted during a period of eight weeks (or 320 hours). The student's work is supervised by assigned instructors. Prerequisite: completion of all first-year program courses.

10-091-170 Veterinary Medical Terminology 2 credits
 Teaches acceptable veterinary medical terminology for common clinically recognizable diseases, operations, systems and procedures, as well as common medical signs, abbreviations and colloquial vocabulary.

10-091-171 Animal Care and Management 1 3 credits
 Focuses on handling and husbandry of the animals most commonly seen in veterinary medicine. Includes animal behavior, nutrition and healthcare. Prerequisites: completion or concurrent enrollment in 10-091-170, 10-806-105 and 10-091-105.

10-091-172 Animal Care and Management 2 3 credits
 Focuses on handling, medical nursing and disease processes of the animals most commonly seen in veterinary medicine. Prerequisites: 10-091-170, 10-091-171 and 10-091-105.

Career Potential:

- **Veterinary Technician**
- **Laboratory Animal Technician**

Technicians are usually employed by: small/companion, large animal/equine, mixed animal or exotic animal practices or humane societies. Also, can help with care and use of animals in research environments.

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

- **Hospital Managers**
- **Facility Managers**
- **Pet Food Company Representative**
- **Drug Company Representative**

More detailed and updated information on this program may be available at: madisoncollege.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. 09/11

Architectural Technology

Program Number: 10-614-1

Associate in Applied Science Degree

Applied Engineering Technologies Program Cluster

Center for Agriscience & Technologies

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.

Unique Requirements for Admission

High school course recommendations: We strongly recommend that students take the math sequence of Algebra 1 and Algebra 2 to best prepare them for this program. In addition, a high school physical science course is highly recommended. Students must earn a 2.0 (C) or better in these high school courses. Contact the Architectural Technician academic advisor at (608) 246-6232 for pre-registration advising.

The Architectural Technician 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.

Unique Requirements for Graduation

Graduation requirements: 68 credits and a GPA of 2.0 (C) or above; average of 2.0 (C) or above required to occupational specific courses.

Program Courses

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

10-614-112 Architectural Graphics 2/Studio 3 credits
Small-scale design projects will address the development of design skills. Topics covered include programming, site analysis, building materials, and building code issues will be studied for residential and commercial projects. Prerequisites: 10-614-111 and 10-614-113.

Curriculum

The courses listed below outline the requirements for graduation for students entering this program in the 2011-2012 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		Credits	Hrs/week	
First Semester			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
10-614-140	Architectural Print Interpretation	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		Credits	Hrs/week	
			Lec	Lab
10-614-112	Architectural Graphics 2/Studio	3	1	4
10-614-115	Intro to Revit	3	2	2
10-614-118	Design Communications	2	1	2
10-804-116	College Technical Math 2	4	4	0
10-806-154	General Physics 1	4	3	2
	Elective	2	E	
Semester Total		18		

SECOND YEAR

First Semester		Credits	Hrs/week	
			Lec	Lab
10-614-155	Advanced Revit	2	1	2
10-614-123	Electrical and Mechanical Systems	4	4	0
10-614-154	Site Design	3	2	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
	Elective	2	E	
Semester Total		19		

Second Semester		Credits	Hrs/week	
			Lec	Lab
10-614-132	Building Estimating	2	2	0
10-614-135	Building Codes	2	2	0
10-614-142	Architectural Detailing	2	1	2
10-614-145	Architectural Design Studio	4	2	4
10-801-197	Technical Reporting	3	3	0
10-809-166	Intro to Ethics: Theory & Application	3	3	0
Semester Total		16		

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 prerequisites. 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

10-614-100	Introduction to Architecture	3 credits
10-614-101	Architectural Theory 1	3 credits
10-614-102	Architectural History	3 credits
10-614-114	CAD-Intermediate	2 credits
10-614-150	Introduction to Specifications	2 credits

Program Courses (Continued)

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. Corequisite: 10-614-111 or instructor consent.

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.

10-614-123 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 Wisconsin Commercial 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. Prerequisites: 10-614-111 and 10-614-121; or consent of instructor.

10-614-140 Architectural Print Interpretation 2 credits
This course provides the student with the basic fundamentals of reading and interpretation of construction documents for residential and light commercial construction. Emphasis will be placed on real world construction documents and their application. Students will learn how to read actual industry prints, interpret code requirements and study common construction materials. Corequisite: 10-614-111.

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: Second year standing, 10-614-178 and concurrent enrollment in 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.

10-614-154 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.

Career Potential:

- Architectural Technician
- Building Sales Person
- Building Mechanical Technician
- 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

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. 06/11

Architectural Studies Transfer Program

Program Number: 10-614-1

Associate in Applied Science Degree

Applied Engineer Technologies Cluster

Center for Agriscience & Technologies

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 could 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 the Architectural Technician academic advisor at 608/246-6232 or faculty advisor at 608/246-6746.

Admission Requirement

2 years of high school algebra, 1 year of high school chemistry or physics, or their equivalent, all with a grade of 2.5 (BC) or better.

Unique Requirements for Completion

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

Curriculum

FIRST YEAR

First Semester		Credits	Hrs/week Lec-Lab
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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
20-801-201	English 1	3	3-0
20-804-212	College Algebra	3	3-0
10-614-100	*Introduction to Architecture (Elective).....	3	1-4
Semester Total		18	

Second Semester

10-614-112	Architectural Graphics 2/Studio.....	3	1-4
10-614-115	Intro to Revit	2	1-3
10-614-118	Design Communications.....	2	1-2
20-801-202	English 2	3	3-0
20-804-213	Trigonometry.....	3	3-0
20-809-231	Introduction to Psychology	3	3-0
10-614-101	*Architectural Theory 1 (Elective).....	3	3-0
Semester Total		19	

SECOND YEAR

First Semester

10-614-155	Advanced Revit.....	2	1-2
10-614-123	Electrical and Mechanical Systems.....	4	4-0
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
20-809-203	**Introduction to Sociology	3	3-0
Semester Total		17	

Second Semester

10-614-132	Building Estimating	2	2-0
10-614-135	Building Codes.....	2	2-0
10-614-142	Architectural Detailing.....	2	1-2
10-614-145	Architectural Design Studio	4	2-4
20-806-221	General College Physics 1	5	3-2
20-809-211	Macroeconomics.....	3	3-0
Semester Total		17	

Total Credits **71**

* Other electives can be recommended. See your faculty advisor for course recommendations.

** See Cultural Diversity options on next page.

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 Comp. 1)	General Studies
801-197 (Technical Reporting)	801-202 (English Comp. 2)	English 102
809-195 (Economics)	809-211 (Macroeconomics)	Economics 104 (Social Science)
809-197 (Cont. American Society)	809-203 (Intro to Sociology)	Sociology 101 (Social Science)
809-199 (Psych. Of Human Relations)	809-231 (Intro. Psychology)	Psychology 202 (Social Science)
806-153 (Technical Physics)	806-221 (Gen. 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.

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. Prerequisite: Architectural Graphics 1, 10-614-111; Introduction to Architecture 10-614-100; and English Composition 20-801-201 or consent of instructor.	
10-614-102 Architectural History	
A general overview course that introduces the student to developments in the history, theory, and cultural influence of architecture from antiquity to the present. Prerequisite: 614-100 Introduction to Architecture, or consent of instructor. Prerequisite: 10-614-100 Intro Architecture 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/Studio	3 Credits
Small-scale design projects will address the development of design skills. Topics covered include programming, site analysis, building materials, and building code issues will be studied for residential and commercial projects. Prerequisite: Architectural Graphics 1, 10-614-111 and 10-614-113.	
10-614-113 Introduction to CAD-Arch	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.	

Courses (continued)

10-614-115 Introduction to Revit 2 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 model. Prerequisite: Intro to CAD-Architectural, 10-614-113 and Architectural Graphics 1, 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: Architectural Graphics, 10-614-111.

10-614-121 Construction Materials

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.

10-614-123 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 Wisconsin Commercial Building Code and its impact on these systems. Guest speakers and a small student designed project will augment the course. Prerequisite: Architectural Graphics 2/Studio, 10-614-112.

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 takeoffs. Prerequisite: 20-804-212.

10-614-135 Building Codes 2 Credits

Emphasis will be placed on the study of the Wisconsin Commercial Building Code. The student will become familiar with using the code and will acquire a general knowledge of codes, standards and federal regulations. Prerequisite: Architectural Graphics 1, 10-614-111 and Construction Materials 1, 10-614-121.

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: Architectural Graphics 1, 10-614-112 and College Algebra, 20-804-212.

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: College Algebra, 20-804-212.

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. Prerequisite: 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. Prerequisite: College Algebra, 20-804-212.

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.

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. 10/10

General studies course descriptions available on our website: madisoncollege.org

The above information is provided solely for informational purposes. MATC reserves the right to make changes in curricula and rules whenever such changes are deemed necessary.

Civil Engineering Technology

Program Number: 10-607-1

Associate in Applied Science Degree

Applied Engineering Technologies Program Cluster

Center for Agriscience and Technologies

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.

Unique Requirements for Admission

High school course recommendations: We strongly recommend that students take the math sequence of Algebra 1 and Algebra 2 to best prepare them for this program. In addition, a high school physical science course is highly recommended. Students must earn a 2.0 (C) or better in the high school courses. Contact the Civil Engineering academic advisor at (608) 246-6232 for pre-registration advising.

The Civil Engineering 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 is done based on test results. Testing will be required prior to admission.

Curriculum

The courses listed below outline the requirements for graduation for students entering this program in the 2011-2012 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

		Credits	Hrs/week Lec-Lab
First Semester			
10-103-123	Windows 7	1	0.75-2.25
10-103-137	Word-Beginning	1	2.25-.75
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	2.75-.75
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

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.



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. Corequisites: 10-607-156 and 10-103-135 or 10-103-124.

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. Corequisites: 10-804-114, 10-607-120 and 10-103-135 or 10-103-124.

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. Corequisites: 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. Corequisite: 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.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. 03/11

Electrical Engineering Technology

Associate in Applied Science Degree

Applied Engineering Technologies Program Cluster

Center for Agriscience and Technologies

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.

Unique Requirements for Admission:

Students must earn a grade of C or better in high school courses Algebra 1, Algebra 2, Chemistry and Physics. (Equivalent courses will be considered.)

The Electrical Engineering 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 mathematics is done based on test results. Applicants can receive advanced standing for Applied Electronics Math 1 by scoring a 46 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.org (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 graduation for students entering this program in the 2011-2012 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

		Credits	Hrs/week Lec-Lab
First Semester			
10-605-112	AC-DC Electronics 1.....	3	2-3
10-605-113	Analog Circuit Techniques.....	3	2-3
10-605-118	Digital Circuit Techniques.....	3	2-3
10-801-195	Written Communication.....	3	3-0
10-605-172	<u>Applied Electronics Mathematics 2.....</u>	<u>2</u>	<u>3-3</u>
Semester Total		14	

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)
10-809-199	<u>Psychology of Human Relations.....</u>	<u>3</u>	<u>3-0</u>
Semester Total		18	

SECOND YEAR

First Semester

10-605-131 ¹⁻³	Technical Calculus 1.....	4	3-2
10-605-176 ¹	Microcontrollers.....	3	2-3
10-662-112 ¹	AC/DC Electronics 3.....	3	2-3
10-801-197	Technical Reporting.....	3	3-0
10-806-143	College Physics 1.....	3	2-2
10-809-195	<u>Economics.....</u>	<u>3</u>	<u>3-0</u>
Semester Total		19	

Second Semester

10-605-132 ²⁻³	Technical Calculus 2.....	4	3-2
10-605-143 ²	Motors and Control Systems.....	3	2-3
10-605-150 ²	Electronic Data Transmission.....	3	2-3
10-605-178 ²	Networks, Interfacing & Programming.....	3	2-3
10-662-124 ²	Advanced Circuit Analysis.....	3	2-3
20-809-203	<u>Intro to Sociology.....</u>	<u>3</u>	<u>3-0</u>
Semester Total		19	

Alternate Math Selections³

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

¹Offered in Fall Semester only

²Offered in Spring Semester only

³In 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 Electronics 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). 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 Electrical Engineering Technology

Program Courses

10-605-112 AC-DC Electronics 1 3 credits
Course 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: Concurrent enrollment in 10-605-171 or satisfactory mathematics placement score on COMPASS test.

10-605-113 Analog Circuit Techniques 3 credits
Introductory electronic course covering devices, circuits and applications. Uses analog electronics devices — diodes, (rectifier, zener, LED), field effect and bipolar transistors and operational amplifiers to learn basic theory and use of test equipment (DMM, oscilloscope, function generators) in testing and troubleshooting. Lab procedures emphasize use of documentation (schematics, layout diagrams, parts lists, data sheets) and troubleshooting procedures. Prerequisite: satisfactory mathematics placement score on COMPASS test, or concurrent enrollment in 10-605-112.

10-605-114 AC-DC Electronics 2 (transfer) 3 credits
Continuation of 10-605-112. 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. A formal lab reporting required. Prerequisite: 10-605-112 and satisfactory mathematics placement score on COMPASS test.

10-605-115 Analog Circuit Principles 3 credits
Continuation of 10-605-113. Covers theory and application of field effect and bipolar transistor amplifiers, oscillators and operational amplifiers. Emphasis on circuits including gain, impedance and frequency response. Lab procedures emphasize increased proficiency with electronic test equipment. Prerequisite: 10-605-113; Corequisite: 10-605-114.

10-605-118 Digital Circuit Techniques 3 credits
Covers schematics, component identification, engineering notation, basic gates, IC numbering systems, through hole and surface mount footprint identification, IPC-610-D* through hole and surface mount (SMT) soldering, lead free RoHS soldering and rework training, IPC-610-D* and RoHS rework criteria, dual source de-soldering training, surface mount fine pitch drag soldering training, and electronic assembly training.

**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
Course 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 Karnaugh map minimization techniques and Field Programmable Gate Arrays (FPGA). Lab work includes individual project design, layout, construction, testing and documentation. Prerequisites: 10-605-112 and 10-605-118.

10-605-131 Technical Calculus 1 4 credits
This is an introductory course that examines analytic geometry, binomial series, differentiation of algebraic, exponential, logarithmic 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.

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 Systems 3 credits
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.

10-605-150 Electronic Data Transmission 3 credits
Covers theory, systems and basic circuits for radio frequency and digital communications systems. Includes transmission, reception, encoding, decoding and information retrieval. Circuits include oscillators, filters, AM, FM, SSB and pulse modulation, PLLs, codecs, transmission lines, and interfacing. Prerequisites: 10-605-113, 10-605-114, and 10-605-119.

10-605-171 Applied Electronics Mathematics 1 2 credits
First of a two-part applied electronics mathematics sequence. Focuses on math concepts most needed by technicians. Closely tied to the other first-semester electronics courses. Laboratory sessions focus on math associated with electronic applications. Course is 8 weeks long, offered only in the 1st half of each semester. Prerequisite: satisfactory score on the math portion of the COMPASS test. Test out options are available.

10-605-172 Applied Electronics Mathematics 2 2 credits
This course continues to develop the mathematics skills needed by technicians to be successful in their field. Closely tied to the other second-semester electronics courses. Laboratory sessions continue to integrate math with electronic applications. Course is 8 weeks long, offered only in the 2nd half of each semester. Concurrent registration in 10-605-112 and prerequisite of 10-605-171 or equivalent competency level. Test out options are available.

10-605-173 Embedded Programming 3 credits
Introduction to the fundamentals of electronic computer language, systems and structure. Embedded processor hardware will be covered 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.

10-605-176 Microcontrollers 3 credits
Course covers a study of 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: 10-605-173 and 10-605-119.

10-605-178 Networks, Interfacing and Programming 3 credits
Networking fundamentals and implementation with an emphasis on Linux. Course will explore 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). Prerequisites: 10-605-173 and concurrent registration in 10-605-176 or 10-605-123 and concurrent enrollment in 10-605-152.

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. Prerequisite: 10-605-114.

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 transistors 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: Courses from the Liberal Studies Program-College Transfer Option (800-series) can be used in lieu of required courses.

Recommended Elective:
20-805-270 AC/DC Circuit Techniques and Principles 3 credits

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

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Rev. 06/11

Electronic Assembler Certificate

Program Number: 90-605-1

Certificate

Applied Engineering Technologies Program Cluster

Center for Agriscience and Technologies

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.

Unique Requirements for Admission

High school course recommendations: We strongly recommend that students take the math sequence of Algebra 1 and Algebra 2 to best prepare them for this program. In addition, a high school physical science course is highly recommended.

Certificate Application Process

To apply, see: Apply Online (on the Madison College website). [Create an ApplyWeb account](#) and follow the [instructions](#) to complete the [Online Certificate Application](#) before the [application deadline](#). Submit the \$15 non-refundable fee (payable by credit card, debit card or electronic check) with your application. Applicants may submit more than one certificate application per term using the Online Certificate Application; the same fees apply for each additional application.

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

10-605-113 Analog Circuit Techniques 3 credits

Introductory electronic course covering devices, circuits and applications. Uses analog electronics devices — diodes, (rectifier, zener, LED), field effect and bipolar transistors and operational amplifiers to learn basic theory and use of test equipment (DMM, oscilloscope, function generators) in testing and troubleshooting. Lab procedures emphasize use of documentation (schematics, layout diagrams, parts lists, data sheets) and troubleshooting procedures. Prerequisite: satisfactory mathematics placement score on COMPASS test,

10-605-118 Digital Circuit Techniques 3 credits

Course covers schematic digital component identification, PCB component identification, Engineering Notation, Basic Gates, IC Numbering Systems, Through hole and surface mount footprint identification, IPC-610-D Hole Through and Surface Mount (SMT) soldering and rework training, Lead Free RoHS soldering and rework training, IPC-610-D* and RoHS rework criteria, dual source de-soldering training, surface mount fine pitch drag soldering training, and electronic assembly training.

**IPC certification is not automatic upon course completion. IPC certification is awarded separately from the academic credits.*

Curriculum

OPTION 1: SINGLE SEMESTER

First Semester	Credits	Hrs/week Lec-Lab
10-605-113 Analog Circuit Techniques.....	3	2-3
10-605-118 Digital Circuit Techniques.....	3	2-3
Certificate Total	6	

OPTION 2: TWO SEMESTERS

First Semester	Credits	Hrs/week Lec-Lab
10-605-113 Analog Circuit Techniques.....	3	2-3
OR		
10-605-118 Digital Circuit Techniques.....	3	2-3
Semester Total	3	

Second Semester

10-605-118 Digital Circuit Techniques.....	3	2-3
OR		
10-605-113 Analog Circuit Techniques.....	3	2-3
Semester Total	3	
Certificate Total	6	

Career Potential:

- Electronic Assembler
- Electronic Installer
- Cabling Technician
- Wiring Technician

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

- Electronic Maintenance Technician
- Electronic Test Technician
- Electronics Technician
- Field Service Technician
- Computer Field Service Supervisor
- Electronics Production Supervisor
- Electronics Maintenance Supervisor
- Electrical Engineer

The courses in the Electronic Assembler Certificate are a subset of the two year Associate of Applied Sciences (AAS) degree programs in Electrical Engineering Technology and Electronics Technology, counting towards graduation in both programs.

Students who attain this certificate are employable while continuing their education toward a full AAS degree.

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

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Rev: 10/10

Electronics

Associate in Applied Science Degree

Applied Engineering Technologies Program Cluster

Center for Agriscience and Technologies

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.

Unique Requirements for Admission

High school course recommendations: We strongly recommend that students take the math sequence of Algebra 1 and Algebra 2 to best prepare them for this program. In addition, a high school physical science course is highly recommended. Students must earn a 2.0 (C) or better in the high school courses.

The COMPASS test is required for all applicants. Advisement and course placement in English and mathematics is done based on COMPASS test results. Applicants can receive advanced standing for Applied Electronics Math 1 by scoring a 46 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.org (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 graduation for students entering this program in the 2011-2012 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

		Credits	Hrs/week Lec-Lab
First Semester			
10-605-112	AC-DC Electronics 1.....	3	2-3
10-605-113	Analog Circuit Techniques	3	2-3
10-605-118	Digital Circuit Techniques.....	3	2-3
10-605-171	Applied Electronics Mathematics 1	2	3-3
10-605-172	Applied Electronics Mathematics 2	2	3-3
10-801-195	Written Communication	3	3-0
Semester Total		16	

Second Semester

10-605-114	AC-DC Electronics 2.....	3	2-3
10-605-115	Analog Circuit Principles	3	2-3
10-605-119	Digital Circuit Principles.....	3	2-3
10-605-123	Embedded Device Concepts.....	3	2-3
Semester Total		12	

SECOND YEAR

First Semester

10-605-116*	Advanced Analog Circuits	3	2-3
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
10-809-195	Economics	3	3-0
	Elective*	3	3-2
Semester Total		18	

Second Semester*

10-605-143**	Motors and Control Systems	3	2-3
10-605-150**	Electronic Data Transmission.....	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
20-605-252	Introduction to Computer Engineering	3 credits
20-605-270	AC/DC Circuit Principles & 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 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.



Program Courses

10-605-112 AC-DC Electronics 1 3 credits
 Course 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: satisfactory mathematics placement score on COMPASS test.

10-605-113 Analog Circuit Techniques 3 credits
 Introductory electronic course covering devices, circuits and applications. Uses analog electronics devices — diodes, (rectifier, zener, LED), field effect and bipolar transistors and operational amplifiers to learn basic theory and use of test equipment (DMM, oscilloscope, function generators) in testing and troubleshooting. Lab procedures emphasize use of documentation (schematics, layout diagrams, parts lists, data sheets) and troubleshooting procedures. Prerequisite: Satisfactory mathematics placement score on COMPASS test, or concurrent enrollment in 10-605-112.

10-605-114 AC-DC Electronics 2 3 credits
 Continuation of 10-605-112. 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. A formal lab reporting required. Prerequisite: 10-605-112 and 10-605-171.

10-605-115 Analog Circuit Principles 3 credits
 Continuation of 10-605-113. Covers theory and application of field effect and bipolar transistor amplifiers, operational amplifiers and oscillators. Emphasis on circuits including gain, impedance and frequency response. Lab procedures emphasize increased proficiency with electronic test equipment. Prerequisites: 10-605-113 and 10-605-114.

10-605-116 Advanced Analog Circuits 3 credits
 Project based course centering on analog circuit applications. Emphasizes hands-on skills, assembly, testing and troubleshooting, documentation, working in groups and presentations. Prerequisites: 10-605-114, 10-605-115 and 10-605-118.

10-605-118 Digital Circuit Techniques 3 credits
 Covers schematics, component identification, engineering notation, basic gates, IC numbering systems, through hole and surface mount footprint identification, IPC-610-D* through hole and surface mount (SMT) soldering, lead free RoHS soldering and rework training, IPC-610-D* and RoHS rework criteria, dual source de-soldering training, surface mount fine pitch drag soldering training, and electronic assembly training.

**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
 Course 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 Karnaugh map minimization techniques as well as Field Programmable Gate Arrays (FPGA). Lab work includes individual project design, layout, construction, testing and documentation. Prerequisite: 10-605-112 and 10-605-118.

10-605-123 Embedded Device Concepts 3 credits
 Programmed devices covers with a hardware emphasis. Covers algorithms, event sequencing, flow diagrams, visual programming and Embedded C programming. Compiling, downloading embedded code into a target hardware and basic troubleshooting of simple embedded programs in C. Also covers variables, memory management, conditionals, mathematical operations, functions and loops. Emphasis on troubleshooting. Prerequisite: 10-605-118.

10-605-143 Motors and Control Systems 3 credits
 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. Prerequisite: 10-605-115, 10-605-173 and 10-605-176.

10-605-150 Electronic Data Transmission 3 credits
 Covers theory, systems and basic circuits for radio frequency and digital communications systems. Includes transmission, reception, encoding, decoding and information retrieval. Circuits include oscillators, filters, AM, FM, SSB and pulse modulation, PLLs, codecs, transmission lines, and interfacing. Prerequisites: 10-605-113, 10-605-114 and 10-605-119.

10-605-151 Instrumentation and Troubleshooting 3 credits
 Covers the approach, methodology and techniques in troubleshooting electronic circuits and systems as well as the calibration, uses and limitations of common electronic test equipment. Prerequisites: 10-605-112, 10-605-113, 10-605-114, 10-605-115, 190-605-118 and 10-605-119.

10-605-152 Digital Systems Analysis 3 credits
 Project based course focusing on digital circuits, embedded controllers and interfacing. Emphasizes hands-on skills, assembly, testing and troubleshooting, documentation, working in groups and presentations. Prerequisites: 10-605-118, 10-605-119, and 10-605-123.

10-605-171 Applied Electronics Mathematics 1 2 credits
 First of a two-part applied electronics mathematics sequence. Focuses on math concepts most needed by technicians. Closely tied to the other first-semester electronics courses. Laboratory sessions focus on math associated with electronic applications. Course is 8 weeks long offered only in the 1st half of each semester. Prerequisite: satisfactory score on the math portion of the COMPASS test.

10-605-172 Applied Electronics Mathematics 2 2 credits
 This course continues to develop the mathematics skills needed by technicians to be successful in their field. Closely tied to the other second-semester electronics courses. Laboratory sessions continue to integrate math with electronic applications. Course is 8 weeks long offered only in the 2nd half of each semester. Prerequisite: 10-605-171 or equivalent competency level.

10-605-178 Networks, Interfacing and Programming 3 credits
 Networking fundamentals and implementation with an emphasis on Linux. Course will explore 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). Prerequisites: 10-605-123 and 10-605-152 or 10-605-173 and 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: Courses from the Liberal Studies Program-College Transfer Option (800-series) can be used in lieu of required courses.

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. 08/11

Mechanical Design Technology

Program Number: 10-606-1

Associate in Applied Science Degree

Applied Engineering Technologies Program Cluster

Center for Agriscience and Technologies

Program offered at Madison and Watertown Campuses

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.

Unique Requirements for Admission

It is strongly recommend that students take the high school math sequence of Algebra 1 and Algebra 2. A high school physical science course is highly recommended. Student must earn a 2.0 (C) or better in these high school courses.

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. Corequisites: 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 graduation for students entering this program in the 2011-2012 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 (myMadisonCollege) account for specific graduation requirements. Program requirements are subject to change.

FIRST YEAR		Credits	Hrs/week Lec-Lab
First Semester			
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.....	3	2-2
10-606-163	Manufacturing Analysis.....	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.



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. Corequisites: 10-606-100 and 10-606-130.

10-606-125 Plastics 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. Corequisites: 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/Corequisite: 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. Corequisite: 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 Manufacturing Analysis 2 credits
 An introduction to manufacturing engineering technology processes, applications, and knowledge, as it relates to the Mechanical Design field. Areas of study include "Manufacturing Topics of Today", "Project Management", and "The Product Development Process" in preparation for the Engineering Technology Applications course. Prerequisite: third semester standing.

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 Manufacturing Analysis 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.org. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

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Rev. 10/10

Renewable Energy Certificate

Program Number: 90-480-2

Certificate

Applied Engineering Program Cluster

Center for Agriscience and Technologies

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. Students may choose from online and face-to-face courses in several areas of emphasis including: transportation, photovoltaics, solar thermal, wind, or biomass.

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 Renewable Energy 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 courses are developed and taught by renewable energy experts who are members of the Consortium for Education in Renewable Energy Technology (CERET). Through this collaborative relationship, Madison College is able to offer students the opportunity to enroll in cutting-edge courses taught from locations across the United States. Face-to-face courses are delivered in a full-day intensive format often taught during weekends, winter break, spring break and/or summer sessions.

Certificate Application Process

To apply, see: Apply Online (on the Madison College website). [Create an ApplyWeb account](#) and follow the [instructions](#) to complete the [Online Certificate Application](#) before the [application deadline](#). Submit the \$15 non-refundable fee (payable by credit card, debit card or electronic check) with your application. Applicants may submit more than one certificate application per term using the Online Certificate Application; the same fees apply for each additional application.

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

10-480-100 Solar & Other Renewable Energy Systems (online) 4 credits
The student will learn and demonstrate the principles of energy efficient and solar design analysis and construction. Students will analyze the solar energy systems and will calculate solar savings fractions, backup heat needs, and economic analysis. The student will investigate the technologies and applications of other non-polluting and renewable forms of energy including wind power, photovoltaic and alternative transportation vehicles.

10-481-110 Energy Management (online) 4 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

	Credits	Hrs/week Lec-Lab
<i>Choose a minimum of 3 credits from among these online courses:</i>		
10-480-100 Solar & Other Renewable Energy Systems	4	4-0
10-481-110 Energy Management.....	4	4-0
20-623-290 Renewable Energy for International Development.....	3	3-0
Total	at least 3 credits*	

<i>Plus at least 3 credits from among these online courses:</i>		
10-482-130 Solar Electric Fundamentals and Grid-Direct Design .2	2	2-0
10-482-134 Grid-Direct Solar Electric Systems and Code Criteria .2	2	2-0
10-482-136 Battery-Based Design.....	2	2-0
10-484-160 Introduction to Biomass Energy	3	3-0
Total	at least 3 credits*	

<i>Plus at least 1 credit from among these face-to-face courses:</i>		
10-482-100 PV Design and installation	2	2-0
10-482-131 Basic Photovoltaics and Site Assessment.....	1	1-0
10-482-132 Intermediate Photovoltaics.....	1	1-0
10-482-133 Advanced Photovoltaics Installation	1	1-0
10-482-135 Advanced Photovoltaic Elective.....	1-3	1-3-0
10-482-151 Wind Site Assessor Training	1	1-0
10-482-152 Wind Systems Repair/Maintenance.....	2	2-0
10-482-153 Introduction to Wind Turbine Installation	1	1-0
10-482-154 Advanced Wind Electives	1-3	1-3-0
10-483-110 Solar Water Installation	1	1-0
10-483-141 Solar Domestic Hot Water and Site Assessment	1	1-0
10-483-143 Solar Thermal Electives.....	1-3	1-3-0
10-484-121 Introduction to Ethanol Fuel.....	1	1-0
10-484-123 Intro to Hybrid Electric Vehicles.....	1	1-0
10-484-130 Introduction to Biodiesel Fuel	1	1-0
10-484-161 Anaerobic Digester Technology.....	1	1-0
10-484-162 Wood Combustion Heating Systems.....	1	1-0
Total	up to 5 credits, a maximum of 4 MREA credits*	

*Students must complete a total of 12 credits to earn the certificate

10-482-100 PV Design and Installation 2 credits
This workshop is designed to offer students a higher level of lecture and hands-on learning that will prepare them for field installations and other advanced workshops. Students will learn how to correctly size and select PV system components. Participants will identify and interpret NEC codes that pertain to the installations. Our outdoor training roof enables our instructors to teach safety, system design and layout, component selection, wiring techniques, installation techniques, and troubleshooting.

10-482-130 Solar Electric Fundamentals and Grid-Direct Design (online) 2 credits
This course will provide an overview of the three basic PV system applications, primarily focusing on grid-direct systems. The goal of the course is to create a fundamental understanding of the core concepts necessary to work with all PV systems, including: system components, site analysis, PV module criteria, mounting solutions, safety, and commissioning. The course will also cover the basics of sizing a residential grid-direct system, wire sizing, over current protection, and grounding.

10-482-131 Basic Photovoltaics and Site Assessment 1 credit
Students will learn the basics of photovoltaic system components and the steps necessary to performing a site audit prior to an installation of a PV system. Focus is put on the defining the solar window, system siting and sizing, load analysis and energy efficiency.

10-482-132 Intermediate Photovoltaics 1 credit
This course is designed for students to get a basic understanding of PV system design and installation principles. Hands-on activities will introduce basic installation techniques. This class is recommended to students planning to take advanced PV workshops. Topics include batteries, wiring configurations, system diagramming, installation techniques and system maintenance.

Program Courses (continued)

10-482-133 Advanced Photovoltaics Installation 1 credit
This course will involve students in the hands-on installation of a utility intertie PV system with battery back up on a dual axis mast tracker. Prior knowledge of PV systems and components is required. This class is designed for individuals and professionals who are planning on installing PV systems. Topics include safety, system design and layout, National Electric Code, component selection, wiring and installation techniques.

10-482-134 Grid-Direct Solar Electric Systems and Code Criteria 2 credits
This workshop will build upon the core concepts from 10-482-130 and continue to emphasize grid-direct systems. The course will focus significantly on the National Electrical Code (NEC), including grid interface calculations, grounding considerations, and advanced component specification. Students will learn to evaluate system performance under various operating conditions. Commercial system design elements, such as inter-row shading, inverter selection, and data monitoring solutions will also be covered.

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.

10-482-136 Battery-Based Design 2 credits
Apply the National Electrical Code (NEC) to battery-based systems to ensure safe, code-compliant design and installation. Students will work through step-by-step design process for battery-based applications, including stand-alone (off-grid), grid-tied with battery back-up, and hybrid systems. Topics such as load analysis, component selection, battery safety, voltage drop, and commissioning procedures will be presented. In addition to sizing exercises and calculations, students will explore additional design considerations unique to battery-based systems.

10-482-151 Wind Site Assessment 1 credit
Students will learn how to evaluate a site's wind energy potential, determine wind speeds at proposed heights, make a load profile for a client's energy needs, determine appropriate tower heights and estimate kWh output for a system based upon wind resources. The course will lead students through the background information required to perform wind site assessments for the Focus on Energy program, other state incentive programs, and for the home or business owner to assess their site. This class will prepare students for the Wind Site Assessor Certification Test administered by the Midwest Renewable Energy Association.

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 Wind Systems Installation 2 credits
Students will install a working wind turbine on a pre-selected site. Mornings will be spent in class lecture on topics of wind energy basics and afternoons will be dedicated to hands-on construction of the wind system. This is a working class, with optional tower climbing.

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.

10-483-110 Solar Water Installation 1 credit
This course is a hands-on workshop that includes both theory and installation practice. Two systems will be installed on a training roof-drainback and pressurized closed-loop systems. This class will qualify students to be on the Focus on Energy Full Service Installer List.

10-483-141 Solar Domestic Hot Water and Space Heating Systems 1 credit

This class provides an overview of solar systems for domestic hot water and space heating applications. These systems can provide in excess of 50 percent of a home's hot water and/or space heating needs, reducing the consumption of costly fossil fuel energy sources. This class includes an introduction to integrated collector/storage, open loop, closed loop, drainback, draindown, and antifreeze hot water systems. Solar hot air heating, in-floor radiant heating, and high mass thermal storage are also covered. Additional topics include choosing a site, system sizing, system components, system design types and basic installation techniques.

10-483-143 Solar Thermal Electives 1-3 credits
These Advanced Solar Thermal Courses from the MREA, SEI, and Madison College can be taken with permission from project administrators.

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.

10-484-123 Intro to Hybrid Electric Vehicles 1 credit
This course will provide a general overview of hybrid electric vehicles. Topics covered will include hybrid propulsion systems, battery chemistry, high voltage safety, regenerative braking, and electric motors and generators.

10-484-130 Introduction to Biodiesel Fuel 1 credit
This course will provide a general overview of biodiesel fuel. Production and quality control of biodiesel fuel will be explored, and students will have the opportunity to synthesize a small scale batch of biodiesel. Topics covered will include transesterification chemistry, separation techniques, ASTM fuel testing, engine performance, and exhaust emissions.

10-484-160 Intro to Biomass Energy (online) 3 credits
This course provides an overview of energy production from biomass resources. The course explores the fundamentals of plant growth, energy yield, economics, production, and processing methods for both herbaceous and woody crops. Technologies covered include combustion, gasification, pyrolysis, fermentation, transesterification, and anaerobic digestion. Value-added bio-refining products are also examined, along with the environmental impacts of biomass energy.

10-484-161 Anaerobic 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.

10-484-162 Wood Combustion Heating Systems 1 credit
Students will learn how to burn wood cleanly and efficiently. The use of wood in residential heating systems is covered with attention given to firebox insulation, primary and secondary combustion air, fuel bed construction, burn zones, baffles and heat/transfer/distribution.

20-623-290 Renewable Energy for International Development (hybrid) 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 biogasifiers).

Career Potential:

- Wind Turbine Technician/Installer
- Solar Hot Water Technician/Installer
- Photovoltaic Technician/Installer
- Anaerobic Digester Technician/Installer
- Biofuel Refinery Operator/Technician
- Building Operator/Technician
- Power And Utility Technician
- Legislative Research Technician
- Energy Manager/Analyst
- Energy Auditor
- Energy Broker/Marketer
- Resource Conservation/Efficiency Manager

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

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Rev. 03/11

Biotechnology Intensive Post-baccalaureate Certificate

Program Number: 90-007-2

Certificate

Biotechnology and Electron Microscopy Program Cluster

Center for Agriscience and Technologies

Program offered at Truax Campus

For information call: (608) 246-6204, (608) 243-4307 or
(800) 322-6282 Ext. 6204 or 4307

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, including human embryonic stem cell lines
- Bioseparations
- Bioinformatics (survey)
- Microarrays (survey)

For more information:

Lisa Seidman, lseidman@madisoncollege.org, (608) 246-6204 or
Jeanette Mowery, jmowery@madisoncollege.org, (608) 243-4307

Unique Requirements for Admission

- Bachelor's degree in a biological science
- Consent of program director
- Two semesters of college chemistry
- Microbiology course with laboratory
- Two semesters of general biology
- Cell biology or genetics course within the last 7 years

Curriculum

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		1-0
10-102-134 Business Organization and Management	2		2-0
Total	15		

Note: the classes need to be taken concurrently.

Certificate Application Process

To apply, see: Apply Online (on the Madison College website). [Create an ApplyWeb account](#) and follow the [instructions](#) to complete the [Online Certificate Application](#) before the [application deadline](#). Submit the \$15 non-refundable fee (payable by credit card, debit card or electronic check) with your application. Applicants may submit more than one certificate application per term using the Online Certificate Application; the same fees apply for each additional application.

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.



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. 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.

**10-007-122 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. Lab included. Prerequisite: 10-007-103, 10-007-104, 10-806-129 or 20-806-201 or 20-806-212, or consent of instructor.

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, including human embryonic stem cell lines, transfection of cultured cells, cloning, monoclonal antibody production, and ELISA assays. Lab included.

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. Lab included.

**10-007-136 Laboratory Math
for Biotechnology 1 credit**

This course 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.

**10-102-134 Business Organization & Management
(Biotechnology section) 2 credits**

This survey course imparts an understanding of the economic and legal environment in which biotechnology companies operate, as well as an understanding of the organization and management of business enterprises.

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.org. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

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Rev. 10/10

Biotechnology Laboratory Technician

Program Number: 10-007-2

Associate in Applied Science Degree

Biotechnology & Electron Microscopy Program Cluster

Center for Agriscience and Technologies

Courses offered at Truax Campus

For information call: (608) 246-6204, (608) 243-4307 or
(800) 322-6282 Ext. 6204 or 4307

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.

Check the Madison College Website or with the center office for the following certificates also available: Bioinformatics Certificate, Biotechnology Post-baccalaureate Certificate, and Biotechnology Intensive Post-baccalaureate Certificate.

Unique Requirements for Admission

Admission requires competence in basic mathematics, science and English usage. Suggested coursework for high school students includes algebra, biology and chemistry. Students who enter without high school chemistry and algebra will be required to take equivalent courses at Madison College. Competency will be assessed with a COMPASS test (required), transcripts and/or personal interviews.

Students must receive a grade of C or higher in all program courses and all science courses.

For more information:

Mary Ellen Kraus, mekraus@madisoncollege.org, (608) 246-6322
or Jeanette Mowery, jmowery@madisoncollege.org, (608) 243-4307

Curriculum

The courses listed below outline the requirements for graduation for students entering this program in the 2011-2012 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
10-007-103	Biotechnology Laboratory Skills for a Regulated Workplace	3	1-6
10-007-108	Hazardous Materials (6 weeks)	1	2-2
10-007-109	Biosafety (6 weeks)	1	2-2
10-007-102	Radioisotopes (6 weeks)	1	2-2
10-007-110	Biotechnology Applications	1	1-0
10-007-115	General Cell Biology	4	3-3
10-007-136	Laboratory Math for Biotechnology	1	0-2
10-806-127	Chemistry 1* OR	4	3-2
20-806-201	General, Organic, and Biological Chemistry*	(5)	(4-2)
Semester Total		16	

Second Semester

10-007-104	Chromatography Techniques	3	1-6
10-007-105	Bioprocess Technology	3	1-6
10-007-111	Biotechnology Career Seminar	1	1-0
10-801-195	Written Communication* OR	3	3-0
20-801-201	English Composition 1*	(3)	(3-0)
10-806-129	Chemistry 2* OR	4	3-2
20-806-216	Chemistry for Biotechnology*	(3)	(2-2)
10-007-174	Applied Microbiology	4	2-4
Semester Total		18	

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
10-801-196	Oral/Interpersonal Communications* OR	3	3-0
20-801-202	English Composition 2*	(3)	(3-0)
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		18	

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.



Program Courses

10-007-102 Radioisotopes 1 credit
Surveys potential hazards and safety procedures associated with radioisotopes. Lab exercises include liquid scintillation counting and autoradiography. Co-requisite: 10-806-127 or 20-806-201.

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. 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. Lab included. Co-requisite: 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. Lab included. 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. Lab included. Co-requisite: 10-806-127 or 20-806-201, 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. Lab included. Co-requisite: 10-806-127 or 20-806-201.

10-007-109 Biosafety 1 credit
Surveys potential hazards and safety procedures associated with biohazards including lab animals and pathogens. Lab included. Co-requisite: 10-806-127 or 20-806-201.

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.

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.

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. Co-requisite: 10-007-136.

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. Lab included.

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. Lab included. Prerequisites: 10-007-103, 10-007-115 and 10-806-129 or 20-806-216 or consent of instructor.

10-007-122 Protein Bioseparations Methods 3 credits
Introduces the general strategies commonly used to purify proteins. Specific methods include determining specific activities for enzymes, extraction of proteins from bacterial cells, salting out, dialysis, ion exchange chromatography and polyacrylamide gel electrophoresis. Lab included. Prerequisites: 10-007-103, 10-007-104 and 10-806-129 or 20-806-216 or consent of instructor.

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, including human embryonic stem cell lines, transfection of cultured cells, cloning, monoclonal antibody production, and ELISA assays. Lab included. Prerequisite: 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. Lab included. Prerequisite: 10-007-113 and 10-007-115, or consent of instructor.

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. Lab included. Prerequisite: 10-007-124 or consent of instructor.

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 Laboratory Math for Biotechnology 1 credit
Course 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. Prerequisite: satisfactory COMPASS Math Placement Test score.

10-007-174 Applied Microbiology 4 credits
This survey course includes the structure, function, ecology, nutrition, physiology, and genetics of microorganisms in industrial, agricultural, food and medical microbiology. It 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**
Continued on back
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.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.

Biotechnology Post-baccalaureate Certificate

Program Number: 90-007-1

Certificate

Biotechnology & Electron Microscopy Program Cluster

Center for Agriscience and Technologies

Courses offered at Madison Campuses

For information call: (608) 246-6204, (608) 243-4307 or
(800) 322-6282 Ext. 6204 or 4307

About the Certificate

The certificate curriculum includes eight courses from the Biotechnology Lab Technician program. Students may elect to take either Cell Culturing, 10-007-123, or Protein Bioseparations Methods, 10-007-122. All other courses in the curriculum, or their equivalent from another college, are required to obtain a certificate. 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.

For more information:

Lisa Seidman, lseidman@madisoncollege.org, (608) 246-6204 or
Jeanette Mowery, jmowery@madisoncollege.org, (608) 243-4307

Unique Requirements for Admission

Prerequisites: 1) a bachelor's degree in a biological science and consent of program director; 2) two semesters of college chemistry; 3) one semester of microbiology with laboratory component; 4) two semesters of general biology and 5) a cell biology or genetics course within the last seven years. Applicants with missing prerequisites may complete those courses at Madison College.

Certificate Application Process

To apply, see: Apply Online (on the Madison College website). [Create an ApplyWeb account](#) and follow the [instructions](#) to complete the [Online Certificate Application](#) before the [application deadline](#). Submit the \$15 non-refundable fee (payable by credit card, debit card or electronic check) with your application. Applicants may submit more than one certificate application per term using the Online Certificate Application; the same fees apply for each additional application.

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

Courses	Hrs/week	
	Credits	Lec-Lab
10-007-103 Biotechnology Laboratory Skills for a Regulated Workplace	3	1-6
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 OR	3	1-6
10-007-123 Cell Culturing	(3)	1-6
10-007-125 Research Methods in Molecular Biology	3	1-6
10-007-121 <u>Applied Biochemistry</u>	3	2-3
Certificate Total	21	



Certificate Courses

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

Covers basic concepts and techniques necessary to work effectively in a biotechnology lab. The importance of quality regulations and standards and the role of the technician in producing quality results is 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.

10-007-121 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.

10-07-122 Protein Bioseparations Methods 3 credits

Introduces the strategies to purify proteins as part of a biotechnology process. Methods include: specific activity assays for enzymes, extraction of proteins from bacterial cells, salting out, dialysis, ion exchange chromatography and polyacrylamide gel electrophoresis. Lab included. Prerequisite: 10-007-103, 10-007-104, 10-806-129 or 20-806-201 or 20-806-212, or consent of instructor.

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. Lab included.

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.

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.org. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

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Electron Microscopy

Program Number: 10-636-1

Associate in Applied Science Degree

Biotechnology and Electron Microscopy Program Cluster

Center for Agriscience and Technologies

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.

Unique Requirements for Admission

It is strongly recommended that students take the math sequence of Algebra 1 and Algebra 2 to best prepare them for this program. In addition, one year each of biology and chemistry is highly recommended. Prior to registration, all students are required to consult with a faculty member. If high school chemistry has not been completed, it is recommended that 10-806-134 General Chemistry, be taken before beginning the program.

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 graduation for students entering this program in the 2011-2012 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 (myMadisonCollege) account for specific graduation requirements. Program requirements are subject to change.

FIRST YEAR

First Semester		Credits	Hrs/week Lec-Lab
10-636-111	Scanning Electron Microscopy	3	2-3
10-636-112	Transmission Electron and Atomic Force Microscopy	4	3-3
10-636-113	EM Image Processing 1	2	1-2
10-636-115	EM Photography & Lab Safety	2	2-0
10-804-118	Intermediate Algebra with Applications OR	3	2-2
20-804-201	Intermediate Algebra	(4)	(4-0)
10-806-134	General Chemistry OR	4	3-2
20-806-201	<u>General Organic and Biological Chemistry</u>	<u>(5)</u>	<u>(4-2)</u>
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	<u>Forces, Fields & Energy</u>	<u>3</u>	<u>2-2</u>
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	Image Analysis	2	1-2
10-636-135	Laboratory and Microscope Maintenance	3	2-2
10-801-197	<u>Technical Reporting</u>	<u>3</u>	<u>3-0</u>
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	<u>Psychology of Human Relations</u>	<u>3</u>	<u>3-0</u>
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.



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 are also 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. Film and principles of 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, embedding, ultramicrotomy and staining methods. Solution preparation and laboratory techniques are also performed. Prerequisite: grade of C or better in both 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 both 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 EM images. Scientific filtering protocols, convolution masks, Fourier transforms, and Gaussian filters are applied in order to produce image for scientific and aesthetic purposes. Included are modules on scientific interpretation, analysis, and output media. This course explores in depth relationships between image quality at the microscope and output to various media. Scientific poster layout and design using Adobe InDesign and slide presentation using PowerPoint are covered. 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 colloidal gold labeling. Includes ultrastructure studies enabling students to identify features encountered in micrographs for interpretation and analysis. Prerequisite: grade of C or better in both 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 both 10-636-121 and 10-636-122 or consent of the instructor.

10-636-133 Image Analysis 2 credits
Involves statistically measured and mathematical transformations of both analog and digital images. Topics include sampling techniques, stereology, three-dimensional reconstruction and analysis, cell or grain-size distribution and aspect-ratio-analysis, Fourier Transform analysis, and spatial filtering of images. Students will develop cross-platform computer skills with programs including: Adobe PhotoShop, NIH Image, ImagePro Plus, and VoxBlast. Prerequisite: grade of C or better in 10-636-123 or consent of instructor.

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.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. 10/10

Administrative Professional

Program Number: 10-106-6

Associate in Applied Science Degree

Business Technology Program Cluster

Center for Agriscience and Technologies

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

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

About the Program

The Administrative Professional Program prepares individuals in the 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.

Unique Requirements for Admission

Recommendations for admission: Beginning PowerPoint competence. Keyboarding speed of 50 wpm or take Keyboarding Skillbuilding. It is highly recommended that each program student has access to a computer. Note: All Microsoft Office software courses use the 2010 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 discussions with professionals around the world and stay current with new business technology and trends. For more information about the online Administrative Professional degree program, contact (800) 322-6282 ext. 6800 or (608) 246-6800.



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Curriculum

The courses listed below outline the requirements for graduation for students entering this program in the 2011-2012 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

First Semester		Credits	Hrs/week Lec-Lab
10-103-123	Windows 7 (Qtr. 1)	1	0.75-2.25
10-103-137	Word-Beginning (Qtr. 1)	1	0.75-2.25
10-103-136	Word-Intermediate (Qtr. 2)	1	0.75-2.25
10-106-102	Professional Profile	1	1-0
10-106-139	Keyboard Skillbuilding	1	0-2
10-106-108	Proofreading and Editing	3	3-0
10-106-182	Information Technology Concepts	3	3-0
10-801-195	Written Communication	3	3-0
10-804-123	Math with Business Applications	3	3-0
Semester Total		17	

Second Semester

10-101-108	Applied Accounting 1	3	3-0
10-103-133	Excel-Beginning (Qtr. 3)	1	0.75-2.25
10-103-139	Excel-Intermediate (Qtr. 4)	1	0.75-2.25
10-103-145	Access-Beginning (Qtr. 3)	1	0.75-2.25
10-103-125	Access-Intermediate (Qtr. 4)	1	0.75-2.25
10-103-165	Outlook	1	0.75-2.25
10-106-103	Records Management	2	2-0
10-106-133	Word Processing Applications	2	2-0
10-106-164	Customer Contact Skills	1	1-0
10-106-172	Administrative Office Management	2	2-0
10-801-196	Oral/Interpersonal Communication	3	3-0
Semester Total		18	

SECOND YEAR

First Semester		Credits	Hrs/week Lec-Lab
10-103-153	PowerPoint Advanced (Qtr. 2)	1	0.75-2.25
10-103-126	Word-Advanced (Qtr. 1)	1	0.75-2.25
10-103-132	Excel-Advanced (Qtr. 2)	1	0.75-2.25
10-103-168	Dreamweaver	1	0.75-2.25
10-106-106	Business Writing and Research	2	1-2
10-106-134	Software Simulation	2	2-0
10-106-190	Professional Development	1	1-0
10-809-197	Contemporary American Society	3	3-0
10-809-199	Psychology of Human Relations	3	3-0
	Elective	1	E
Semester Total		16	

Second Semester

10-103-140	Publisher (Qtr. 4)	1	0.75-2.25
10-106-186	Project Management and Coordination	2	2-0
10-106-187	Exploring Business Technologies	2	2-0
10-106-194	Career Management (Qtr. 4)	1	1-0
10-106-195	Internship	1	0-4
10-801-198	Speech	3	3-0
10-809-172	Race, Ethnic and Diversity Studies	3	3-0
	Elective	3	E
Semester Total		16	

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, paper and electronic skills portfolio, core abilities, internship requirements, professional organizations, time management skills, personality traits, values and work environment preferences, and self-assessment of present career skills.

10-106-103 Records Management 2 credits
Fundamentals of managing the record life cycle; alphabetic, numeric, subject, geographic filing; electronic file management; supplies and equipment; charge-out procedures; retention schedules; transfer methods; control measurements; imaging systems and security of information. Follows recommendations of the Association of Records Managers and Administrators (ARMA).

10-106-106 Business Writing and Research 2 credits
This course is designed for students to learn 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 real business writing and research situations. Students will write letters, memos, electronic messages and other employment-related correspondence. Prerequisites: 10-106-108, 10-106-133, and 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, and point of view.

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 touch keyboarding skills, and 10-103-137. 10-103-136 must be taken prior to or in the same semester.

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: 10-103-137, 10-103-136, 10-103-133, 10-103-145 and 10-103-143.

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.

10-106-164 Customer Contact Skills 1 credit
Examines what is the foundation of good customer service, identifies internal/external customers, examines questioning techniques, explores listening skills, examines customer surveys, discusses dealing with challenging customers, and examines the role of the customer service representative in today's business world.

10-106-172 Administrative Office Management 2 credits
This course emphasizes the office skills necessary to succeed in a global business in the 21st century. Topics covered include: team building, travel, meetings and minute taking, Parliamentary Procedures, management and supervision, cultural diversity, ergonomics, and stress, time, and anger management.

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 used on the Internet, computer security concerns, and computer ethics. Prerequisite: access to the Internet.

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.

10-106-187 Exploring Business Technologies 2 credits
Research current and emerging technologies such as tablet and laptop computers, scanners, faxes, PDF files, electronic meetings/video conferencing, Zoomerang surveys, podcasting, and voice recognition software. Create an electronic portfolio. Student must be in final semester of program or obtain consent of instructor.

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

10-106-194 Career Management 1 credit
Identification of factors associated with job success: conflict resolution, business and dining etiquette, sexual harassment, ethics, career goals, and performance appraisal. Prerequisite: Student should be in last semester of 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. Prerequisite: students must be in their final semester before graduation, having completed all courses in the prior three semesters.

Recommended Electives

10-101-139 Quickbooks Pro	1 credit
10-102-160 Business Law 1	3 credits
10-103-141 Adobe Acrobat	1 credit
10-103-164 Flash-Beginning	1 credit
10-103-167 Fireworks-Beginning	1 credit
10-103-186 MS Project	2 credits
10-109-102 Fundamentals of Meeting Management	3 credits

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. 05/11

Basic Medical Reception Skills Certificate

Program Number: 90-106-4

Certificate

Business Technology Program Cluster

Center for Agriscience and Technologies

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

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. Most 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.

Certificate Application Process

To apply, see: Apply Online (on the Madison College website). [Create an ApplyWeb account](#) and follow the [instructions](#) to complete the [Online Certificate Application](#) before the [application deadline](#). Submit the \$15 non-refundable fee (payable by credit card, debit card or electronic check) with your application. Applicants may submit more than one certificate application per term using the Online Certificate Application; the same fees apply for each additional application.

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.

No more than 50% of the certificate credits may be through an advanced standing.

Curriculum

Courses	Credits	Hrs/week	
		Lec	Lab
10-106-101 Keyboarding Introduction	1	0	2
10-103-123 Windows 7	1	0.75	2.25
10-103-137 Word-Beginning*	1	0.75	2.25
10-106-165 Medical Office Procedures	3	3	0
10-103-133* Excel-Beginning*	1	0.75	2.25
10-106-139 Keyboard Skillbuilding	1	0	2
10-106-164 Customer Contact Skills	1	0.75	2.25
10-106-178 Medical Language for the Business Professional 1**	2	2	0
Total	11		

*Prerequisite: Windows

**Course offered in fall semester only

Courses are listed in suggested sequence.

Microsoft® is a registered trademark of the Microsoft Corporation.



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.

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.

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

Identify keyboarding weaknesses through diagnostic tests and analyses. Refine keyboarding technique, increase speed and improve accuracy through individualized corrective practice.

10-106-164 Customer Contact Skills 1 credit

Examines what is the foundation of good customer service, identifies internal/external customers, examines questioning techniques, explores listening skills, and examines customer service representative in today's business world.

10-106-165 Medical Office Procedures 3 credits

Emphasizes the electronic medical office procedures: communication, reception, appointment scheduling, record keeping, records management, telephone procedures, entering daily transactions, billing and collecting, banking procedures, preparing payroll, handling routine business correspondence, keeping an inventory of supplies and completing medical office simulations. Corerequisites/Prerequisites: 10-103-137, 10-106-178, and sufficient scores on the COMPASS test (scores that allow for enrollment in Written Communication), or completion 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.

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 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: 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.06/11

Business Software Applications Specialist

Program Number: 31-106-9

One-Year Technical Diploma

Business Technology Program Cluster

Center for Agriscience & Technologies

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

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

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: all Microsoft Office courses use the 2007 version.

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. 6800 or (608) 246-6800.

Curriculum

The courses listed below outline the requirements for graduation for students entering this program in the 2011-2012 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.

		Credits	Hrs/week Lec-Lab
First Semester			
10-103-123	Windows (Qtr 1).....	1	0.75-2.25
10-103-137	Word-Beginning (Qtr 1).....	1	0.75-2.25
10-103-136	Word-Intermediate (Qtr 2).....	1	0.75-2.25
10-103-143	PowerPoint (Qtr 2).....	1	0.75-2.25
10-106-103	Records Management.....	2	2-0
10-106-139	Keyboard Skillbuilding 1 ^a	1	0-2
10-106-182	Information Technology Concepts.....	3	3-0
10-801-195	Written Communication.....	3	3-0
10-804-123	Math with Business Applications.....	3	3-0
Semester Total		16	

Second Semester			
10-103-125	Access-Intermediate (Qtr 4).....	1	0.75-2.25
10-103-126	Word-Advanced (Qtr 3).....	1	0.75-2.25
10-103-133	Excel-Beginning (Qtr 3).....	1	0.75-2.25
10-103-139	Excel-Intermediate (Qtr 4).....	1	0.75-2.25
10-103-140	Publisher (Qtr 4).....	1	0.75-2.25
10-103-145	Access-Beginning (Qtr 3).....	1	0.75-2.25
10-103-165	Outlook.....	1	0.75-2.25
10-106-108	Proofreading/Editing.....	3	3-0
10-106-133	Word Processing Applications.....	2	2-0
10-106-164	Customer Contact Skills.....	1	1-0
10-106-172	Administrative Office Management.....	2	2-0
10-106-190	Professional Development (Qtr 3).....	1	1-0
10-106-194	Career Management (Qtr 4).....	1	1-0
Semester Total		17	

^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.



Program Courses

10-106-103 Records Management 2 credits

Fundamentals of managing the record life cycle; alphabetic, numeric, subject, geographic filing; electronic file management; supplies and equipment; charge-out procedures; retention schedules; transfer methods; control measurements; imaging systems and security of information. Follows recommendations of the Association of Records Managers and Administrators (ARMA).

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.

10-106-133 Word Processing Applications 2 credits

Utilize word processing skills to format letters, memos, tables and reports. Develop workplace skills: proofreading and decision-making. Prerequisites: Keyboarding Introduction (10-106-101) or touch keyboarding skills, Word-Beginning (10-103-137) AND Word-Intermediate (10-103-136).

10-106-139 Keyboard Skillbuilding 1 1 credit

Identify keyboarding weaknesses through diagnostic tests and analyses. Refine keyboarding technique, increase speed and improve accuracy through individualized corrective practice. Prerequisite: Keyboarding Introduction (10-106-101) or touch keyboarding experience.

10-106-164 Customer Contact Skills 1 credit

Examines what is the foundation of good customer service, identifies internal/external customers, examines questioning techniques, explores listening skills, and examines customer service representative in today's business world.

10-106-172 Administrative Office Management 2 credits

Emphasizes technology and procedures for office management. Includes practical experience in information processing, telecommunications, written communications, records management, presentations, teamwork, ethics, stress and time management, customer service, travel arrangements and meeting planning.

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 used on the Internet, computer security concerns, and computer ethics. Prerequisite: Access to the Internet.

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.

10-106-194 Career Management 1 credit

Identification of factors associated with job success: conflict resolution, business and dining etiquette, sexual harassment, ethics, career goals, and performance appraisal. Prerequisite: Student should be in last semester of program.

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.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. 03/11

Certificates in Microsoft® Office -Advanced

Program Number: 90-103-5

Certificates

Business Technology Program Cluster

Center for Agriscience and Technologies

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

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.

Certificate Application Process

To apply, see: Apply Online (on the Madison College website). [Create an ApplyWeb account](#) and follow the [instructions](#) to complete the [Online Certificate Application](#) before the [application deadline](#). Submit the \$15 non-refundable fee (payable by credit card, debit card or electronic check) with your application. Applicants may submit more than one certificate application per term using the Online Certificate Application; the same fees apply for each additional application.

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.

Microsoft® is a registered trademark of the Microsoft Corporation.

Note: All Microsoft Office courses use the 2010 version.

Curriculum

		Credits	Hrs/week Lec-Lab
BASIC Certificate in Microsoft® Office			
10-103-123	Windows 7 (Qtr 1)	1	0.75-2.25
10-103-165	Outlook	1	0.75-2.25
10-103-137	Word-Beginning	1	0.75-2.25
10-103-133	Excel-Beginning	1	0.75-2.25
10-103-145	Access-Beginning	1	0.75-2.25
10-103-143	PowerPoint	1	0.75-2.25
Total		6	

ADVANCED Certificate in Microsoft® Office

(Choose six courses from those listed below.)

10-103-125	Access-Intermediate	1	0.75-2.25
10-103-126	Word-Advanced	1	0.75-2.25
10-103-127	Access-Advanced	1	0.75-2.25
10-103-132	Excel-Advanced	1	0.75-2.25
10-103-136	Word-Intermediate	1	0.75-2.25
10-103-139	Excel-Intermediate	1	0.75-2.25
10-103-140	Publisher	1	0.75-2.25
10-103-153	PowerPoint-Advanced	1	0.75-2.25
Total		8	

(Choose 6 of the 8 credits)

Microsoft® is a registered trademark of the Microsoft Corporation.



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.

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.

10-103-143 PowerPoint 1 credit
 Introduction to PowerPoint presentation software. Create, edit, save, and print a presentation. Insert clip art, apply animation and slide transition effects, import text, customize background and bullets, create a table and a chart, create a WordArt object, and create a Webpage from a PowerPoint slide. Prerequisite: Competency in Windows AND experience using word processing software.

10-103-145 Access-Beginning 1 credit
 Introduction to Access database software. Plan, create, edit, save, print and manage data; modify a database structure; relate tables; find, filter, query and sort data in tables; create forms and reports. Prerequisite: Competency in Windows.

10-103-165 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.

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.

10-103-132 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 AND experience using word processing software.

10-103-153 PowerPoint-Advanced 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.

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

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. 05/11

Certificates in Microsoft® Office -Basic

Program Number: 90-103-1

Certificates

Business Technology Program Cluster

Center for Agriscience and Technologies

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

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.

Certificate Application Process

To apply, see: Apply Online (on the Madison College website). [Create an ApplyWeb account](#) and follow the [instructions](#) to complete the [Online Certificate Application](#) before the [application deadline](#). Submit the \$15 non-refundable fee (payable by credit card, debit card or electronic check) with your application. Applicants may submit more than one certificate application per term using the Online Certificate Application; the same fees apply for each additional application.

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.

Microsoft® is a registered trademark of the Microsoft Corporation.

Note: All Microsoft Office courses use the 2010 version.

Curriculum

		Credits	Hrs/week Lec-Lab
BASIC Certificate in Microsoft® Office			
10-103-123	Windows 7 (Qtr 1).....	1	0.75-2.25
10-103-165	Outlook	1	0.75-2.25
10-103-137	Word-Beginning	1	0.75-2.25
10-103-133	Excel-Beginning	1	0.75-2.25
10-103-145	Access-Beginning	1	0.75-2.25
10-103-143	PowerPoint	1	0.75-2.25
Total		6	

ADVANCED Certificate in Microsoft® Office

(Choose six courses from those listed below.)

10-103-125	Access-Intermediate	1	0.75-2.25
10-103-126	Word-Advanced	1	0.75-2.25
10-103-127	Access-Advanced	1	0.75-2.25
10-103-132	Excel-Advanced	1	0.75-2.25
10-103-136	Word-Intermediate	1	0.75-2.25
10-103-139	Excel-Intermediate	1	0.75-2.25
10-103-140	Publisher	1	0.75-2.25
10-103-153	PowerPoint-Advanced	1	0.75-2.25
Total		8	

(Choose 6 of the 8 credits)

Microsoft® is a registered trademark of the Microsoft Corporation.



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.

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.

10-103-143 PowerPoint 1 credit
 Introduction to PowerPoint presentation software. Create, edit, save, and print a presentation. Insert clip art, apply animation and slide transition effects, import text, customize background and bullets, create a table and a chart, create a WordArt object, and create a Webpage from a PowerPoint slide. Prerequisite: Competency in Windows AND experience using word processing software.

10-103-145 Access-Beginning 1 credit
 Introduction to Access database software. Plan, create, edit, save, print and manage data; modify a database structure; relate tables; find, filter, query and sort data in tables; create forms and reports. Prerequisite: Competency in Windows.

10-103-165 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.

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.

10-103-132 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 AND experience using word processing software.

10-103-153 PowerPoint-Advanced 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.

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

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. 05/11

Essential Office Skills Certificate

Program Number: 90-106-2

Certificate

Business Technology Program Cluster

Center for Agriscience and Technologies

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

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 update your skills by providing essential office skills used in today's modern offices. Full- and part-time positions are available in small and large cities throughout Wisconsin and the United States. Typical working hours in this occupation are weekday business hours, generally from 8 a.m. to 5 p.m. with some variation.

The skills obtained in the Essential Office Skills Certificate may be applied to the Business Software Applications Specialist diploma program and the Administrative Assistant Associate Degree program. In addition, many of the certificate credits may be applied to 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 typically earn \$8.00 to \$10.00 per hour based on their experience and other job skills.

Certificate Application Process

To apply, see: Apply Online (on the Madison College website). [Create an ApplyWeb account](#) and follow the [instructions](#) to complete the [Online Certificate Application](#) before the [application deadline](#). Submit the \$15 non-refundable fee (payable by credit card, debit card or electronic check) with your application. Applicants may submit more than one certificate application per term using the Online Certificate Application; the same fees apply for each additional application.

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.

No more than 50% of the certificate credits may be through an advanced standing.

Curriculum

Courses	Credits	Hrs/week	
		Lec	Lab
10-106-101 Keyboarding Introduction.....	1	0.75	2.25
10-103-123 Windows 7 (Qtr 1).....	1	(0.75)	(2.25)
10-103-137 Word-Beginning*.....	1	0.75	2.25
10-106-172 Administrative Office Management	2		2-0
10-103-133 Excel-Beginning*	1	0.75	2.25
10-106-139 Keyboard Skillbuilding	1	0.75	2.25
10-106-164 Customer Contact Skills	1	0.75	2.25
Total	8		

*Prerequisite: Windows

Note: Courses are listed in suggested sequence.

Microsoft® is a registered trademark of the Microsoft Corporation.

All Microsoft Office courses use the 2010 version.



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 10-103-123, Windows XP, or Windows Vista.

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; and insert clip art. Create and format tables, modify rows and columns, perform calculations, sort table data, and customize tables. Prerequisite: competency in Windows 10-103-123, Windows XP, or Windows Vista.

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
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 keyboard experience.

10-106-164 Customer Contact Skills 1 credit
Examines what is the foundation of good customer service, identifies internal/external customers, examines questioning techniques, explores listening skills, examines customer surveys, discusses dealing with challenging customers, and examines the role of the customer service representative in today's business world.

10-106-172 Administrative Office Management 2 credits
Emphasizes technology and procedures for office management. Includes practical experience in information processing, telecommunications, written communications, records management, presentations, teamwork, ethics, stress and time management, customer service, travel arrangements and meeting planning.

Career Potential:

- Administrative Support
- Customer Service Associate
- Front-line Receptionist
- Office Assistant
- Receptionist
- Word Processor

With advanced training graduates may find employment as:

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

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

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Rev. 06/11

Judicial Reporting

Program Number: 10-106-1

Associate in Applied Science Degree

Business Technology Program Cluster

Center for Agriscience & Technologies

Program offered at Madison Campuses

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

About the Program

Judicial reporters record the testimony, charges, opinions, sentences or other proceedings in a court of law, or the proceedings of business and professional conventions by computerized machine shorthand. This work affords interesting mental activity and requires concentration, patience, poise and good health. Promptness and attention to detail are essential traits. It is a profession offering personal satisfaction, mental stimulation and monetary rewards. The program is approved by the National Court Reporters Association (NCRA).

The national average length of time for completion of the program is 33 months, according to NCRA.

Recommendations for Admission

Keyboarding speed, 50 wpm; English composition, grade of C.

Unique Requirements for Graduation

Graduation from the program requires the following machine shorthand writing speeds: two-voice, 225 wpm; four-voice and 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.

Curriculum

The courses listed below outline the requirements for graduation for students entering this program in the 2011-2012 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

First Semester		Credits	Hrs/week Lec-Lab
10-102-160	Business Law 1	3	3-0
10-106-143	Realtime Reporting 1*	5	1-8
10-801-195	Written Communication	3	3-0
10-809-199	Psychology of Human Relations	3	3-0
10-804-123	Math with Business Applications	3	3-0
Semester Total		17	

Second Semester

10-106-144	Realtime Reporting 2*	5	1-8
10-106-108	Proofreading/Editing	3	3-0
10-106-158	Judicial Reporting Terminology*	2	2-0
10-801-196	Oral/Interpersonal Communication	3	3-0
10-809-197	Contemporary American Society	3	3-0
Semester Total		16	

Summer Semester

10-106-154	Realtime Reporting Workshop*	3	2-2
Semester Total		3	

SECOND YEAR

First Semester

10-106-130	Judicial Reporting Procedures* **	3	3-0
10-106-145	Judicial Reporting 1*	3	1-4
10-106-147	Legal/Technical Reporting 1*	3	1-4
10-106-153	CAT Systems*	3	2.5-2.5
10-501-101	Medical Terminology	3	3-0
10-809-172	Race, Ethnic and Diversity Studies	3	3-0
Semester Total		18	

Second Semester

10-106-146	Judicial Reporting 2*, **	3	1-4
10-106-148	Legal/Technical Reporting 2*	3	5-0
10-106-151	Judicial Reporting Internship*, **	3	0-12
10-809-195	Economics	3	3-0
	Elective	1	E
Semester Total		13	

*Courses offered only in semester shown.

**Judicial Reporting Procedures and Judicial Reporting Internship may be offered only every three years.

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

10-102-160 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.

10-106-108 Proofreading/Editing 3 credits
Develop proofreading skills: punctuation, grammar, spelling and usage errors. Edit documents: appropriate content, conciseness, clarity, point of view.

10-106-130 Judicial Reporting Procedures 3 credits
Presents professional court and conference shorthand reporting procedures. Includes 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 (CAT); reporting depositions, commission hearings and business meetings; operating a freelance reporting business; resume preparation. Prerequisite: 10-106-154 and 160 wpm minimum writing speed material.

10-106-143 Realtime Reporting 1 5 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.

10-106-144 Realtime Reporting 2 5 credits
Continuation of machine shorthand covering theory, keyboard, and phonetics necessary to write and read conflict-free computer shorthand. Introduces speedbuilding while focusing on accuracy in writing, transcribing, and readback of shorthand notes. Includes vocabulary development. Outside-of-class machine practice is required. Prerequisite: Minimum grade of C in 10-106-143.

10-106-145 Judicial Reporting 1 3 credits
Continues building speed and vocabulary, using material from courtroom proceedings and depositions, and includes medical dictation. Emphasis on writing two- and four-voice testimony. Speed attainment of 200 wpm is the goal. Prerequisite: 10-106-114 and 10-106-154 and a minimum writing speed of 100 wpm with 95 percent accuracy in real-time.

10-106-146 Judicial Reporting 2 3 credits
Objective of the course is to write 225 wpm for five minutes on unfamiliar material, including medical and technical dictation, with a minimum of 95 percent accuracy. Graduation from the program requires the following writing speeds: 2-voice, 225 wpm; 4-voice and jury charge, 200 wpm; and literary, 180 wpm (three 5-minute takes at 95 percent accuracy). Prerequisite: 10-106-145 and a minimum writing speed of 130 wpm with 95 percent accuracy in real-time.

10-106-147 Legal/Technical Reporting 1 3 credits
Specialized practice in writing and transcribing legal (jury charges, voir dire, expert witnesses and opening and closing statements) and technical (literary, congressional, scientific and medical) materials. Stresses fluent and accurate read backs. Prerequisite: Required entrance speed of 110 wpm on literary and jury charge material (five-minute takes with 95 percent accuracy).

10-106-148 Legal/Technical Reporting 2 3 credits
Develop advanced skills in writing and transcribing jury charge and literary materials. Continue medical dictation and transcription. Graduation writing speed requirements: Jury charge, 200 wpm; literary, 180 wpm (three 5-minute takes with 95 percent accuracy). Prerequisite: 10-106-147.

10-106-151 Judicial Reporting Internship 3 credits
Advanced students take dictation in court situations with the assistance and guidance of qualified reporters who evaluate the students' performance and work. Mock RPR and CRR tests are administered. Prerequisite: 10-106-145 and a minimum writing speed of 160 wpm.

10-106-153 CAT (Computer-Assisted Transcription) Systems 3 credits
Advanced course using Total Eclipse software from Advantage Software (software to translate, edit, and print transcripts). Students compile individual personal dictionaries for use upon graduation. Lecture/discussion groups center around topics of CAT management, real-time translation, and reporter technology.

10-106-154 Realtime Reporting Workshop 3 credits
Required during the summer prior to entering the third semester of the program. Brief forms and phrases are reviewed. Vocabulary development and speed building are emphasized. Live dictation daily for speed building and testing. Prerequisite: 10106144 Court Reporting 2 and minimum writing speed of 80 wpm with 95 percent accuracy in real-time. Required during the summer prior to entering the third semester of the program.

10-106-158 Judicial Reporting Terminology 2 credits
Covers the basic legal and Latin vocabulary necessary for successful transcription or captioning in the following subject areas: general legal terms, civil actions, criminal law, probate, real property, domestic relations, agency relationships, and bankruptcy. The correct spelling, pronunciation and definition of the terms are studied in addition to transcribing the terms from electronic stenowriter notes. Prerequisite: 10-106-143 or Realtime Reporting 1A and 1B.

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, definitions and pronunciation. Introduction to operative, diagnostic, therapeutic and symptomatic terminology of all body systems, as well as systemic and surgical terminology, is included.

Recommended Electives

10-106-155 Judicial Reporting Skillbuilding-Advanced 1 credit
One-credit elective course for students who have not completed NCRA graduation speed requirements. Consists entirely of live dictation at 200 wpm 4-voice testimony takes, 200-225 wpm 2-voice testimony takes, 180 wpm literary takes and 200 wpm jury charge takes. Practice from Stenograph and Merit testing programs.

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.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. 05/11

Medical Administrative Specialist

Program Number: 10-106-4

Associate in Applied Science Degree

Business Technology Program Cluster

Center for Agriscience & Technologies

Program offered at Madison Campuses

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

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 \$34,000 per year.

Recommendations for Admission

Keyboarding speed of 45 wpm and high school English composition with a grade of C or higher. Successful students have a mastery of English fundamentals—grammar, punctuation, and spelling. They should enjoy working with computers and be detail-oriented. Students should have access to a computer with an Internet connection for homework assignments.

Curriculum

The courses listed below outline the requirements for graduation for students entering this program in the 2011-2012 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		Credits	Hrs/week Lec-Lab
First Semester			
10-103-123	Windows 7 (Qtr. 1).....	1	0.75 – 2.25
10-103-136	Word–Intermediate (Qtr. 2).....	1	0.75-2.25
10-103-137	Word–Beginning (Qtr. 1).....	1	0.75-2.25
10-103-143	PowerPoint (Qtr. 2).....	1	0.75-2.25
10-106-139	Keyboard Skillbuilding (Qtr. 2).....	1	0-2
10-106-166	Medical Transcription Techniques and Procedures*	3	3-0
10-106-170	Medical Transcription 1*	2	1.5-1.5
10-106-178	Medical Language for Business Professionals 1*.....	2	2-0
10-801-195	Written Communication	3	3-0
Semester Total		15	

Second Semester			
10-103-133	Excel–Beginning (Qtr. 3).....	1	0.75-2.25
10-103-139	Excel–Intermediate (Qtr. 4).....	1	0.75-2.25
10-106-171	Medical Transcription 2*	2	1.5-1.5
10-106-179	Medical Language for Business Professionals 2*.....	2	2-0
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		15	

SECOND YEAR		Credits	Hrs/week Lec-Lab
First Semester			
10-103-145	Access–Beginning (Qtr. 3 or 4)	1	0.75-2.25
10-103-165	Outlook.....	1	0.75-2.25
10-106-103	Records Management	2	3-0
10-106-108	Proofreading and Editing	3	3-0
10-804-123	Math with Business Applications	3	3-0
10-809-195	Economics	3	3-0
	Elective.....	3	E
Semester Total		16	

Second Semester			
10-101-108	Applied Accounting 1	3	3-0
10-106-165	Medical Office Procedures.....	3	3-0
10-106-186	Project Management & Coordination.....	2	2-0
10-106-190	Professional Development (Qtr. 3)	1	1-0
10-106-194	Career Management (Qtr. 4)	1	1-0
10-106-195	Internship	1	0-4
10-809-172	Race, Ethnic and Diversity Studies	3	3-0
10-809-199	Psychology of Human Relations.....	3	3-0
Semester Total		17	

* Course offered only in semester shown.

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



Program Courses

10-103-165 Outlook 1 credit

Use Microsoft's messaging and personal information management program. Communicate by email; schedule appointments, meetings and events; manage the Inbox, contact lists, tasks and notes; track and archive messages; configure and customize Outlook; record journal entries; manage Outlook components; integrate Outlook with other Office programs. Prerequisite: Competency in Windows or Windows XP 10-103-134 or 10-103-135.

10-106-103 Records Management 2 credits

Fundamentals of managing the record life cycle; alphabetic, numeric, subject, and geographic filing; supplies and equipment; charge-out procedures; retention schedules; transfer methods; control measurements; and imaging systems. Follows recommendations of the Association of Records Managers and Administrators.

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.

10-106-139 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.

10-106-165 Medical Office Procedures 3 credits

Emphasizes medical office procedures: communications, reception, appointment scheduling, record keeping, records management, telephone procedures, entering daily transactions, billing and collecting, banking procedures, preparing payroll, handling routine business correspondence, keeping an inventory of supplies and an introduction to features in an electronic office situation. Corerequisites/Prerequisites: 10-103-137, 10-106-178 and sufficient scores on the COMPASS test (scores that allow for enrollment in Written Communication), or completion or concurrent enrollment in Written Communication or English 1.

10-106-166 Medical Transcription 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. Prerequisites/corequisites: 10-106-178 and sufficient scores on the COMPASS test (scores that allow for enrollment in Written Communication), or completion or concurrent enrollment in Written Communication or English 1.

10-106-170 Medical Transcription 1 2 credits

Introduces transcription of medical dictation; reinforces medical terminology and formats for a variety of medical reports. Continued development of keyboarding speed and accuracy skills. Prerequisites: keyboarding skill, concurrent enrollment in or completion of 10-106-166 and 10-106-178.

10-106-171 Medical Transcription 2 2 credits

Emphasizes transcription of more complex medical dictation, disease processes and medical specialties at higher levels of production and accuracy. Prerequisites: 10-106-166 and 10-106-170. Corequisite: 10-106-179.

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 software and GANTT charts. Project management and coordination techniques and concepts are learned by examining case studies and completing a project. Prerequisite: Must be taken in last year of program.

10-106-190 Professional Development 1 credit

Research the job market, develop a job search/career portfolio, explore networking, prepare for employment tests and practice for job interviews. The portfolio includes a resume, cover letter, thank you letter, reference sheet, job application form, and work samples. Prerequisite: 10-801-195.

10-106-194 Career Management 1 credit

Identification of factors associated with job success: professional image, conflict resolution, business and dining etiquette, sexual harassment, ethics, career goals, and performance appraisal. Explore personality types via the Internet. Should be taken in last semester of 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. Prerequisite: students must be in their final semester before graduation, having completed all courses in the prior three semesters.

10-501-153 Body Structure 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.

Recommended Electives

- 10-102-160 Business Law 1 3 credits
- 10-103-126 Word-Advanced 1 credit
- 10-103-132 Excel-Advanced 1 credit
- 10-103-140 Publisher 1 credit
- 10-103-153 PowerPoint-Advanced 1 credit
- 10-106-106 Business Writing and Research 2 credits
- 10-106-173 Medical Transcription Virtual Practicum 2 credits
- 10-106-187 Exploring Business Technologies 2 credits (if seats are available at open registration)

Career Potential:

- Medical Administrative Assistant
- Medical Receptionist
- Medical Records Clerk
- Medical Secretary
- Medical Transcriptionist
- Insurance Claims Processor
- Program Assistant
- Word Processing Operator
- Admittance Clerk
- Department/Clinic Assistant
- General Office Clerk
- General Office Receptionist

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

- Chart Analyst
- Health Record Technologist
- Patient Information Specialist
- Health Unit Coordinator
- Medical Coding Specialist
- Medical Office Manager

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. 06/11

Medical Billing Specialist Certificate

Program Number: 90-106-6

Certificate

Business Technology Program Cluster

Center for Agriscience and Technologies

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

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.

Certificate Application Process

To apply, see: Apply Online (on the Madison College website). [Create an ApplyWeb account](#) and follow the [instructions](#) to complete the [Online Certificate Application](#) before the [application deadline](#). Submit the \$15 non-refundable fee (payable by credit card, debit card or electronic check) with your application. Applicants may submit more than one certificate application per term using the Online Certificate Application; the same fees apply for each additional application.

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.

No more than 50% of the certificate credits may be through an advanced standing.

Curriculum

First Semester/Fall Courses		Credits	Hrs/week Lec-Lab
10-106-101	Keyboarding Introduction (Q1)	1	0-2
10-103-123	Windows 7	1	0.75-2.25
10-103-137	Word—Beginning* (Q2)	1	0.75-2.25
10-106-165	Medical Office Procedures	3	3-0
10-106-178	Medical Language for the Business Professional 1	2	2-0
Total		8	

Second Semester/Spring Courses		Credits	Hrs/week Lec-Lab
10-106-139	Keyboard Skillbuilding	1	0-2
10-106-179**	Medical Language for the Business Professional 2	2	2-0
10-103-133	Excel—Beginning*(Q3)	1	0.75-2.25
10-103-139	Excel—Intermediate (Q4)	1	0.75-2.25
10-106-177**	Specialized Insurance Claims	2	2-0
10-106-164	Customer Contact Skills	1	0.75-2.25
Total		8	

*Prerequisite: Windows

**Course offered in spring semester only

Courses are listed in suggested sequence.

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Courses

10-103-123 Windows 7 1 credit

Introduces the Windows 7 operating system: work with common elements (Windows, menus, toolbars, panes, dialog boxes, and Help), use accessory programs, manage file/folders using MY Computer and Explorer, customize using the Control Panel and maintain the computer.

10-103-133 Excel-Beginning 1 credit

Introduction to Excel spreadsheet software. Create, edit, save, format, print, perform calculations, copy/move text and formulas, create charts, create complex formulas and expand use of functions. Prerequisite: Competency in Windows.

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.

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

Identify keyboarding weaknesses through diagnostic tests and analyses. Refine keyboarding technique, increase speed and improve accuracy through individualized corrective practice.

10-106-164 Customer Contact Skills 1 credit

Examines what is the foundation of good customer service, identifies internal/external customers, examines questioning techniques, explores listening skills, and examines customer service representative in today's business world.

10-106-165 Medical Office 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. Corequisites/Prerequisites: 10-103-137, 10-106-178 and sufficient scores on the COMPASS test (scores that allow for enrollment in Written Comm), 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. Prerequisite: 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.org. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

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Rev. 06/11

Medical Transcriptionist

Program Number: 31-106-7

One-Year Technical Diploma

Business Technology Program Cluster

Center for Agriscience and Technologies

Program offered at Madison Campuses

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

About the Program

Successful completion of this program qualifies the student for entry-level employment as a medical transcriptionist wherever transcription of medical material is required: hospitals, clinics, doctors' offices, nursing homes, specialty laboratories, transcription services and insurance companies. A medical transcriptionist must possess a thorough knowledge of medical terminology, anatomy, pathology and pharmacology. The status of registered medical transcriptionist (RMT) can be acquired upon completion of the program and written examination. 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 \$32,800 to \$35,700 per year.

All credits for the Medical Transcriptionist Program may be applied to the Medical Administrative Specialist Associate Degree Program. In addition, many credits may be applied to the Administrative Assistant Associate Degree Program.

Recommendations for Admission

Keyboarding speed of 45 wpm and high school English composition with a grade of C or higher. Successful students have a mastery of English fundamentals—grammar, punctuation, and spelling. They should enjoy working with computers and be detail-oriented. Students should have access to a computer with an Internet connection for homework assignments.

Curriculum

The courses listed below outline the requirements for graduation for students entering this program in the 2011-2012 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 myMadisonCollege account for specific graduation requirements. Program requirements are subject to change.

		Hrs/week	
		Credits	Lec-Lab
First Semester			
10-103-137	Word-Beginning (Qtr 1).....	1	0.75-2.25
10-106-139	Keyboard Skillbuilding (Qtr 2).....	1	0-2
10-106-108	Proofreading/Editing	3	3-0
10-106-166	Medical Transcription Techniques and Procedures*	3	3-0
10-106-170	Medical Transcription 1*	2	1.5-1.5
10-106-178	Medical Language for Business Professionals 1*	2	2-0
10-801-195	Written Communication	3	3-0
Semester Total		15	
Second Semester			
10-106-165	Medical Office Procedures.....	3	3-0
10-106-171	Medical Transcription 2**	2	1.5-1.5
10-106-173	Medical Transcription Virtual Practicum** (Qtr 4).....	2	0-2
10-106-190	Professional Development (Qtr. 3)	1	1-0
10-501-153	Body Structure	3	3-0
10-106-179	Medical Language for Business Professionals 2**	2	2-0
10-530-182	Human Diseases for the Health Professions.....	3	3-0
Semester Total		16	

* Offered fall semester only

** Offered spring semester only

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

10-106-108 Proofreading and Editing 3 credits
Develop proofreading skills: punctuation, grammar, spelling and usage errors. Edit documents: appropriate content, conciseness, clarity, and point of view.

10-106-165 Medical Office Procedures 3 credits
Emphasizes medical office procedures: communication, reception, appointment scheduling, record keeping, records management, telephone procedures, entering daily transactions, billing and collecting, banking procedures, preparing payroll, handling routine business correspondence, keeping an inventory of supplies and an introduction to features in an electronic office situation. Prerequisites/Corequisite: 10-103-137, 10-106-178, and sufficient scores on the COMPASS test (scores that allow for enrollment in Written Communication), or completion or concurrent enrollment in Written Communication or English 1.

10-106-166 Medical Transcription 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. Prerequisites/corequisites: 10-106-178 and sufficient scores on the COMPASS test (scores that allow for enrollment in Written Communication), or completion or concurrent enrollment in Written Communication or English 1.

10-106-170 Medical Transcription 1 2 credits
Introduces transcription of medical dictation; reinforces medical terminology and formats for a variety of medical reports. Continued development of keyboarding speed and accuracy skills. Prerequisites: keyboarding skill, concurrent enrollment in (or completion of) 10-106-166 and 10-106-178.

10-106-171 Medical Transcription 2 2 credits
Emphasizes transcription of more complex medical dictation, disease processes and medical specialties at higher levels of production and accuracy. Prerequisites: 10-106-166 and 10-106-170. Corequisite: 10-106-179.

10-106-173 Medical Transcription Virtual Practicum 2 credits
Provides hands-on experience and practice transcribing medical documents while simulating a telecommuting medical transcription employment environment. Emphasis is on increased productivity while maintaining high-quality documents. Students will transcribe an assortment of reports for a variety of medical specialties on a random basis. The student will continue to increase their knowledge of researching, editing, decision making, and communication while working in an online environment. Prerequisites: 10-106-166, 10-106-170 and 10-106-178. Corequisites: 10-106-108, 10-106-171, 10-106-179, 10-501-153 and 10-530-182.

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.

10-106-190 Professional Development 1 credit
Research the job market, develop a job search/career portfolio, explore networking, prepare for employment tests and practice for job interviews. The portfolio includes a resume, cover letter, thank you letter, reference sheet, job application form, and work samples. Prerequisite: 10-801-195.

10-501-153 Body Structure 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.

10-530-182 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 settings by health professionals. Emphasis is placed on understanding the etiology (cause), signs and symptoms, diagnostic tests, treatment (including pharmacologic) of each disease. Prerequisite: 10-106-178. Prerequisite or Corequisite: 10-106-179.

Career Potential:

- Medical Transcriptionist
- Medical Language Specialist
- Speech Recognition Editor
- Word Processing Operator/Medical
- Clerical/Receptionist
- Appointment Scheduler

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

- Department Secretary
- Medical Secretary
- Medical Administrative Assistant
- Health Unit Coordinator
- Medical Coding Specialist

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

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Rev. 06/11

Project Management Certificate

Program Number: 90-106-5

Certificate

Business Technology Program Cluster

Center for Agriscience and Technologies

Certificate courses offered at Madison Campuses

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

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 \$14 to \$20 per hour based on their experience and other job skills.

Certificate Application Process

To apply, see: Apply Online (on the Madison College website). [Create an ApplyWeb account](#) and follow the [instructions](#) to complete the [Online Certificate Application](#) before the [application deadline](#). Submit the \$15 non-refundable fee (payable by credit card, debit card or electronic check) with your application. Applicants may submit more than one certificate application per term using the Online Certificate Application; the same fees apply for each additional application.

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.

No more than 50% of the certificate credits may be through an advanced standing.

Curriculum

Courses	Credits	Hrs/week
		Lec-Lab
10-103-139 Excel-Intermediate**	1	0.75-2.25
10-103-186 MS Project*	2	1-2
10-106-164 Customer Contact Skills	1	0.75-2.25
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 or equivalent

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Courses

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 Excel-Beginning 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.

10-106-164 Customer Contact Skills 1 credit
Examines what is the foundation of good customer service, identifies internal/external customers, examines questioning techniques, explores listening skills, and examines customer service representative in today's business world.

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.

10-109-102 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.org. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

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Rev. 10/10

Receptionist/Clerical and Office Assistant Certificate

Program Number: 90-106-3

Certificate

Business Technology Program Cluster

Center for Agriscience and Technologies

Certificate courses offered at Madison, Fort Atkinson, Portage, Reedsburg, and Watertown campuses, as well as completely online. This certificate is also offered entirely in a bilingual (English/Spanish) format.

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

About the Certificate

Clerical jobs are among the top five occupations for projected growth nationally. Madison College has developed this certificate to prepare students with the entry level skills to perform office assistant and clerical support jobs. Students will enhance their proofreading and editing skills and learn to communicate more effectively. Students will also get the administrative, customer service, and management skills to be successful in a fast-paced business environment.

The skills obtained in the Receptionist/Clerical and Office Assistant Certificate may be applied to the Administrative Assistant Associate Degree program. In addition, many of the certificate credits may be applied to other 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.

Certificate Application Process

To apply, see: Apply Online (on the Madison College website). [Create an ApplyWeb account](#) and follow the [instructions](#) to complete the [Online Certificate Application](#) before the [application deadline](#). Submit the \$15 non-refundable fee (payable by credit card, debit card or electronic check) with your application. Applicants may submit more than one certificate application per term using the Online Certificate Application; the same fees apply for each additional application.

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.

No more than 50% of the certificate credits may be through advanced standing.

Curriculum

Courses	Credits	Hrs/week	
		Lec	Lab
10-106-172	Administrative Office Management.....	2	2-0
10-106-164	Customer Contact Skills	1	0.75-2.25
10-106-190	Professional Development.....	1	0.75-2.25
10-106-103	Records Management	2	1-2
10-106-194	Career Management.....	1	0.75-2.25
	Total	7	



Courses

10-106-172 Administrative Office Management 2 credits
Emphasizes technology and procedures for office management. Includes practical experience in information processing, telecommunications, written communications, records management, presentations, teamwork, ethics, stress and time management, customer service, travel arrangements and meeting planning.

10-106-164 Customer Contact Skills 1 credit
Examines what is the foundation of good customer service, identifies internal/external customers, examines questioning techniques, explores listening skills, and examines customer service representative in today's business world.

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. 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.

10-106-103 Records Management 2 credits
Fundamentals of managing the record life cycle; alphabetic, numeric, subject, geographic filing; electronic file management; supplies and equipment; charge-out procedures; retention schedules; transfer methods; control measurements; imaging systems and security of information. Follows recommendations of the Association of Records Managers and Administrators (ARMA).

10-106-194 Career Management 1 credit
Identification of factors associated with job success: conflict resolution, business and dining etiquette, sexual harassment, ethics, career goals, and performance appraisal. Explore personality types via the Internet. Prerequisite: Student should be in last semester of program.

Career Potential:

- Administrative Support
- Office Assistant
- Customer Service Associate
- Information Assistant
- Word Processor

With advanced training students may find employment as:

- Administrative Assistant
- Executive Secretary
- Information Coordinator
- Executive Assistant

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

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Rev. 10/10

Website Development Certificate

Program Number: 90-152-2

Certificate

Business Technology Program Cluster

Center for Agriscience and Technologies

Certificate courses offered completely online

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

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.

Certificate Application Process

To apply, see: Apply Online (on the Madison College website). [Create an ApplyWeb account](#) and follow the [instructions](#) to complete the [Online Certificate Application](#) before the [application deadline](#). Submit the \$15 non-refundable fee (payable by credit card, debit card or electronic check) with your application. Applicants may submit more than one certificate application per term using the Online Certificate Application; the same fees apply for each additional application.

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.

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.org. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

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Rev. 3/11

Curriculum

Courses	Credits	Hrs/week	
		Lec	Lab
10-152-162 HTML-Beginning.....	1	0.75	2.25
10-152-163 HTML-Dynamic*.....	1	0.75	2.25
10-103-168 Dreamweaver.....	1	0.75	2.25
10-103-167 Fireworks-Beginning.....	1	0.75	2.25
10-103-164 Flash-Beginning.....	1	0.75	2.25
10-103-163 Adobe Photoshop.....	1	0.75	2.25
10-152-165 JavaScript: An Introduction*.....	1	1-0	
10-152-164 Website Design Concepts*.....	1	0.75	2.25
Total	8		

*Prerequisites: HTML-Beginning is required before taking HTML-Dynamic, JavaScript: An Introduction, and Website Design Concepts.

Note: Courses listed in suggested sequence

Courses

10-103-163 Adobe Photoshop 1 credit
Use this image-editing program to manipulate graphic images. Use palettes, tools, and a variety of techniques to modify images by rotating, resizing, changing color, and adding text. Prerequisite: 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 Web-design tools and techniques to plan, create, test, publish, and maintain a Website. Use HTML, Dreamweaver, FrontPage, or other Web authoring software to develop a Website that is user friendly, well-designed, and effective. Prerequisite: competency in Windows and HTML, Dreamweaver, FrontPage, or other Web authoring software.

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.



Bioinformatics Certificate

Program Number: 90-152-4

Certificate

Information Technology Program Cluster

Center for Agriscience and Technologies

Courses offered at Madison Campuses

For information call: (608) 243-4307 or
(800) 322-6282 Ext. 4307

About the Certificate

This certificate is designed for individuals with a college background in the life sciences to prepare them for careers in the emerging field of bioinformatics. Bioinformatics is the application of information technology to the management and analysis of biological data. Computational tools are used to store, retrieve, analyze or predict the composition or structure of biomolecules. Increasingly, the biotechnology workforce requires knowledge of bioinformatics, at least at the literacy level, in order to be able to communicate in the workplace. Beyond literacy, there are employment opportunities available for scientists and technicians with the following skills: database creation and management; writing small computer programs (scripts) to query databases; using computational analysis tools effectively and website design and maintenance to make information accessible. In the certificate program, students study the design and use of bioinformatics tools, Unix, a programming language, Oracle relational database, and Internet technology.

Unique Requirements for Admission

The student is expected to have an AAS degree in the Biotechnology Lab Technician Program or a four-year degree in a life science discipline or equivalent experience in the biotechnology industry. The student is also expected to have basic experience in operating a personal computer.

Certificate Application Process

To apply, see: Apply Online (on the Madison College website). [Create an ApplyWeb account](#) and follow the [instructions](#) to complete the [Online Certificate Application](#) before the [application deadline](#). Submit the \$15 non-refundable fee (payable by credit card, debit card or electronic check) with your application. Applicants may submit more than one certificate application per term using the Online Certificate Application; the same fees apply for each additional application.

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

		Hrs/week	
FIRST YEAR			
First Semester		Credits	Lec-Lab
10-007-180	Introduction to Bioinformatics	3	2-2
10-152-111	Introduction to Java Programming	3	2-2
Semester Total		6	
Second Semester			
10-152-120	Web Site Development-XHTML	3	2-2
10-152-125	Relational Database Coding-Oracle SQL	3	2-2
Semester Total		6	
SECOND YEAR			
First Semester			
10-007-181	Advanced Bioinformatics	3	2-2
10-154-190	Linux Server	3	3-0
Semester Total		6	

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



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.

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: 10-007-180.

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

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10-007-181 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 using the Perl programming language, Oracle database, and internet technology in the UNIX operating system.
Prerequisites: grade of C or better in all certificate courses and concurrent enrollment in 10-007-180, 10-152-120, 10-152-125 and 10-152-151.

10-152-111 Introduction to 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.

10-152-120 Website Development-XHTML 3 credits
Teaches the fundamentals and techniques of developing business websites using XHTML-compliant HTML. Topics include webpage design, tables, image manipulation, image maps, forms, tags, cascading style sheets (CSS) and an introduction to JavaScript. All work is done directly with XHTML. Prerequisite: Working knowledge of Microsoft Windows (computer Literacy, proficiency with a mouse, file management).

10-152-125 Relational Database Coding – Oracle/SQL 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: 10-007-180.

Internet Developer Certificate – IDC

Program Number: 90-152-11

Certificate

Information Technologies Program Cluster

Center for Agriscience and Technologies

Program offered at Madison Campuses

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

About the Program

The Internet Developer Certificate is a sequence of connected courses exploring Internet software development, including Javascript, PHP/MySQL, Java, Ajax, Drupal, Adroid, and Flash development. This certificate is open to graduates of a computing program or anyone with equivalent field experience.

These are three-credit courses, meeting two hours in the classroom and two hours in the lab each week for 17 weeks. All sections are in the late afternoon and evening. Class work stresses hands-on programming through projects, and students are welcome to work on assignments at home or at work if they have the tools, which are mostly free (the Android SDK or PHP, for example).

Completing the certificate takes two years taking one course per semester. The express track allows completion in one year taking two courses per semester.

Although four courses must be taken to obtain the certificate, qualified "special students" are welcome to take individual classes, room permitting (a certain number of seats are reserved for certificate students). Applications are being accepted on a rolling basis.

Obtaining the certificate requires taking four courses. Intro to Internet Programming is required and should be taken first.

For more information, please contact [Mike Bertrand](#).

Curriculum

Courses	Credits	Hrs/week	
		Lec	Lab
10-152-187 Drupal Development - IDC	3	2	2
10-152-188 Intro to Internet Programming - IDC	3	2	2
10-152-189 Android Applications Development – IDC	3	2	2
10-152-190 Java Programming - IDC	3	2	2
10-152-192 Ajax, XSLT, and JQuery - IDC	3	2	2
10-152-196 PHP and MySQL Programming - IDC	3	2	2
10-152-199 Flash and Flex Programming - IDC	3	2	2
Total	12		

Pre-Admission Skills

Certificate students are expected to have some experience in software development.

Unique Requirements for Admission

The certificate is open to graduates of a computing program or anyone with equivalent field experience.

Certificate Application Process

To apply, see: Apply Online (on the Madison College website). [Create an ApplyWeb account](#) and follow the [instructions](#) to complete the [Online Certificate Application](#) before the [application deadline](#). Submit the \$15 non-refundable fee (payable by credit card, debit card or electronic check) with your application. Applicants may submit more than one certificate application per term using the Online Certificate Application; the same fees apply for each additional application.

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

10-152-187 Drupal Development – IDC 3 credits

This course takes up all aspects of Drupal Open Source development, starting with installation, configuration, and base features. Core functions and modules are addressed, including users, content types, themes, menus, and jQuery. Module development with PHP is the central topic of this class, including with the form API against MySQL. Students should be familiar with HTML and CSS and be ready to program in PHP. This course is an elective for the Internet Developer Certificate.

10-152-188 Intro to Internet Programming – IDC 3 credits

Introduction to HTML programming and client-side scripting. HTML topics include basic webpage layout and design, graphics, tables, forms, style sheets and the Document Object Model/DHTML. JavaScript programming is covered intensively, including scripting basics, dynamic HTML production, arrays and validating user input. After these foundations, students study Cascading Style Sheets (CSS), XML, Ajax, and ASP. This course is required for the Internet Developer Certificate and should be taken first.

10-152-189 Android Applications Development – IDC 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. This course is an elective for the Internet Developer Certificate.

10-152-190 Java Programming – IDC 3 credits

Introduction to the Java programming language from an object-oriented point of view. Students start with Java basics: data types, class construction, control structures, method writing and elementary event handling. Further topics include Java components and layout, mouse handling, graphics, string manipulation, remote data access, file I/O, network programming and database work. Java 2 and Swing are covered extensively. Students write device independent applications as well as Internet applets. This course is an elective for the Internet Developer Certificate.

10-152-192 Ajax, XSLT, and JQuery – IDC 3 credits

This course takes up programming web pages with Javascript, including through the XML DOM API and jQuery. Ajax is a special focus, including against MySQL and server-side PHP scripts. The central role of CSS is emphasized throughout. Additional topics include Web Services, XSLT, RSS, and Google maps. This course is an elective for the Internet Developer Certificate.

10-152-196 PHP and MySQL Programming – IDC 3 credits

This course is an introduction to PHP and MySQL and develops the basics of PHP programming, including variables, control, functions, arrays, classes and file I/O. Intermediate level SQL is taken up as well. Students develop a robust shopping cart application for an online bookstore, including initial database construction using web services, a web search engine, user authentication, payment handling through Paypal's sandbox and transaction storage. This course is an elective for the Internet Developer Certificate.

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.

10-152-199 Flash and Flex Programming – IDC 3 credits

This course introduces ActionScript 3.0 programming in Adobe Flash and Flex. After a brief introduction to the drawing tools, we take up writing event handlers and drawing with ActionScript. All major programming constructs are considered, including variables, loops, functions, object-oriented concepts, and file I/O (including XML). Programmatic Flash animation is a continuing thread. Additional topics include Flash forms, games, and drag-and-drop techniques. This course is an elective for the Internet Developer Certificate.

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Madison Area Technical College Information Technology— IT-Android Applications Development Certificate

Effective: 2011-2012

Program Number: 90-152-12

Certificate

Information Technology Program Cluster

Center for Agriscience and Technologies

Program offered at Madison Campuses

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

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.

Unique Requirements for Admission

- Madison College IT programming students who have completed either 10-152-102 Advanced Visual Basic .NET Programming, 10-152-112 Advanced Java Programming, 10-152-141 C# Programming in Visual Studio.NET, 10-152-157 Ruby on Rails Development, or 10-152-190 Java Programming – IDC.

OR

- IT professionals with 2 years experience in an Object Oriented programming language (e.g. Java, Visual Basic .NET, C#, Ruby on Rails),

Certificate Application Process

To apply, see: Apply Online (on the Madison College website). [Create an ApplyWeb account](#) and follow the [instructions](#) to complete the [Online Certificate Application](#) before the [application deadline](#). Submit the \$15 non-refundable fee (payable by credit card, debit card or electronic check) with your application. Applicants may submit more than one certificate application per term using the Online Certificate Application; the same fees apply for each additional application.

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

Courses	Credits	Hrs/week	
		Lec	Lab
10-152-189 Android Applications Development - IDC *	3	2	2
10-152-195 <u>Advanced Android Development - IDC**</u>	<u>3</u>	<u>2</u>	<u>2</u>
Total	6		

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

*Offered fall semester only

**Offered spring semester only

Courses

10-152-189 Android Applications Development - IDC 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 enrolled in Android Applications Development Certificate or have obtained a grade of "C" or better in one of the following: 10-152-102 Advanced Visual Basic .NET Programming, 10-152-112 Advanced Java Programming, 10-152-141 C# Programming in Visual Studio.NET, 10-152-157 Ruby on Rails Development or 10-152-190 Java Programming.

10-152-195 Advanced Android Development – IDC 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 Android Applications Development.

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

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Real world smart.

Madison Area Technical College Information Technology — CISCO Certified Networking Associate (CCNA)

Effective: 2011-2012

Program Number: 90-150-2

Certificate

Information Technology Program Cluster

Center for Agriscience and Technologies

Program offered at Madison Campuses

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

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. Two courses are used to teach students the necessary skills to make them successful in the field of data networking. Please note: completion of the CCNA certificate courses prepares students to test for the CCNA certification.

Pre-Admission Skills

High school diploma, HSED or GED with a minimum grade point average of 2.0, or equivalent, and general knowledge of Microsoft Windows. No Application is required.

Certificate Application Process

To apply, see: [Apply Online](#) (on the Madison College website). [Create an ApplyWeb account](#) and follow the [instructions](#) to complete the [Online Certificate Application](#) before the [application deadline](#). Submit the \$15 non-refundable fee (payable by credit card, debit card or electronic check) with your application. Applicants may submit more than one certificate application per term using the Online Certificate Application; the same fees apply for each additional application.

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.

No more than 50% of the certificate credits may be through advanced standing.

Curriculum

Courses	Credits	Hrs/week	
		Lec	Lab
10-150-170 CCNA1&2: Networking Routing Basics	5	3	4
10-150-172 CCNA3&4: Switching and WAN Access	3	2	2
Total	8		

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

Courses

10-150-170 CCNA1&2: Networking Routing Basics 5 credits
Introduction to Networking basics and routing with a focus on network terminology, protocols, local area networks (LANs), Open System Interconnection (OSI) model, cabling, routers and router programming, Ethernet, Internet Protocol (IP) addressing, subnetting, Variable Length Subnet Masking (VLSM), Classless Inter-Domain Routing (CIDR) and network standards. The student will develop skills on configuring a router, using the Cisco IOS Software, and configuring routing using static routes and routing protocols, including RIP version 1 & 2, EIGRP, and single area OSPF. Involves extensive lab work using router, switches, and simulations. NOTE: Must take 10-150-172 CCNA3&4 within one year of completion of 10-150-170 CCNA1&2. Prerequisite: Reading score of - COMPASS 80 or higher and Math score of - COMPASS 40 or higher.

10-150-172 CCNA3&4: Switching & WAN Access 3 credits
A continuation of CCNA1&2, this course focuses on switching concepts and WAN access. Topics include Virtual LANs (VLANs), switch configuration, LAN and WAN network design, Rapid Spanning Tree Protocol, trunking, VLAN Trunking Protocol (VTP), access lists, Network Address Translation (NAT), DHCP, wide area networks (WANs), WAN connections (cable, DSL, Frame Relay, and leased lines), Quality of Service (QoS), VPN basics, and network monitoring. Prerequisite: 10-150-170 (must follow 10-150-170 CCNA1&2 within one year).

Career Potential:

- Cisco Certified Networking Associate (CCNA)

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

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CompTIA A+ Computer Essentials Certificate

Program Number: 90-154-2

Certificate

Information Technology Program Cluster
Center for Agriscience and Technologies

Program offered at Madison Campuses

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

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.

Pre-Admission Skills

1. High school diploma, HSED or GED with a minimum grade point average of 2.0 or equivalent
2. General knowledge of Microsoft Windows

Certificate Application Process

To apply, see: Apply Online (on the Madison College website). [Create an ApplyWeb account](#) and follow the [instructions](#) to complete the [Online Certificate Application](#) before the [application deadline](#). Submit the \$15 non-refundable fee (payable by credit card, debit card or electronic check) with your application. Applicants may submit more than one certificate application per term using the Online Certificate Application; the same fees apply for each additional application.

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.

No more than 50% of the certificate credits may be through advanced standing.

Curriculum

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 fundamentals and an introduction to operating systems. Students completing through hands-on activities and labs, this course will be able to work with internal components of a computer, assemble a computer system, work with the basics of an operating system and get exposure to computer tasks such as installation, configuration, diagnosing, preventive maintenance and basic networking and operating systems. CompTIA's A+ Certification is a widely accepted IT industry standard certification for PC technology. This course prepares students for CompTIA's A+ Essentials exam (CompTIA A+ exam 220-701). Prerequisite: Reading score of - COMPASS 80 or higher and Math score of - COMPASS 40 or higher.

10-154-191 A+ IT Technician 3 credits
This course presents an advanced exposure to computer operating systems and hardware. Students learn the functionality of operating systems and hardware components as well as suggested best practices in support roles. Through hands-on activities and labs, students learn how to configure a computer, install operating systems and computer software, and troubleshoot hardware problems. This course prepares students for CompTIA's A+ Practical Application exam (CompTIA 220-702) Prerequisite: 10-154-189 Computer Hardware Essentials.

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

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Madison Area Technical College
 Information Technology—
**Computer Systems
 Administration Specialist**

Effective: 2011-2012

Program Number: 10-154-7

Associate in Applied Science Degree

Information Technology Program Cluster
 Center for Agriscience and Technologies
 Program offered at Madison Campuses

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

About the Program

Earn a degree in Computer Systems Administration while gaining the skills necessary to obtain key industry certifications such as the CompTIA A+, Microsoft Certified Technology Specialist (MCTS) and Microsoft Certified Information Technology Professional (MCITP) with the Windows Server specialization. Challenge yourself to learn the technologies valued by area employers including Microsoft Windows system administration for both client and server systems. Learn the fundamentals of data networking, operating systems support and systems integration to prepare for your information technology career. A guided on-the-job internship with an area employer helps students find the jobs they desire.

Typical job duties include: install, configure, administer and operate client and server systems including Microsoft Windows server, Windows client, Linux and Microsoft Exchange. Perform technical troubleshooting of computer systems and networks. Integrate the hardware and software required to support new initiatives. Install, maintain and troubleshoot Internet connectivity for services such as email, web and other Internet applications. Be responsible for critical system backups and plan for the restoration of computing services in the event of disasters. Demonstrate initiative as a member of an information technology team.

Requirements for Admission

- 1) High school diploma, HSED or GED with a minimum grade point average of 2.0 or equivalent
- 2) General knowledge of Microsoft Windows

NOTE: Students starting in the spring will take a minimum of 5 semesters to complete due to some courses being offered fall only or spring only.

Curriculum

The courses listed below outline the requirements for graduation for students entering this program in the 2011-2012 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		Credits	Hrs/week Lec-Lab
First Semester			
10-107-111	Careers in IT	1	1-0
10-150-101	Network Essentials	3	2-2
10-150-160	IT Security Awareness	1	1-0
10-154-184	Windows Client	3	2-2
10-154-189	Computer Hardware Essentials	3	2-2
10-801-195	Written Communication.....	3	3-0
10-809-197	<u>Contemporary American Society</u>	<u>3</u>	<u>3-0</u>
Total		17	

Second Semester			
10-152-104	Windows PowerShell	3	2-2
10-154-186	Windows Network Infrastructure.....	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
10-809-199	<u>Psychology of Human Relations.....</u>	<u>3</u>	<u>3-0</u>
Total		18	

SECOND YEAR

First Semester			
10-107-175	Job Search Preparation	1	1-0
10-150-162	Computer Systems Security *	3	2-2
10-154-188	Windows Active Directory *	3	2-2
10-154-190	Linux Server	3	2-2
10-809-166	Introduction to Ethics: Theory and Application	3	3-0
		<u>Elective.....</u>	<u>E</u>
Total		16	

Second Semester			
10-154-122	IT Service Concepts.....	3	2-2
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
		<u>Elective.....</u>	<u>E</u>
Total		18	

*Offered fall semester only

**Offered spring semester only

Graduation Requirement

All Prerequisite courses require the grade of C or better in prerequisite in Information Technology (150-, 152-, 154-, 107-) course(s). 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 -evel) or college transfer (20 -evel) courses.		
10-106-101	Introduction to Keyboarding	1 credit
10-150-170	CCNA 1&2: Network Routing Basics	5 credits
<i>Note: Can be used in lieu of 10-150-101</i>		
10-152-119	Introduction to Programming with JavaScript	3 credits
10-152-120	Website Development - XHTML	3 credits



Program Courses

10-150-101 Network Essentials 3 credits
 Develop fundamental networking skills including an understanding of network hardware, installation, security and troubleshooting in a corporate environment. Through classroom and hands-on activities, learn how computers exchange information and how the Internet functions. Prerequisite: Reading score of - COMPASS 80 or higher and Math score of - COMPASS 40 or higher.

10-150-162 Computer Systems Security 3 credits
 Introduces the basics of network security. The student is introduced to computer network vulnerabilities and threats and how to safeguard computer networks from those vulnerabilities and threats. This course exposes the student to network security planning, network security technology, network security organization and the legal and ethical issues associated with network security. Students learn the skills necessary for Security+ certification. Prerequisites: 10-150-160, 10-154-184 and one of the following: 10-150-101 or 10-150-170.

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 Windows' environments using PowerShell and developing scripts using basic programming logic. Prerequisite: 10-154-184.

10-154-122 IT Service Concepts 3 credits
 Introduces the "value added" customer service roles and responsibilities of an IT professional; the components of a successful IT support infrastructure, customer service as the bottom line for IT operations, the evolution of IT support, industry trends, teamwork, IT professional work habits. Explores listening, written and verbal communications skills and critical thinking skills to resolve incidents. Examines how to identify and defuse challenging customer behavior, solve and prevent problems, and the importance of documentation. Course addresses awareness of best practices of the ITIL framework.

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/ESX™ and VMware vCenter™ Server. Students are introduced to virtualization and storage management concepts using VMware server virtualization products. Prerequisite: 10-154-188 Windows Active Directory and 10-154-190 Linux Server.

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 70-620. 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) and Reading score of - COMPASS 80 or higher and Math score of - COMPASS 40 or higher.

10-154-186 Windows Network Infrastructure 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: 10-107-111, 10-154-184 and completion or concurrent enrollment in one of the following: 10-150-101 or 10-150-170.

10-154-188 Windows Active Directory 3 credits
 Gain the skills to administer and support a Windows Active Directory environment—and prepare for Microsoft Exam 70-640—a core requirement for the MCTS Windows Server Specialization. Gain practical experience managing a Windows Active Directory infrastructure, including configuration, backup and troubleshooting while preparing for Microsoft MCTS exam 70-640. Prerequisite: 10-154-186.

10-154-189 Computer Hardware Essentials 3 credits
 This course presents a comprehensive overview of computer fundamentals and an introduction to operating systems. Students completing through hands-on activities and labs, this course will be able to work with internal components of a computer, assemble a computer system, work with the basics of an operating system and get exposure to computer tasks such as installation, configuration, diagnosing, preventive maintenance and basic networking and operating systems. CompTIA's A+ Certification is a widely accepted IT industry standard certification for PC technology. This course prepares students for CompTIA's A+ Essentials exam (CompTIA A+ exam 220-701). Prerequisite: Working knowledge of Microsoft Windows (computer literacy, proficiency with a mouse, file management) and Reading score of - COMPASS 80 or higher and Math score of - COMPASS 40 or higher.

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: 10-150-101 or 10-150-170.

10-154-191 A+ IT Technician 3 credits
 This course presents an advanced exposure to computer operating systems and hardware. Students learn the functionality of operating systems and hardware components as well as suggested best practices in support roles. Through hands-on activities and labs, students learn how to configure a computer, install operating systems and computer software, and troubleshoot hardware problems. This course prepares students for CompTIA's A+ Practical Application exam (CompTIA 220-702). Prerequisites: 10-107-111 and 10-154-189.

10-154-194 Windows Server Pro 3 credits
 Complete your education in Windows Server Support—and prepare for Microsoft Exam 70-646—while learning the day to day skills required for supporting Windows web, infrastructure and application servers. Learn the essentials of Windows scripting and batch files and other desktop tools required to profile and monitor Windows Servers. Prerequisites: 10-154-186 and 10-154-188.

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, 10-150-162 and 10-154-188 or consent of instructor.

Additional Required Program Courses

10-107-111 Careers in IT 1 credit
 10-107-175 Job Search Preparation 1 credit
 10-150-160 IT Security Awareness 1 credit

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 Information Technology Professional (MCITP)

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

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Information Technology— Help Desk Support Specialist

Technical Diploma

Information Technology Program Cluster

Center for Agriscience and Technologies

Program offered at Madison Campuses

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

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.

Requirements for Admission

1. High school diploma, HSED or GED with a minimum grade point average of 2.0 or equivalent
2. General knowledge of Microsoft Windows
3. Proficiency in MS Word and Excel

NOTE: Students starting in the spring will take a minimum of 3 semesters to complete due to some courses being offered fall only or spring only.

Curriculum

The courses listed below outline the requirements for graduation for students entering this program in the 2011-2012 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

First Semester	Credits	Hrs/week Lec-Lab
10-103-136 Word-Intermediate	1	1-0
10-107-111 Careers in IT	1	1-0
10-150-160 IT Security Awareness.....	1	1-0
10-154-122 IT Service Concepts	3	2-2
10-154-146 Help Desk Tools and Techniques *	3	2-2
10-154-189 Computer Hardware Essentials.....	3	2-2
10-801-195 Written Communication	3	3-0
Total	15	

Second Semester

10-103-139 Excel-Intermediate	1	1-0
10-107-175 Job Search Preparation.....	1	1-0
10-150-101 Network Essentials	3	2-2
10-154-147 Supporting Emerging Technologies **	3	2-2
10-154-148 Help Desk Specialist Internship **	3	2-2
10-154-191 A+ IT Technician.....	3	2-2
Total	14	

*Offered fall semester only

**Offered spring semester only

Graduation Requirement

All Prerequisite courses require the grade of C or better in prerequisite in Information Technology (150-, 152-, 154-, 107-) course(s). All Information Technology courses require a grade of C or better in order to graduate.

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



Program Courses

10-107-111 Careers in IT 1 credit
Introduces students to the various careers available in the vast field of Information Technology and examines the Network Specialist, Programmer/Analyst, Web Programmer/Analyst, Computer Systems Administration 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 Job Search Preparation 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: IT students must have completed all IT courses in the first semester.

10-150-101 Network Essentials 3 credits
Develop fundamental networking skills including an understanding of network hardware, installation, security and troubleshooting in a corporate environment. Through classroom and hands-on activities, learn how computers exchange information and how the Internet functions.
Prerequisite: Reading score of - COMPASS 80 or higher and Math score of - COMPASS 40 or higher.

10-150-160 IT Security Awareness 1 credit
Provides a basic survey of the importance of IT security awareness and data confidentiality. This security awareness-training course walks users through every aspect of Information Security in a very broad, easy to understand way and explains to them the value of securing data, for both themselves and the organization. The class will introduce legislation, local, state and federal privacy policies and liability of individuals and institutions related to data confidentiality and integrity. The course will introduce risk management, security policies, and common threats and countermeasures. The course will also present best practices in access control and password policies.

10-154-122 IT Service Concepts 3 credits
Introduces the "value added" customer service roles and responsibilities of an IT professional; the components of a successful IT support infrastructure, customer service as the bottom line for IT operations, the evolution of IT support, industry trends, teamwork, IT professional work habits. Explores listening, written and verbal communications skills and critical thinking skills to resolve incidents. Examines how to identify and defuse challenging customer behavior, solve and prevent problems, and the importance of documentation. Course addresses awareness of 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 building a computer, fixing annoyances, computer diagnostics and technical problems beyond basic troubleshooting.
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 two job-shadowing assignments 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 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, 10-150-101, 10-154-147 and 10-154-191.

10-154-189 Computer Hardware Essentials 3 credits
This course presents a comprehensive overview of computer fundamentals and an introduction to operating systems. Students completing through hands-on activities and labs, this course will be able to work with internal components of a computer, assemble a computer system, work with the basics of an operating system and get exposure to computer tasks such as installation, configuration, diagnosing, preventive maintenance and basic networking and operating systems. CompTIA's A+ Certification is a widely accepted IT industry standard certification for PC technology. This course prepares students for CompTIA's A+ Essentials exam (CompTIA A+ exam 220-701). Prerequisite: Working knowledge of Microsoft Windows (computer literacy, proficiency with a mouse, file management) and Reading score of - COMPASS 80 or higher and Math score of - COMPASS 40 or higher..

10-154-191 A+ IT Technician 3 credits
This course presents an advanced exposure to computer operating systems and hardware. Students learn the functionality of operating systems and hardware components as well as suggested best practices in support roles. Through hands-on activities and labs, students learn how to configure a computer, install operating systems and computer software, and troubleshoot hardware problems. This course prepares students for CompTIA's A+ Practical Application exam (CompTIA 220-702). Prerequisites: 10-107-111 and 10-154-189.

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

10-801-195 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 Specialists
- 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.org. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

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Rev. 03/11

Information Technology— Information Security Certificate

Effective: 2011-2012

Program Number: 90-150-3

Certificate

Information Technology Program Cluster

Center for Agriscience and Technologies

Program offered at Madison Campuses

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

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, Security+ certification and Certified Information System Security Professional (CISSP) certification.

Unique Requirements for Admission

Student must have a CCNA certification OR at least two years of practical experience in the Networking field, specifically with Cisco routing and hardware essentials experience. Student also must have working knowledge of the Linux operating system. Second year Network Specialist program students may be considered.

Curriculum

FIRST YEAR		Credits	Hrs/week Lec-Lab
First Semester			
10-150-162	Computer Systems Security *	3	2-2
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
10-150-196	Intrusion Detection Systems **	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.

Certificate Application Process

To apply, see: Apply Online (on the Madison College website). [Create an ApplyWeb account](#) and follow the [instructions](#) to complete the [Online Certificate Application](#) before the [application deadline](#). Submit the \$15 non-refundable fee (payable by credit card, debit card or electronic check) with your application. Applicants may submit more than one certificate application per term using the Online Certificate Application; the same fees apply for each additional application.

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

10-150-162 Computer Systems Security 3 credits
Introduces the basics of network security. The student is introduced to computer network vulnerabilities and threats and how to safeguard computer networks from those vulnerabilities and threats. This course exposes the student to network security planning, network security technology, network security organization, and the legal and ethical issues associated with network security. In this class, students learn the skills necessary for Security+ certification. Prerequisite: grade of C or better in 10-150-160, 10-154-184 and one of the following 10-150-101 or 10-150-170 or acceptance into certificate.

**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. Prerequisite: grade of C or better in 10-150-162.

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. Prerequisite: 10-150-164 and completion or concurrent enrollment in 10-150-196.

10-150-194 Firewall/PVN 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: grade of C or better in 10-150-172 CCNA3&4: Switching and WAN Access or consent of instructor; and acceptance into certificate.

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: 10-150-164 and 10-150-194 or consent of instructor.

Career Potential:

- Information Security Technician
- Cyber Security Professional

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

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Rev. 03/10

Madison Area Technical College Information Technology— iPhone Applications Development Certificate

Effective: 2011-2012

Program Number: 90-152-9

Certificate

Information Technology Program Cluster

Center for Agriscience and Technologies

Program offered at Madison Campuses

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

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. Two classes are used to teach students the necessary skills to make them successful in iPhone Applications Development.

Unique Requirements for Admission

- Madison College IT programming students who have completed either 10-152-102 Advanced Visual Basic .NET Programming, 10-152-112 Advanced Java Programming, 10-152-141 C# Programming in Visual Studio.NET or 10-152-157 Ruby on Rails Development.

OR

- IT professionals with 2 years experience in an Object Oriented programming language (e.g. Java, Visual Basic .NET, C#, Ruby on Rails),

Certificate Application Process

To apply, see: Apply Online (on the Madison College website). [Create an ApplyWeb account](#) and follow the [instructions](#) to complete the [Online Certificate Application](#) before the [application deadline](#). Submit the \$15 non-refundable fee (payable by credit card, debit card or electronic check) with your application. Applicants may submit more than one certificate application per term using the Online Certificate Application; the same fees apply for each additional application.

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

Courses	Credits	Hrs/week	
		Lec	Lab
10-152-143 iPhone Applications Development *	3	2	2
10-152-153 Advanced iPhone Applications 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

10-152-143 iPhone Applications Development 3 credits

Introduces programming simple iPhone applications using Cocoa and Objective C. Students will learn basic Objective C concepts, iPhone 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 iPhone applications. Prerequisite: Must be enrolled in iPhone Applications Development Certificate or have obtained a grade of 'C' or better in one of the following: 10-152-102 Advanced Visual Basic .NET Programming, 10-152-112 Advanced Java Programming, 10-152-141 C# Programming in Visual Studio.NET or 10-152-157 Ruby on Rails Development.

10-152-153 Advanced iPhone Applications Development 3 credits

Focuses on advanced features of the iPhone for applications development, including GPS for location-aware applications, motion sensing, and network-aware applications. A portion of the class deals with application design issues including sharing applications. Prerequisite: 10-152-143 iPhone Applications Development.

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

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Rev. 03/11



Java Professional Developer Certificate

Program Number: 90-152-7

Certificate

Information Technology Program Cluster

Center for Agriscience and Technologies

Program offered at Madison Campuses

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

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.

Unique Requirements for Admission

- 1) Associate Degree in programming (e.g. IT Programmer/Analyst) OR 2 years experience in a programming language (e.g. COBOL, Visual Basic, etc.)
- 2) Experience using a relational database (e.g. Access, MySQL, SQL Server, Oracle)
- 3) Experience in basic web development using HTML.

Certificate Application Process

To apply, see: Apply Online (on the Madison College website). [Create an ApplyWeb account](#) and follow the [instructions](#) to complete the [Online Certificate Application](#) before the [application deadline](#). Submit the \$15 non-refundable fee (payable by credit card, debit card or electronic check) with your application. Applicants may submit more than one certificate application per term using the Online Certificate Application; the same fees apply for each additional application.

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.

No more than 50% of the certificate credits may be through advanced standing.

Curriculum

Courses	Credits	Hrs/week	
		Credits	Lec-Lab
10-152-111 Java Programming	3.....	2	2
10-152-112 Advanced Java Programming *	3.....	2	2
10-152-113 Enterprise Java 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

Courses

10-152-111 Introduction to 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.

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 Java topics within the J2EE application framework. Topics include JDBC, Enterprise JavaBeans, Servlets, JSPs, XML, JMS, JNDI, Web Services, custom tag libraries, web applications and enterprise applications. Prerequisite: 10-152-112.

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

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Rev. 06/11



LAMP Open Source Development Certificate

Program Number: 90-152-3

Certificate

Information Technology Program Cluster

Center for Agriscience and Technologies

Program offered at Madison Campuses

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

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.

Unique Requirements for Admission

Students must have a minimum of three years of related work experience or be second-year students in an Information Technology programming degree or have permission of the instructor to enroll for this certificate. The student is expected to have exposure to a relational database management system (RDBMS) (e.g., Microsoft Access, Microsoft SQL Server, Oracle, DB2 or an equivalent). The course 10-152-124 Introduction to Database may be taken if a student does not have work experience with an RDBMS. The student is also expected to have exposure to a programming language (e.g., COBOL, Visual Basic, C++, Java, etc.) either through professional experience or IT department coursework.

Certificate Application Process

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

		Credits	Hrs/week Lec-Lab
First Semester			
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.

10-152-166 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.

10-152-157 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: Acceptance into certificate and grade of C or better in 10-152-167 or 10-152-102 or 10-152-112.

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.

Career Potential:

- LAMP Web Developer
- Web Application Developer



Microsoft® Certified Information Technology Professional Certificate

Program Number: 90-154-7

Certificate

Information Technology Program Cluster

Center for Agriscience and Technologies

Program offered at Madison Campuses

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

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 Information Technology Professional (MCITP): Windows Server designation. The MCITP 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 2003 Server, Windows 2008 Server, Windows XP and Windows Vista. The tests that constitute the MCITP certification are also applicable to other Microsoft certifications. For further information on this and other Microsoft certifications, see the Microsoft website at www.microsoft.com/learning/http://www.microsoft.com/traincert/mcp.

Windows® is a registered trademark of Microsoft Corporation.

Unique Requirements for Admission

1. Students are expected to have exposure to Windows server and client administration and understand the basics of computer systems architectures.
2. A minimum of an associate degree in computer information systems, information technology, or business data processing, or a minimum of two years of related work experience, is required.
3. For students who do not have the above requirements, contact the Center for further options, such as pursuing the IT-Computer Systems Administration Specialist associate degree program.

Curriculum

Courses		Hrs/week	
		Credits	Lec-Lab
10-154-184	Windows Client.....	3.....	2-2
10-154-186	Microsoft Network Infrastructure	3.....	2-2
10-154-188	Windows Active Directory *	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.

Certificate Application Process

To apply, see: Apply Online (on the Madison College website). [Create an ApplyWeb account](#) and follow the [instructions](#) to complete the [Online Certificate Application](#) before the [application deadline](#). Submit the \$15 non-refundable fee (payable by credit card, debit card or electronic check) with your application. Applicants may submit more than one certificate application per term using the Online Certificate Application; the same fees apply for each additional application.

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

10-154-184 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 70-620. 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) and Reading score of - COMPASS 80 or higher and Math score of - COMPASS 40 or higher.

10-154-186 Windows Network Infrastructure 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. Prerequisite: 10-154-184, and completion or concurrent enrollment in one of the following: 10-150-101 or 10-150-170 or equivalent work experience or acceptance into certificate.

10-154-188 Windows Active Directory 3 credits

Gain the skills to administer and support a Windows Active Directory environment—and prepare for Microsoft Exam 70-640—a core requirement for the MCTS Windows Server Specialization. Gain practical experience managing a Windows Active Directory infrastructure, including configuration, backup and troubleshooting while preparing for Microsoft MCTS exam 70-640. Prerequisite: 10-154-186.

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. Prerequisites: 10-154-186 and 10-154-188.

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 Windows 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/ESX™ and VMware vCenter™ Server. Students are introduced to virtualization and storage management concepts using VMware server virtualization products. Prerequisite: 10-154-188 Windows Active Directory and 10-154-190 Linux Server.

Career Potential:

- Microsoft Certified Information Technology Professional

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

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Rev. 03/11

Madison Area Technical College
Information Technology—
Microsoft® Visual Studio.NET
Certificate

Effective: 2011-2012

Program Number: 90-152-5

Certificate

Information Technology Program Cluster

Center for Agriscience and Technologies

Program offered at Madison Campuses

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

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>.

Unique Requirements for Admission

Students must have a minimum of three years of related work experience or be second-year students in an Information Technology programming degree. The student is expected to have exposure to a relational database management system (RDBMS) (e.g., Microsoft Access, Microsoft SQL Server, Oracle, DB2 or an equivalent). The course 10-152-124, Introduction to Database, may be taken if a student does not have work experience with an RDBMS. The student is also expected to have exposure to a programming language (e.g., COBOL, Visual Basic, C++, Java, etc.) either through professional experience or IT department coursework.

Certificate Application Process

To apply, see: Apply Online (on the Madison College website). [Create an ApplyWeb account](#) and follow the [instructions](#) to complete the [Online Certificate Application](#) before the [application deadline](#). Submit the \$15 non-refundable fee (payable by credit card, debit card or electronic check) with your application. Applicants may submit more than one certificate application per term using the Online Certificate Application; the same fees apply for each additional application.



Curriculum

Courses		Credits	Hrs/week	
			Lec	Lab
10-152-101	Introduction to Visual Basic.NET Programming	3	2	2
10-152-102	Advanced Visual Basic.NET *	3	2	2
10-152-103	Web Application Development Using ASP.NET **	3	2	2
10-152-141	C# Programming in Visual Studio.NET * (optional)	(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

10-152-101 Introduction to Visual Basic.NET Programming 3 credits
 Teaches the basic concepts of VB.NET programming. Topics include the Visual Studio Integrated Development Environment, program logic constructs, event-driven programming techniques, and development in an object-oriented context.

10-152-102 Advanced Visual Basic.NET 3 credits
 The course 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: 10-152-101 and 10-152-124.

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: grade of C or better in 10-152-102.

Optional Course

10-152-141 C# Programming in Visual Studio.NET (optional) 3 credits
 This course will give developers the skills needed to develop applications using the C# programming environment within Microsoft Visual Studio.NET. The course will focus on language syntax, program structure and implementation guidelines for developing applications using the C# development environment. Prerequisite: one year of working knowledge or coursework in another programming language.

Visual Studio, .NET, C#, Visual Basic, ASP.NET, ADO.NET and Microsoft® are registered trademarks of Microsoft Corporation.

Career Potential:

- Visual Studio.NET Developer

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.

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

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

Rev. 03/10

Real world smart.

Information Technology— Network Security Specialist

Associate in Applied Science Degree

Information Technology Program Cluster

Center for Agriscience and Technologies

Program offered at Madison Campuses

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

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.

Requirements for Admission

1. High school diploma, HSED, or GED with a minimum grade point average of 2.0 or equivalent
2. General knowledge of Microsoft Windows

NOTE: Students starting in the spring will take a minimum of 5 semesters to complete due to some courses being offered fall only or spring only.

Program Courses

10-107-111 Careers in IT 1 credit

Introduces students to the various careers available in the vast field of Information Technology and examines the Network Specialist, Programmer/Analyst, Web Programmer/Analyst, Computer Systems Administration 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 Job Search Preparation 1 credit

Introduction to planning and organizing a job search in Information Technology. Activities include the development of a personalized job search plan, correspondence, resumé and portfolio. Prerequisite: IT students must have completed all IT courses in the first two semesters.

10-150-160 IT Security Awareness 3 credits

Provides a basic survey of the importance of IT security awareness and data confidentiality. This security awareness-training course walks users through every aspect of Information Security in a very broad, easy to understand way and explains to them the value of securing data, for both themselves and the organization. The class will introduce legislation, local, state and federal privacy policies and liability of individuals and institutions related to data confidentiality and integrity. The course will introduce risk management, security policies, and common threats and countermeasures. The course will also present best practices in access control and password policies.

Curriculum

The courses listed below outline the requirements for graduation for students entering this program in the 2011-2012 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

First Semester		Credits	Hrs/week Lec-Lab
10-107-111	Careers in IT	1	1-0
10-150-160	IT Security Awareness	1	1-0
10-150-170	CCNA1&2: Networking Routing Basics	5	3-4
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		16	

Second Semester

10-150-172	CCNA3&4: Switching and WAN Access	3	2-2
10-152-104	Windows PowerShell	3	2-2
10-154-186	Windows Network Infrastructure	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	Job Search Preparation	1	1-0
10-150-164	Penetration Testing/Network Defense *	3	2-2
10-150-185	Introduction to Computer Forensics *	3	2-2
10-152-105	Linux Shell *	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

10-150-193	Network Security Design **	3	2-2
10-150-194	Firewall/VPN Technologies **	3	2-2
10-150-196	Intrusion Detection Systems **	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	

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

All prerequisite courses require the grade of C or better in prerequisite in Information Technology (150-, 152-, 154-, 107-) course(s). All Information Technology courses require a grade of C or better in order to graduate.

Recommended Electives

Electives must be associate degree (10-level) or college transfer (20-level) courses		
10-150-150	VOIP Convergence Fundamentals *	3 credits
10-150-176	Intermediate Networking *	3 credits
10-152-119	Intro to Programming with JavaScript	3 credits
10-154-188	Windows Active Directory *	3 credits

*Offered fall semester only

**Offered spring semester only



Program Courses (continued)

**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: 10-150-172, 10-154-186, 10-154-190 and completion of or concurrent enrollment in 10-152-105.

**10-150-170 CCNA1&2: Networking and
Routing Basics 5 credits**

Introduction to Networking basics and routing with a focus on network terminology, protocols, local area networks (LANs), Open System Interconnection (OSI) model, cabling, routers and router programming, Ethernet, Internet Protocol (IP) addressing, subnetting, Variable Length Subnet Masking (VLSM), Classless Inter-Domain Routing (CIDR) and network standards. The student will develop skills on configuring a router, using the Cisco IOS Software, and configuring routing using static routes and routing protocols, including RIP version 1 & 2, EIGRP, and single area OSPF. Involves extensive lab work using router, switches, and simulations. NOTE: Must take 10-150-172: CCNA3&4 within one year of completion of 10-150-170 CCNA1&2. Prerequisite: Working knowledge of Microsoft Windows (computer literacy, proficiency with a mouse, file management) and Reading score of - COMPASS 80 or higher and Math score of - COMPASS 40 or higher.

10-150-172 CCNA3&4: Switching & WAN Access 3 credits

A continuation of CCNA1&2, this course focuses on switching concepts and WAN access. Topics include Virtual LANs (VLANs), switch configuration, LAN and WAN network design, Rapid Spanning Tree Protocol, trunking, VLAN Trunking Protocol (VTP), access lists, Network Address Translation (NAT), DHCP, wide area networks (WANs), WAN connections (cable, DSL, Frame Relay, and leased lines), Quality of Service (QoS), VPN basics, and network monitoring. Prerequisites: 10-107-111 and 10-150-170 (must follow 10-150-170: CCNA1&2 within one year).

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: 10-150-172, 10-154-186, 10-154-190 and completion of or concurrent enrollment in 10-152-105.

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: 10-150-164 and completion of or concurrent enrollment in 10-150-196.

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: 10-150-172

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: 10-150-164, 10-152-105 and completion of or concurrent enrollment in 10-154-194.

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, 10-150-164, 10-150-185, and 10-152-105.

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 Windows environments using PowerShell and developing scripts using basic programming logic. Prerequisite: 10-154-184.

10-152-105 Linux Shell 3 credits

This course is designed to introduce students who have basic knowledge of the Linux operating system to advanced command line techniques. During the course students will develop the ability to construct both single line and multi line reusable script files. Students will be required to automate simple tasks using the shell. Prerequisite: 10-152-104 and 10-154-190.

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 such as installing the operating system, configuring hardware devices and establishing network connectivity, you are also preparing for Microsoft Exam 70-620. 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) and Reading score of - COMPASS 80 or higher and Math score of - COMPASS 40 or higher.

10-154-186 Windows Network Infrastructure 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: 10-107-111, and 10-154-184 and completion or concurrent enrollment in one of the following: 10-150-101 or 10-150-170.

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: 10-150-101 or 10-150-170.

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.org. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

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Madison Area Technical College Information Technology— Network Specialist

Effective: 2011-2012

Program Number: 10-150-2

Associate in Applied Science Degree

Information Technology Program Cluster

Center for Agriscience and Technologies

Program offered at Madison Campuses

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

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 MCTS (Microsoft Certified Technology Specialist): Windows Vista Configuration and Configuring Windows Server 2008 Network Infrastructure, the CompTIA A+, and the CompTIA Network+ certifications, as well as CCNA Security.

Requirements for Admission

- 1) High school diploma, HSED, or GED with a minimum grade point average of 2.0 or equivalent
- 2) General knowledge of Microsoft Windows

NOTE: Students starting in the spring will take a minimum of 5 semesters to complete due to some courses being offered fall only or spring only.

Program Courses

10-107-111 Careers in IT 1 credit
Introduces students to the various careers available in the vast field of Information Technology and examines the Network Specialist, Programmer/Analyst, Web Programmer/Analyst, Computer Systems Administration 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 Job Search Preparation 1 credit
Introduction to planning and organizing a job search in Information Technology. Activities include the development of a personalized job search plan, correspondence, resumé and portfolio. Prerequisite: IT students must have completed all IT courses in the first two semesters. Prerequisite: 10-107-111. (over)



Curriculum

The courses listed below outline the requirements for graduation for students entering this program in the 2011-2012 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

First Semester	Credits	Hrs/week Lec-Lab
10-107-111 Careers in IT	1	1-0
10-150-160 IT Security Awareness.....	1	1-0
10-150-170 CCNA1&2: Networking and Routing Basics.....	5	3-4
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
Semester Total	16	

Second Semester

10-150-172 CCNA3&4: Switching and WAN Access.....	3	2-2
10-152-104 Windows PowerShell	3	2-2
10-154-186 Windows Network Infrastructure.....	3	2-2
10-154-189 Computer Hardware Essentials.....	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 Job Search Preparation	1	1-0
10-150-150 VOIP Convergence Fundamentals *	3	2-2
10-150-176 Intermediate Networking *	3	2-2
10-154-190 Linux Server.....	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
10-154-122 IT Service Concepts.....	3	2-2
10-809-197 Contemporary American Society.....	3	3-0
Elective.....	3	E
Semester Total	18	

* Offered fall semester only ** Offered spring semester only

Graduation Requirement

All Prerequisite courses require the grade of C or better in prerequisite in Information Technology (150-, 152-, 154-, 107-) course(s). 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

10-152-119 Introduction to Programming using JavaScript	3 credits
10-152-120 Website Development	3 credits
10-154-188 Windows Active Directory *	3 credits
10-154-193 Email in a Windows Environment **	3 credits

Program Courses (continued)

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 modifying the LAN and WAN to accommodate IP Telephony, configuring call features, provisioning voice trunks, and establishing voicemail. Cisco Call Manager Express, Cisco Unity Express Voicemail, and Cisco VoIP phones are used to configure and build a converged IP telephony infrastructure suitable for a small to medium business. Troubleshooting will be emphasized. Prerequisite: 10-150-172.

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.

10-150-170 CCNA1&2: Networking and Routing Basics 5 credits

Introduction to Networking basics and routing with a focus on network terminology, protocols, local area networks (LANs), Open System Interconnection (OSI) model, cabling, routers and router programming, Ethernet, Internet Protocol (IP) addressing, subnetting, Variable Length Subnet Masking (VLSM), Classless Inter-Domain Routing (CIDR) and network standards. The student will develop skills on configuring a router, using the Cisco IOS Software, and configuring routing using static routes and routing protocols, including RIP version 1 & 2, EIGRP, and single area OSPF. Involves extensive lab work using router, switches, and simulations. NOTE: Must take 10-150-172 CCNA3&4 within one year of completion of 10-150-170 CCNA1&2. Prerequisite: Working knowledge of Microsoft Windows (computer literacy, proficiency with a mouse, file management) and Reading score of - COMPASS 80 or higher and Math score of - COMPASS 40 or higher.

10-150-172 CCNA3&4: Switching & WAN Access 3 credits

A continuation of CCNA1&2, this course focuses on switching concepts and WAN access. Topics include Virtual LANs (VLANs), switch configuration, LAN and WAN network design, Rapid Spanning Tree Protocol, trunking, VLAN Trunking Protocol (VTP), access lists, Network Address Translation (NAT), DHCP, wide area networks (WANs), WAN connections (cable, DSL, Frame Relay, and leased lines), Quality of Service (QoS), VPN basics, and network monitoring. Prerequisites: 10-107-111 and 10-150-170 (must follow 10-150-170: CCNA1&2 within one year).

10-150-176 Intermediate Networking 3 credits

Students will install, configure, and secure access points and enable devices to associate to the WLAN. Students are introduced to computer network vulnerabilities and threats and learn to safeguard networks using current wireless technologies. Students will focus on the design, planning, implementation, operation, troubleshooting and securing of LANs and WLANs. Prerequisites: 10-150-160, 10-150-172, and 10-154-186.

10-150-194 Firewall/VPN Technologies 3 credits

Introduces the network security specialist to the various methodologies for defending a network. The student is introduced to the concepts, principles, types and topologies of firewalls to include packet filtering, proxy firewalls, application gateways, circuit gateways and stateful inspection. In this class, students learn the skills necessary for one of the CISCO Certified Security Professional (CCSP) certification exams. Prerequisite: 10-150-172.

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, 10-150-162 and 10-150-194.

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 Windows environments using PowerShell and developing scripts using basic programming logic. Prerequisite: 10-154-184.

10-154-122 IT Service Concepts 3 credits

Introduces the "value added" customer service roles and responsibilities of an IT professional; the components of a successful IT support infrastructure, customer service as the bottom line for IT operations, the evolution of IT support, industry trends, teamwork, IT professional work habits. Explores listening, written and verbal communications skills and critical thinking skills to resolve incidents. Examines how to identify and defuse challenging customer behavior, solve and prevent problems, and the importance of documentation. Course addresses awareness of best practices of the ITIL framework.

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 such as installing the operating system, configuring hardware devices and establishing network connectivity, you are also preparing for Microsoft Exam 70-620. 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) and Reading score of - COMPASS 80 or higher and Math score of - COMPASS 40 or higher.

10-154-186 Windows Network Infrastructure 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: Completion of 10-101-111, 10-154-184 and completion or concurrent enrollment in 10-150-101 or 10-150-170.

10-154-189 Computer Hardware Essentials 3 credits

This course presents a comprehensive overview of computer fundamentals and an introduction to operating systems. Students completing through hands-on activities and labs, this course will be able to work with internal components of a computer, assemble a computer system, work with the basics of an operating system and get exposure to computer tasks such as installation, configuration, diagnosing, preventive maintenance and basic networking and operating systems. CompTIA's A+ Certification is a widely accepted IT industry standard certification for PC technology. This course prepares students for CompTIA's A+ Essentials exam (CompTIA A+ exam 220-701). Prerequisite: Working knowledge of Microsoft Windows (computer literacy, proficiency with a mouse, file management) and Reading score of - COMPASS 80 or higher and Math score of - COMPASS 40 or higher.

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: 10-150-101 or 10-150-170.

Additional Required Program Courses

10-150-160 IT Security Awareness 1 credit

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:

- Network 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.org. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

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Rev. 03/11

PHP Professional Web Developer Certificate

Program Number: 90-152-8

Certificate

Information Technology Program Cluster
 Center for Agriscience and Technologies
 Program offered at Madison Campuses
 For information call: (608) 246-6800 or
 (800) 322-6282 Ext. 6800

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. Three classes are used to teach students the necessary skills to make them successful in PHP web development.

Unique Requirements for Admission

- 1) Associate Degree in programming (e.g. IT Programmer/Analyst) OR 2 years experience in a programming language (e.g. COBOL, Visual Basic, etc.)
- 2) Experience using a relational database (e.g. Access, MySQL, SQL Server, Oracle)
- 3) Experience in basic web development using HTML.

Certificate Application Process

To apply, see: Apply Online (on the Madison College website). [Create an ApplyWeb account](#) and follow the [instructions](#) to complete the [Online Certificate Application](#) before the [application deadline](#). Submit the \$15 non-refundable fee (payable by credit card, debit card or electronic check) with your application. Applicants may submit more than one certificate application per term using the Online Certificate Application; the same fees apply for each additional application.

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

Courses	Credits	Hrs/week	
		Lec	Lab
10-152-166 PHP Web Development with MySQL	3	2	2
10-152-167 <u>Advanced PHP and MySQL Web Development *</u>	<u>3</u>	<u>2</u>	<u>2</u>
Total	6		

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

**Offered Fall semester only*
***Offered Spring semester only*

Courses

- 10-152-166 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.
- 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.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. 03/11



Information Technology— Programmer / Analyst

Associate in Applied Science Degree

Information Technology Program Cluster

Center for Agriscience and Technologies

Program offered at Madison Campuses

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

About the Program

This two-year program meets the specific skills and knowledge requirements of technical and professional jobs within the Information Technology field for an entry-level web programmer/analyst working in a small to medium size organization. Training blends general educational development with required IT technical skills. Additional education and job experience lead to work in website design and management.

Requirement for Admission

- High school diploma, HSED, or GED with a minimum grade point average of 2.0 or equivalent
- General knowledge of Microsoft Windows

NOTE: Students starting in the spring will take a minimum of 5 semesters to complete due to some courses being offered fall only or spring only.

Program Courses

10-107-111 Careers in IT 1 credit
Introduces students to the various careers available in the vast field of Information Technology and examines the Network Specialist, Programmer/Analyst, Web Programmer/Analyst, Computer Systems Administration 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 Job Search Preparation 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. Prerequisites: Grade of C or better in 10-107-111 and students must have completed all IT courses in the first two semesters.

10-150-160 IT Security Awareness 1 credit
Provides a basic survey of the importance of IT security awareness and data confidentiality. This security awareness-training course walks users through every aspect of Information Security in a very broad, easy to understand way and explains to them the value of securing data, for both themselves and the organization. The class will introduce legislation, local, state and federal privacy policies and liability of individuals and institutions related to data confidentiality and integrity. The course will introduce risk management, security policies, and common threats and countermeasures. The course will also present best practices in access control and password policies.

10-152-119 Introduction to Programming with JavaScript 3 credits
Teaches the basic concepts of programming using the JavaScript language. Topics include: embedding JavaScript in HTML, event-driven programming techniques, program control logic, and an introduction to object-oriented programming. Prerequisite: Concurrent enrollment in 10-152-120 and Reading score of - COMPASS 80 or higher and Math score of - COMPASS 40 or higher.

Curriculum

The courses listed below outline the requirements for graduation for students entering this program in the 2011-2012 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		Credits	Hrs/week Lec-Lab
First Semester			
10-107-111	Careers in IT	1	1-0
10-150-160	IT Security Awareness	1	1-0
10-152-119	Introduction to Programming with JavaScript	3	2-2
10-152-120	Website Development-XHTML	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			
10-152-125	SQL Database Programming	3	2-2
10-152-130	Object-Oriented Design with UML	3	2-2
10-152-166	PHP Web Development with MySQL	3	2-2
10-154-190	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		Credits	Hrs/week Lec-Lab
10-107-175	Job Search Preparation	1	1-0
10-152-121	Advanced Website Development-XML	3	2-2
10-152-131	Object-Oriented Systems Analysis *	3	2-2
10-152-167	Advanced PHP & MySQL Web Development *	3	2-2
10-801-197	Technical Reporting	3	2-2
10-809-197	Contemporary American Society	3	3-0
Semester Total		16	

Second Semester			
10-152-157	Ruby on Rails Development **	3	2-2
10-152-168	AJAX and JavaScript Web Development **	3	2-2
10-152-174	IT Programmer/Analyst Internship **	3	2-2
10-809-166	Introduction to Ethics: Theory and Application	3	2-2
	Elective	6	E
Semester Total		18	

Graduation Requirement

All Prerequisite courses require the grade of C or better in prerequisite in Information Technology (150-, 152-, 154-, 107-) course(s). 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.

10-152-101	Introduction to Visual Basic.Net Programming	3
10-152-111	Introduction to Java Programming	3
10-152-141	C# Programming in Visual Studio.NET *	3
10-152-143	iPhone Applications Development *	3
10-152-153	Advanced iPhone Applications Development **	3

*Offered fall semester only

**Offered spring semester only



Program Courses (continued)

10-152-120 Website Development-XHTML 3 credits
Teaches the fundamentals and techniques of developing business websites using XHTML-compliant HTML. Topics include webpage design, tables, image manipulation, image maps, forms, cascading style sheets (CSS) and an introduction to JavaScript. All work is done directly with XHTML.
Prerequisite: working knowledge of Microsoft Windows (computer literacy, proficiency with a mouse, file management) and Reading score of - COMPASS 80 or higher and Math score of - COMPASS 40 or higher.

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 learn to use various software tools to use queries, forms and reports in developing comprehensive business applications using MS/Access. Prerequisite: Working knowledge of Microsoft Windows (computer literacy, proficiency with a mouse, file management) and Reading score of - COMPASS 80 or higher and Math score of - COMPASS 40 or higher.

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.

10-152-157 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: Grade of C or better in 10-152-167 or 10-152-102 or 10-152-112.

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 10-152-120.

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: 10-152-102, 10-152-112 or 10-152-167.

10-152-174 IT Programmer/Analyst 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: 10-152-102 or 10-152-167.

10-154-190 Linux Server 3 credits
Introduces Linux with a focus on system administration skills. Topics include installation, file and directory management, command execution, input/output redirection and pipes, shell scripts, network services, security, troubleshooting and the X Window system. Prerequisite: 10-152-119.

Career Potential:

- Web Application Developer
- Programmer/Analyst

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

- Systems Analyst
- Systems Programmer
- Database Programmer
- Database Administrator
- Project Manager
- Information Systems Department Manager

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. 06/11

Madison Area Technical College Information Technology— VMware Certified Professional Certificate

Effective: 2011-2012

Program Number: 90-154-3

Certificate

Information Technology Program Cluster

Center for Agriscience and Technologies

Program offered at Madison Campuses

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

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, administer, and troubleshoot VMware server virtualization infrastructures such as VMware vSphere. Upon completion of this course, you can take the examination to become a VMware Certified Professional.

VMware is the industry standard and most widely used server virtualization platform. VMware runs many of the IT infrastructures of small, medium, and large sized businesses world-wide. The VMware Certified Professional certification designates individuals who have demonstrated superior knowledge and skill levels with VMware virtualization infrastructures. It is a highly sought after certification for many prospective employers. For more information on this certification, see the VMware website at <http://mylearn.vmware.com/mgr/Reg/plan.cfm?plan=12457&ui=www>

Requirements: Associates Degree in Networking, Network Security, or Computer Systems Administration, or industry experience with Windows, Linux, and Networking.

Unique Requirements for Admission

- Madison College IT students who have completed both 10-154-188 Windows Active Directory and 10-154-190 Linux Server.

OR

- Minimum 2 years of system administration experience with windows Server, Linux, and network routers/switches

Certificate Application Process

To apply, see: Apply Online (on the Madison College website). [Create an ApplyWeb account](#) and follow the [instructions](#) to complete the [Online Certificate Application](#) before the [application deadline](#). Submit the \$15 non-refundable fee (payable by credit card, debit card or electronic check) with your application. Applicants may submit more than one certificate application per term using the Online Certificate Application; the same fees apply for each additional application.

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

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

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/ESX™ 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 both of the following 10-154-188 Windows Active Directory and 10-154-190 Linux Server.

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. 03/11

Information Technology— Web Analyst / Programmer

Associate in Applied Science Degree

Information Technology Program Cluster

Center for Agriscience & Technologies

Program offered at Madison Campuses

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

About the Program

The Web Analyst/Programmer 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.

Requirements for Admission

High school diploma, HSED, or GED with a minimum grade point average of 2.0 or equivalent and General knowledge of Microsoft Windows

NOTE: Students starting in the spring will take a minimum of 5 semesters to complete due to some courses being offered fall only or spring only.

Program Courses

10-107-111 Careers in IT 1 credit
Introduces students to the various careers available in the vast field of Information Technology and examines the Network Specialist, Programmer/Analyst, Web Programmer/Analyst, Computer Systems Administration 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 Job Search Preparation 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: IT students must have completed all IT courses in the first two semesters of the program in order to enroll in this course.

10-150-160 IT Security Awareness 1 credit
Provides a basic survey of the importance of IT security awareness and data confidentiality. This security awareness-training course walks users through every aspect of Information Security in a very broad, easy to understand way and explains to them the value of securing data, for both themselves and the organization. The class will introduce legislation, local, state and federal privacy policies and liability of individuals and institutions related to data confidentiality and integrity. The course will introduce risk management, security policies, and common threats and countermeasures. The course will also present best practices in access control and password policies.

10-152-101 Introduction to Visual Basic.NET Programming 3 credits
Teaches the basic concepts of VB.NET programming. Topics include the Visual Studio Integrated Development Environment, program logic constructs, event-driven programming techniques, and development in an object-oriented context. Prerequisite: 10-107-111 and 10-152-119.

Curriculum

The courses listed below outline the requirements for graduation for students entering this program in the 2011-2012 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
10-107-111	Careers in IT	1	1-0
10-150-160	IT Security Awareness.....	1	1-0
10-152-119	Introduction to Programming with JavaScript.....	3	2-2
10-152-120	Website Development-XHTML.....	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		Hrs/week	
10-152-101	Introduction to Visual Basic.NET Programming OR .3	3	2-2
10-152-111	Introduction to Java Programming	(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		Hrs/week	
10-107-175	Job Search Preparation.....	1	1-0
10-152-102	Advanced Visual Basic.NET * OR.....	3	2-2
10-152-112	Advanced Java Programming *	(3)	(2-2)
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		Hrs/week	
10-152-103	Web Application Development Using ASP.NET ** OR.....	3	2-2
10-152-113	Enterprise Java Programming **	(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	

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.		
10-101-111	Accounting 1-Principles	4 credits
10-150-170	CCNA1&2: Networking and Routing Basics	5 credits
10-152-141	C# Programming in Visual Studio.NET *	3 credits
10-152-143	iPhone Applications Development *	3 credits
10-152-153	Advanced iPhone Applications Development **	3 credits
10-152-157	Ruby on Rails Development **	3 credits
10-152-166	PHP Web Development with MySQL	3 credits

*Offered fall semester only

**Offered spring semester only



Program Courses (continued)

10-152-102 Advanced Visual Basic.NET 3 credits
The course 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: 10-152-101 and 10-152-124.

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: 10-152-102 and 10-152-120.

10-152-111 Introduction to 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: 10-107-111 and 10-152-119.

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 Java topics within the J2EE application framework. Topics include JDBC, Enterprise JavaBeans, Servlets, JSPs, XML, JMS, JNDI, Web Services, custom tag libraries, web applications and enterprise applications. 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. Prerequisite: concurrent enrollment in 10-152-120 and Reading score of - COMPASS 80 or higher and Math score of - COMPASS 40 or higher.

10-152-120 Website Development-XHTML 3 credits
Teaches the fundamentals and techniques of developing business websites using XHTML-compliant HTML. Topics include webpage design, tables, image manipulation, image maps, forms, tags, cascading style sheets (CSS) and an introduction to JavaScript. All work is done directly with XHTML. Prerequisite: Working knowledge of Microsoft Windows (computer literacy, proficiency with a mouse, file management) and Reading score of - COMPASS 80 or higher and Math score of - COMPASS 40 or higher.

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 learn to use various software tools to use queries, forms and reports in developing comprehensive business applications using MS/Access. Prerequisite: Working knowledge of Microsoft Windows (computer literacy, proficiency with a mouse, file management) and Reading score of - COMPASS 80 or higher and Math score of - COMPASS 40 or higher.

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, 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: 10-152-102 or 10-152-112.

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: grade of C or better in 10-152-121 and one of the following: 10-152-102, 10-152-112 or 10-152-167.

Career Potential:

- Web Developer

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

- Web Designer
- Web Architect

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. 03/11

Liberal Arts Transfer

Program Numbers: Arts - 20-800-1A
Science – 20-800-1S

Center for Arts and Sciences

Courses offered at Madison, Fort Atkinson, Portage, Reedsburg, and Watertown Campuses

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

Mission Statement

The Liberal Arts Transfer program serves students who wish to earn an Associate in Arts (AA) or Associate in Science (AS) degree and/or who intend to transfer to a four-year university. The program provides students with an excellent foundation for continuing in higher education.

By completing the AA or AS degree at Madison College, students will generally satisfy the first two years of general education requirements for four-year colleges and universities and obtain an educational foundation in English, humanities, mathematics, natural sciences, social and behavioral sciences, and world languages. Students who have a particular four-year institution in mind should verify the transferability of their courses to that school to satisfy requirements for the major and for graduation.

The Liberal Arts Transfer program provides courses in:

- Art
- English
- History
- Mathematics
- Music
- Natural Science
- Physical Education
- Social and Behavioral Science
- Speech and Performing Arts
- World Languages

Associate in Arts Degree 64 credits

Minimum Requirements Credits

English and Speech	9
Six credits must be in composition - English 1 and one other composition course (English 2 recommended) - and three credits must be in public speaking.	
Health/Wellness/Physical Education	1
Humanities/Fine Arts	15
Courses must be from at least <u>three</u> disciplines; one course in literature is required. Select from art appreciation/history, creative writing, drama, film, literature, mass communication, music history or theory, philosophy, and world language. A maximum of three credits of studio/hands-on courses in art, creative writing, drama, and music may be applied.	
Mathematics and Natural Science.....	11
Intermediate Algebra meets the minimum requirement in mathematics. Select one biological science and one physical science; one of the science courses must include a laboratory.	
Social Science.....	15
Select from at least <u>three</u> disciplines: anthropology, economics, government, history, psychology, and sociology.	
Electives.....	13
Select college transfer courses beyond the minimum requirements. One credit of health and physical education beyond the Health/Wellness/Physical Education credit may be selected. A maximum of six credits from a two-year occupational/applied associate degree program may be used.	
Ethnic Studies	
One course required. Course may also count toward Humanities/Fine Arts, Social Science, or Electives.	
World Language	
May be met with one year in high school with a grade of 'C' or better OR one semester in college. College course may also count toward Humanities/Fine Arts or Electives.	

Associate in Science Degree 64 credits

Minimum Requirements Credits

English and Speech	9
Six credits must be in composition - English 1 and one other composition course (English 2 recommended) - and three credits must be in public speaking.	
Health/Wellness/Physical Education	1
Humanities/Fine Arts	9
Courses must be from at least <u>two</u> disciplines; one course in literature is required. Select from art appreciation/history, creative writing, drama, film, literature, mass communication, music history or theory, philosophy, and world language. A maximum of three credits of studio/hands-on courses in art, creative writing, drama, and music may be applied.	
Mathematics and Natural Science.....	20
Calculus and Analytic Geometry 1 must be completed. Select one biological science and one physical science; both of the science courses must include a laboratory.	
Social Science.....	9
Select from at least <u>two</u> disciplines: anthropology, economics, government, history, psychology, and sociology.	
Electives.....	16
Select college transfer courses beyond the minimum requirements. One credit of health and physical education beyond the Health/Wellness/Physical Education credit may be selected. A maximum of six credits from a two-year occupational/applied associate degree program may be used.	
Ethnic Studies	
One course required. Course may also count toward Humanities/Fine Arts, Social Science, or Electives.	
World Language	
May be met with one year in high school with a grade of 'C' or better OR one semester in college. College course may also count toward Humanities/Fine Arts or Electives.	



Courses

		Hrs/week		Hrs/week	
		Credits	Lec-Lab	Credits	Lec-Lab
801 English					
20-801-201	English 1.....	3	3-0		
20-801-202	English 2.....	3	3-0		
20-801-203	Advanced Composition.....	3	3-0		
20-801-204	Introduction to Literature.....	3	3-0		
20-801-207	World Indigenous Literatures.....	3	3-0		
20-801-210	American Short Story.....	3	3-0		
20-801-212	Special Topics in Ethnic Literature.....	3	3-0		
20-801-213	Native American Literature.....	3	3-0		
20-801-214	African American Literature.....	3	3-0		
20-801-215	British Literature 1.....	3	3-0		
20-801-216	British Literature 2.....	3	3-0		
20-801-217	American Literature 1.....	3	3-0		
20-801-218	American 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		
20-801-221	Literature and Popular Culture.....	3	3-0		
20-801-222	U.S. Latino Literature.....	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		
20-801-228	Literature in the Wild.....	3	2-2		
20-801-229	Contemporary Literature.....	3	3-0		
20-801-230	Classical Mythology.....	3	3-0		
20-801-240	Creative Writing.....	3	3-0		
20-801-241	Creative Writing/Fiction.....	3	3-0		
20-801-242	Creative Writing/Drama.....	3	3-0		
20-801-243	Creative Writing/Poetry.....	3	3-0		
20-801-244	Creative Writing/Nonfiction.....	3	3-0		
20-801-245	News Writing and Reporting.....	4	6-0		
20-801-246	Feature Writing.....	4	4-0		
20-801-247	Internship/Professional Writing.....	2	2-0		
20-801-249	Creative Writing/Film Writing.....	3	3-0		
20-801-250	Women in Literature.....	3	3-0		
20-801-251	Intro to Mass Communications.....	4	4-0		
20-801-252	World Issues Journalism.....	4	4-0		
20-801-253	Documentary Storytelling.....	3	3-0		
20-801-263	Editing for Workplace & Professional Publications.....	3	3-0		
20-801-270	Peer Tutoring Practicum.....	3	3-0		
802 World Languages					
20-802-200	Spanish 1 (1st Semester).....	3	4-0		
20-802-201	Spanish 1 (2nd Semester).....	3	4-0		
20-802-211	Spanish 1 or Spanish 1 (Refresh).....	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		
20-802-225	Study Tour in France.....	2	2-0		
20-802-230	Intro to Mandarin Chinese 1.....	3	3-0		
20-802-231	Intro to Mandarin Chinese 2.....	3	3-0		
20-802-240	Intro to Modern Arabic 1.....	3	3-0		
20-804-241	Intro to Modern Arabic 2.....	3	3-0		
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		
20-803-211	American History 1607-1865.....	3	3-0		
20-803-212	American History 1865 to the Present.....	3	3-0		
20-803-213	History of the American West.....	3	3-0		
20-803-214	Native American History.....	3	3-0		
20-803-215	American History 1945 to the Present.....	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		
803 History (Continued)					
20-803-225	The World in the Twentieth Century.....	3	3-0		
20-803-226	East Asian Civilization.....	3	3-0		
20-803-229	Vietnam and America:1945-Present.....	3	3-0		
20-803-230	Women in History.....	3	3-0		
20-803-232	History Study Tour in France.....	2	2-0		
20-803-238	Intro to North American Latino/Chicano Histories.....	3	3-0		
20-803-240	African-American History.....	3	3-0		
804 Mathematics					
20-804-200	Principles of Geometry.....	3	5-0		
20-804-201	Intermediate Algebra.....	4	3-2		
20-804-202	Intermediate Algebra 1.....	3	2-2		
20-804-203	Intermediate Algebra 2.....	3	2-2		
20-804-206	Introduction to Computer Use.....	4	3-2		
20-804-207	Introduction to Computer Programming.....	2	2-2		
20-804-208	Computer Science.....	4	3-2		
20-804-210	Math for Elementary Teachers.....	3	3-0		
20-804-211	Quantitative Reasoning.....	3	2-2		
20-804-212	College Algebra.....	3	2-2		
20-804-213	Trigonometry.....	3	2-2		
20-804-220	Finite Mathematics.....	3	2-2		
20-804-221	Calculus Methods for Business and Social Sciences 1.....	5	5-0		
20-804-228	Calculus w Algebra & Trigonometry I.....	5	5-0		
20-804-229	Mathematical Analysis.....	5	5-0		
20-804-230	Calculus w Algebra & Trigonometry II.....	5	5-0		
20-804-231	Calculus and Analytic Geometry 1.....	5	5-0		
20-804-232	Calculus and Analytic Geometry 2.....	5	5-0		
20-804-233	Calculus 3.....	5	5-0		
20-804-240	Basic Statistics.....	4	3-2		
20-804-241	Intro to Engineering Statistics.....	3	3-2		
20-804-255	Techniques in Ordinary Differential Equations.....	3	3-0		
20-804-256	Elementary Matrix and Linear Algebra.....	3	3-0		
805 Music					
20-805-204	Music Ensemble.....	1	2-0		
20-805-205	Class Voice 1.....	1	1-0		
20-805-206	Class Voice 2.....	1	1-0		
20-805-207	World Music.....	3	3-0		
20-805-209	Vocal Jazz Ensemble.....	1	2-0		
20-805-227	Music Appreciation.....	3	3-0		
20-805-260	Music Theory Fundamentals.....	3	3-0		
20-805-261	Music Theory 1.....	3	3-0		
20-805-262	Music Theory 2.....	3	3-0		
20-805-263	Jazz History.....	3	3-0		
20-805-264	Great Composers in Music.....	3	3-0		
20-805-267	Aural Skills 1.....	1	2-0		
20-805-268	Aural Skills 2.....	1	2-0		
20-805-270	Madison College Chorale.....	1	2-0		
20-805-271	Madison College Chorale 2.....	1	2-0		
20-805-272	Madrigal Choir.....	1	2-0		
20-805-278	History of Pop and Rock 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					
20-806-200	Liberal Arts Chemistry.....	5	4-2		
20-806-201	General, Organic and Biological Chemistry.....	5	4-2		
20-806-203	Introduction to Zoology.....	5	3-4		
20-806-206	General Anatomy and Physiology.....	4	3-2		
20-806-207	Anatomy and Physiology 1.....	4	3-2		
20-806-208	Anatomy and Physiology 2.....	4	3-2		
20-806-209	College Chemistry 1.....	5	4-3		
20-806-212	College Chemistry 2.....	5	4-3		
20-806-213	Organic Chemistry 1.....	5	4-3		
20-806-214	Organic Chemistry 2.....	5	4-3		

Courses

		Hrs/week			Hrs/week
		Credits	Lec-Lab		Credits Lec-Lab
806 Natural Science (continued)					
20-806-215	Botany	5	3-4		
20-806-220	Physics of Everyday Life	3	3-0		
20-806-221	University Physics 1	5	4-3		
20-806-222	University Physics 2	5	4-3		
20-806-223	College Physics 1—Calculus Based	5	5-3		
20-806-224	College Physics 2—Calculus Based	5	5-3		
20-806-226	Introduction to Human Biology	5	4-2		
20-806-231	Biology of Human Aging	4	4-0		
20-806-241	Earth Science	3	3-0		
20-806-243	Survey of Astronomy	4	4-0		
20-806-244	General Geology	4	3-2		
20-806-245	Weather and Climate	3	3-0		
20-806-246	Survey of Oceanography	3	3-0		
20-806-265	Survey of Biochemistry	4	4-0		
20-806-273	Microbiology	4	3-2		
20-806-274	General Microbiology	5	3-4		
20-806-280	Environmental Issues	4	4-0		
20-806-281	Ecology and Conservation Biology	3	3-0		
20-806-282	Principles of Ecology	4	3-3		
20-806-284	Field Ecology Workshop	3	3-0		
20-806-285	Bringing Sciences to the Twenty-first Century	3	3-0		
20-806-286	Environmental Science	4	4-3		
807 Physical Education					
20-807-205	Distance Running for Fitness	1	2-0		
20-807-207	Beginning Triathlon	1	2-0		
20-807-209	Baseball Conditioning	1	2-0		
20-807-210	Conditioning/Weight Training	1	2-0		
20-807-212	Advanced Weight Training	1	2-0		
20-807-221	Basketball Conditioning	1	2-0		
20-807-223	Beginning Volleyball	1	2-0		
20-807-224	Intermediate Volleyball	1	2-0		
20-807-228	Water Safety Instructor	1	2-0		
20-807-229	Swimming for Fitness	1	2-0		
20-807-230	Beginning Swimming	1	2-0		
20-807-231	Intermediate Swimming	1	2-0		
20-807-232	Water Aerobics	1	2-0		
20-807-233	Lifeguard Training	2	2-0		
20-807-236	Beginning Tennis	1	2-0		
20-807-238	Beginning Racquetball	1	2-0		
20-807-239	Intermediate Racquetball	1	2-0		
20-807-240	Beginning Golf	1	2-0		
20-807-241	Intermediate Golf	1	2-0		
20-807-245	Social Dance	1	2-0		
20-807-246	Modern Dance 1	1	2-0		
20-807-247	Jazz 1	1	2-0		
20-807-248	Ballet	1	2-0		
20-807-249	Tap Dance	1	2-0		
20-807-250	Badminton	1	2-0		
20-807-251	Jazz 2	1	2-0		
20-807-252	Pilates	1	2-0		
20-807-253	Archery	1	2-0		
20-807-254	Yoga	1	2-0		
20-807-255	Prevention and Care of Athletic Injuries	2	2-0		
20-807-260	Martial Arts Fundamentals	1	2-0		
20-807-264	Intermediate Yoga	1	2-0		
20-807-266	Wellness Today	2	3-0		
20-807-271	Bicycle Conditioning	1	2-0		
20-807-282	Step Aerobics	1	2-0		
20-807-283	Aerobic Dance	1	2-0		
20-807-289	Aerobics and Weight Training	1	2-0		
809 Social and Behavioral Science					
20-809-201	Human Sexuality	3	3-0		
20-809-202	Social Problems	3	3-0		
20-809-203	Introduction to Sociology	3	3-0		
20-809-204	Marriage and the Family	3	3-0		
20-809-205	Contemporary Society	3	3-0		
20-809-206	Women in Society: Social Institutions and Social Change	3	3-0		
20-809-207	Criminology	3	3-0		
20-809-210	Men: Social and Psychological Perspectives	3	3-0		
20-809-211	Macroeconomics	3	3-0		
20-809-212	Microeconomics	3	3-0		
20-809-214	Introduction to International Economics	3	3-0		
20-809-215	Education in a Pluralistic Society	3	3-0		
20-809-217	Race, Class, Gender	3	3-0		
20-809-218	Law and Society	3	3-0		
20-809-220	American Foreign Policy	3	3-0		
20-809-221	American National Government	3	3-0		
20-809-222	State and Local Government	3	3-0		
20-809-223	International Relations	3	3-0		
20-809-224	Government Practicum	3	0-8		
20-809-225	Social Psychology	3	3-0		
20-809-227	Political Theory	3	3-0		
20-809-228	Environmental Economics	3	3-0		
20-809-229	Social Movements	3	3-0		
20-809-231	Introduction to Psychology	3	3-0		
20-809-233	Developmental Psychology	3	3-0		
20-809-236	Applied Psychology	3	3-0		
20-809-237	Abnormal Psychology	3	3-0		
20-809-238	Introduction to Health Psychology	3	3-0		
20-809-239	Human Development in Infancy and Childhood	3	3-0		
20-809-240	Introduction to Latin America	3	3-0		
20-809-242	Introduction to Public Policy	3	3-0		
20-809-243	Introduction to Comparative Politics	3	3-0		
20-809-244	Russian Politics: An Introduction to Political Area Studies	3	3-0		
20-809-245	Latin American Politics: An Introduction to Political Area Studies	3	3-0		
20-809-246	Introduction to African Politics	3	3-0		
20-809-247	Introduction to East Asian Politics	3	3-0		
20-809-251	Sociology of Middle East and North Africa	3	3-0		
20-809-260	Introduction to Philosophy	3	3-0		
20-809-261	Logic and Critical Thinking	3	3-0		
20-809-262	Ethics: Theory and Application	3	3-0		
20-809-263	East/West Worldviews	3	3-0		
20-809-264	Reason in Communication	3	3-0		
20-809-266	Ethics in Medicine	3	3-0		
20-809-267	Leadership as an Art	3	3-0		
20-809-268	Social Ethics	3	3-0		
20-809-269	Energy and Society	3	3-0		
20-809-271	Families in Transition	3	3-0		
20-809-273	Aging and Social Problems	3	3-0		
20-809-274	Leadership Ethics	3	3-0		
20-809-275	Sociology of Religion	3	3-0		
20-809-276	Business Ethics	3	3-0		
20-809-277	Couple Relationships	1	1-0		
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		
20-809-284	The Anthropology of Race, Ethnicity and Nationhood	3	3-0		
20-809-285	The Anthropology of Myth, Magic and Religion	3	3-0		
20-809-286	Anthropology of Globalization & Multiculturalism	3	3-0		
20-809-287	Anthropology of Islamic Societies & Cultures	3	3-0		

Courses

		Hrs/week	
		Credits	Lec-Lab
810 Speech and Performing Arts			
20-810-201	Fundamentals of Speech Composition.....	3	3-0
20-810-205	Interpersonal and Small Group Communication	3	3-0
20-810-211	Fundamentals of Oral Interpretation	3	3-0
20-810-230	Introduction to Drama	3	3-0
20-810-231	Theater Production.....	3	3-0
20-810-233	Literature of the Theater	3	3-0
20-810-235	Stagecraft 1	3	3-0
20-810-236	Stagecraft 2	3	3-0
20-810-237	Creating Original Theater.....	3	3-0
20-810-241	Costume Design Workshop	1	1-0
20-810-250	Introduction to Film.....	3	2-2
20-810-252	Survey of Radio, TV and Film	3	2-2
20-810-254	The History of World Cinema.....	3	2-2
20-810-258	Forensic Practicum 1	1	0-2
20-810-259	Forensic Practicum 2	1	0-2
20-810-260	Drama Practicum	1-2	0-2
20-810-262	Acting 1	3	3-0
20-810-263	Acting 2	3	3-0
20-810-268	Forensic Practicum 3	1	0-2
20-810-269	Forensic Practicum 4	1	0-2
20-810-270	Movement Theory and Training for Actors.....	1	0-2
815 Art			
20-815-200	Introduction to Art History	3	3-0
20-815-201	Design Fundamentals	3	3-3
20-815-202	Color and Design	3	3-3
20-815-203	Three-Dimensional Design	3	3-3
20-815-205	Drawing Fundamentals	3	3-3
20-815-206	Introduction to Studio Painting	2	2-2
20-815-210	Art History: The Modern Era	3	3-0
20-815-211	Women in the Arts.....	1	1-0
20-815-215	Drawing 2	3	3-0
20-815-219	Life Drawing	3	3-3
20-815-220	Advanced Life Drawing	3	3-3
20-815-234	Photography.....	3	3-3
20-815-235	Creative Photography	3	3-3
20-815-236	Advanced Creative Photography	3	3-3
20-815-241	Painting 1	3	3-3
20-815-242	Painting 2	3	3-3
20-815-253	Jewelry 1–Art Metal.....	3	3-3
20-815-254	Jewelry 2–Art Metal.....	3	3-3
20-815-286	Serigraphy.....	3	3-3
20-815-290	Ceramics 1	3	3-3
20-815-291	Ceramics 2	3	3-3
20-815-292	Watercolor 1	3	3-3
20-815-294	Sculpture 1	3	3-3
20-815-295	Sculpture 2	3	3-3
890 Student Success			
20-890-200	College Success	3	3-0

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.

Engineering Transfer Blueprint Program

Program Number: 20-800-1S

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

Center for 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

Students apply to Madison Area Technical College as a Liberal Arts Transfer student under the program code of 20-800-1S.

Eligibility: Students must be enrolled as first-year college students at Madison Area Technical College and sign a [Declaration of Intent to Participate](#) form prior to the completion of 24 college transfer credits at Madison Area Technical College. 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](#).

Curriculum

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		Hrs/week
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		Hrs/week
First Semester	Credits	Lec-Lab
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		Hrs/week
20-806-224 University Physics 2-Calculus Based**	5	5-3
20-804-241 Introduction to Engineering Statistics***	3	4-1
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-XXX	Matrix and Linear Algebra	
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
20-806-203	Introduction to Zoology	5 credits
20-806-209	Organic Chemistry 1	5 credits
20-806-212	Organic Chemistry 2	5 credits
20-806-244	General Geology	4 credits
20-809-211	Macroeconomics	3 credits
20-809-212	Microeconomics	3 credits
20-809-228	Environmental Economics	3 credits

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.



Ethnic Studies Certificate

Program Number: 90-809-1

Certificate

Center for Arts and Sciences

Program offered at Madison Campus

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

About the Certificate

Ethnic studies courses explore the position of ethnic and racial minorities in the history, culture, and society of the United States. These courses develop philosophical insights and theoretical tools that encourage further exploration of the entire spectrum of society and culture in the U.S.

Why Should I Take An Ethnic Studies Course:

People of color have contributed significantly to the making of America, but often they are not given their full due. In the past, the voices of racial and ethnic minorities have been silenced. Consequently, their faces are relegated to the shadows; they have been ignored and forgotten.

Ethnic Studies courses are designed to nurture appreciation of those often silenced voices and forgotten lives. An ethnic studies course may be your opportunity to begin your own exploration of the vitally important contributions that people of color have made to American history, culture, and society.

These courses also provide an opportunity to examine critically the phenomena of race and ethnicity. What do we mean by race and ethnicity? Why do Americans expend so much energy and effort creating and maintaining the social divisions that we call race and ethnicity? And further, how have history, culture, and society been shaped by—and simultaneously been shapers of—our ideas about race and ethnicity?

Certificate Outcomes

Interact in the workplace with sensitivity to issues arising from political, economical, and cultural differences.
Critically interpret and value cultural traditions, art, and issues throughout your life.

Advocate for social justice in community and service groups.
Promote respect and equity in society by applying what you have learned while earning this certificate.

Curriculum

		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
20-809-284	Anthropology of Race, Ethnicity and Nationhood.....	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 Ethnic Studies director.

Certificate Application Process

To apply, see: Apply Online (on the Madison College website). [Create an ApplyWeb account](#) and follow the [instructions](#) to complete the [Online Certificate Application](#) before the [application deadline](#). Submit the \$15 non-refundable fee (payable by credit card, debit card or electronic check) with your application. Applicants may submit more than one certificate application per term using the Online Certificate Application; the same fees apply for each additional application.

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

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.

20-809-284 Anthropology of Race, Ethnicity and Nationhood 3 credits
Concerns and conflicts arising from how human beings think about, talk about and act upon ideas about race, ethnicity, and nationhood are discussed in class. Conflicts such as wars, crimes, and injustices perpetrated in the name of some racial, ethnic, or national entity are discussed. Prerequisite: any college-level social science course.

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.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. 03/10

Journalism

Program Number: 90-801-2

Certificate

Center for Arts and Sciences

Program offered at Madison Campus

For information call: (608) 246-6246 or 258-2389
(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.

- **News/Feature Writer:** 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

Graduates of 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

News/Feature Writer

		Credits	Hrs/week Lech-Lab
Four Required Courses			
20-801-251	Intro to Mass Communication	4	4-0
20-801-245	Newswriting and Reporting	4	4-0
20-801-246	Feature Writing	4	4-0
20-801-247	Internship/Professional Writing	2	2-0
Total		14	

One Elective

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

20-801-252	World Issues Journalism	4	4-0
20-801-253	Documentary Storytelling	3	3-0
20-801-263	Editing for Workplace and Professional Pubs	3	3-0
Total		(at least) 3	

Note:

- Students must earn a grade of BC or higher in all courses to graduate.
- In addition to the successful completion of 17 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.

)S /

Certificate Application Process

To apply, see: Apply Online (on the Madison College website). [Create an ApplyWeb account](#) and follow the [instructions](#) to complete the [Online Certificate Application](#) before the [application deadline](#). Submit the \$15 non-refundable fee (payable by credit card, debit card or electronic check) with your application. Applicants may submit more than one certificate application per term using the Online Certificate Application; the same fees apply for each additional application.

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.

No more than 50% of the certificate credits may be through advanced standing.



Courses

20-801-245 Newswriting and Reporting 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.

20-801-247 Internship/Professional Writing 2 credits

Students will complete a 96-hour professional writing internship. Students will spend the semester working as an intern in an area of journalism or public relations that they find most interesting. Examples include magazines; newspapers, public and commercial radio, public and commercial television, book publishing, public relations, and Web communications. Students can find their own placed to intern, or they can work together with the course instructor to secure an internship for the semester. Prerequisites: 1) Intro to Mass Communication 20-801-251, 2) Newswriting/Reporting 20-801-245, or Feature Writing 20-801-246.

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.

20-801-263 Editing for Workplace/Professional 3 credits

Editing for Workplace and Professional Publications gives an overview of techniques used by editors to prepare documents for production. State-of-the-art usability guidelines and editing and testing methods are stressed throughout the course. Attention to the design and visual appeal of texts is considered an inherent part of the editor's responsibility. The course requires the students to complete a series of editing projects, in print and electronic formats. The course assignments reflect the traditional "levels of edit" model, which stresses all aspects of the editing process, including research and fact checking, page design, usability, content editing, stylistic issues, copyediting, and liability and other legal issues. Prerequisite: 1) English 1, 20-801-201, or Written Communication, 10-801-195; 2) Technical Communications, 20-801-260, or instructor's consent.

Career Potential:

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

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

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Rev. 03/10

Accounting

Program Number: 10-101-1

Associate in Applied Science Degree

Accounting & Finance Program Cluster

Center for 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.

Requirements for Admission

- 1) High school diploma, HSED or GED with a minimum grade point average of 2.0 or equivalent

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 concurrent enrollment in Math of Finance, 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 Accounting 1-Principles, 10-101-111 and prerequisite or co-requisite: Math of Finance, 10-804-144.

Curriculum

The courses listed below outline the requirements for graduation for students entering this program in the 2011-2012 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 (myMadisonCollege) account for specific graduation requirements. Program requirements are subject to change.

FIRST YEAR		Credits	Hrs/week Lec-Lab
First Semester			
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	2.25-.75
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
10-801-196	Oral/Interpersonal Communication	3	3-0
10-809-199	Psychology of Human Relations.....	3	3-0
Semester Total		17	

SECOND YEAR

First Semester		Credits	Hrs/week Lec-Lab
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 & App 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
	<u>Elective.....</u>	<u>3</u>	<u>E</u>
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 occupational specific 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)

10-101-121 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.

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, timing of the recognition of revenue, and earnings per share. Special topics included are taxes, long-term investments, and leases. Further consideration is applied to errors and their correction, and statements of cash flow. 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: income, deductions, credits, depreciation, gains and losses, and sole proprietorship taxation. The course requires the preparation of a series of individual income tax returns.

10-101-124 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 or concurrent enrollment.

10-101-125 Cost Management 4 credits
Areas emphasized include job order cost, process cost, standard costs, joint cost and budgets. Cost-profit-volume relationships and other cost systems used in business decision making require that students perform accounting procedures to accumulate and record the cost data typical of a business environment. 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. Prerequisite: 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. Prerequisite: 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. Contracts, sales, bailments, agency, employment, property law, torts, criminal law, marital property and bankruptcy are emphasized. 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.

10-804-144 Math of Finance 3 credits
This course takes an algebraic approach to solving financial problems. Topics include personal finance, mathematics of retailing, mathematics of banking, and statistical applications. Major emphasis is placed on solving problems involving the time value of money by using a financial calculator. The material in this course develops a sound base for subsequent courses by using an analytical approach to problem solving. Prerequisite: appropriate score on COMPASS test or Elementary Algebra with Applications, 10-804-110.

Recommended Electives

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

- 10-101-110 Accounting 1–Problems (Lab) 1 credit
- 10-101-112 Accounting 2–Problems (Lab) 1 credit
- 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.org. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

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Rev. 03/11

Accounting Assistant

Program Number: 31-101-1

One-Year Technical Diploma

Accounting & Finance Program Cluster

Center for 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.

Requirements for Admission

1.) High school diploma, HSED or GED with a minimum grade point average of 2.0 or equivalent; 2.) algebra, grade of C or better.

Curriculum

The courses listed below outline the requirements for graduation for students entering this program in the 2011-2012 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 (myMadisonCollege) account for specific graduation requirements. Program requirements are subject to change.

		Credits	Hrs/week Lec-Lab
First Semester			
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	2.25-.75
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	2.25-.75
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



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 concurrent enrollment in Math of Finance, 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 Accounting 1-Principles, 10-101-111 and prerequisite or co-requisite: Math of Finance, 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.

The following three courses will meet the requirements of Accounting and Payroll Systems 10-101-152, 10-101-153 & 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.

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: Accounting 1-Principles, 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: Accounting 1-Principles, 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.

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.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.

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Banking Services Certificate

Program Number: 90-114-2

Certificate

Accounting and Finance Program Cluster

Center for 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 Banking Services Certificate is a certificate program for individuals interested in maintaining or pursuing careers in the financial services industry. The certificate is designed for updating and/or broadening the knowledge of employees in the field of financial services with an emphasis in lending. This certificate does not require an application to the college. Students register for individual courses during the open registration period each semester.

Certificate Application Process

To apply, see: Apply Online (on the Madison College website). [Create an ApplyWeb account](#) and follow the [instructions](#) to complete the [Online Certificate Application](#) before the [application deadline](#). Submit the \$15 non-refundable fee (payable by credit card, debit card or electronic check) with your application. Applicants may submit more than one certificate application per term using the Online Certificate Application; the same fees apply for each additional application.

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

Courses	Credits	Hrs/week	
		Lec	Lab
10-804-144 Math of Finance.....	3	3	0
10-114-130 Personal Finance.....	3	3	0
10-101-106 Accounting Concepts*	3	3	0
10-114-128 Financial Institutions	3	3	0
10-104-104 Selling Principles	3	3	0
10-114-129 <u>Lending Principles</u>	3	3	0
Total	18		

*Accounting 1-Principles (10-101-111) or Applied Accounting (10-101-108) may be substituted for this course.

Courses should be taken in the order listed above.

Additional recommended courses (should be taken in order listed below):

Courses	Credits	Hrs/week	
		Lec	Lab
10-101-111 Accounting 1-Principles	4	4	0
10-103-133 Excel-Beginning.....	1	0.75	2.25
10-101-123 Tax 1	4	4	0
10-104-102 Marketing Principles	3	3	0



Required 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.

10-114-128 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 Math of Finance, 10-804-144.

10-114-129 Lending Principles 3 credits
Introductory course considers the control and management of credit and the underlying principles that govern lending decisions. The course will focus on consumer, real estate and commercial lending. Students will learn basic underwriting guidelines with an introduction to collateral. Prerequisites: Accounting course (Accounting Concepts, 10-101-106, Applied Accounting, 101-101-108, OR Accounting 1-Principles, 10-101-111) AND Personal Finance, 10-102-130.

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.

10-104-104 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.

10-804-144 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.

Optional Recommended 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 concurrent enrollment in Math of Finance, 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.

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

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

Career Potential:

- Loan Officer
- Title Company Representative
- Personal Banker
- Assistant Bank Manager

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

- Bank Manager
- Mortgage Lender
- Small Business Lender

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

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Rev. 03/11

Finance

Program Number: 10-114-2

Associate in Applied Science Degree

Accounting & Finance Program Cluster

Center for 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. The finance student, while successfully completing the core curriculum, will choose one of six concentration areas of interest from the section below.

Additional Finance Concentration Areas (6 credits):

***Banking:**

104-104	Selling Principles	3 credits
114-129	Lending Principles	3 credits

***Para-financial Planner:**

104-104	Selling Principles	3 credits
114-120	Financial Planning	3 credits

***Insurance:**

162-120	General Insurance Industry Overview	2 credits
162-123	Insurance Careers	2 credits

AND

162-108	Insurance Pre-Licensing—Life	1 credit
162-109	Insurance Pre-Licensing—Health	1 credit

OR

162-110	Insurance Pre-Licensing—Property	1 credit
162-111	Insurance Pre-Licensing—Casualty	1 credit

***Real Estate:**

194-175	Real Estate Investment	3 credits
194-184	Real Estate Finance	3 credits

Small Business:

145-102	Small Business Development & Planning	3 credits
145-106	Small Business Marketing & Promotion Tech	3 credits

*Certificates also available in the above programs

Requirements for Admission

1.) High school diploma, HSED or GED with a minimum grade point average of 2.0 or equivalent.

Curriculum

The courses listed below outline the requirements for graduation for students entering this program in the 2011-2012 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 (myMadisonCollege) account for specific graduation requirements. Program requirements are subject to change.

FIRST YEAR

First Semester	Credits	Hrs/week 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	2.25-.75
10-103-145 Access-Beginning.....	1	2.25-.75
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	18	

Second Semester

10-101-113 Accounting 2-Principles.....	4	4-0
10-102-104 Business Statistics.....	3	3-0
10-114-128 Financial Institutions.....	3	3-0
10-102-160 Business Law 1 OR.....	3	3-0
10-194-182 Real Estate Law.....	(3)	3-0
10-103-139 Excel-Intermediate.....	1	1-2
10-801-196 Oral/Interpersonal Communication*.....	3	3-0
Semester Total	17	

SECOND YEAR

First Semester

10-101-118 Management Accounting.....	4	4-0
10-114-126 Corporate Finance.....	3	3-0
10-114-117 Money and Banking.....	3	3-0
10-809-199 Psychology of Human Relations*.....	3	3-0
Elective.....	3	E
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
Semester Total	15	

NOTE: Students are encouraged to complete courses in the above semester order.

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

*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.



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 concurrent enrollment in Math of Finance, 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 Accounting 1-Principles, 10-101-111 and prerequisite or co-requisite: Math of Finance, 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: Accounting 2-Principles, 10-101-113.

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: Excel–Beginning, 10-103-133 and recommend completion (grade of C or better) in Math of Finance, 10-804-144.

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.

10-114-117 Money and Banking 3 credits
This introductory course studies money, the banking system and the role of the Federal Reserve as central banker. Considers the implementation of monetary and fiscal policy through a central bank. Introduces the foundations of Monetarism and the framework of Keynesianism. Focus is set on the term structure of interest rates and the interrelationships of interest rates and financial markets. The economy, the banking system and financial markets are studied in the context of current events. Prerequisite: grade of C or better in Math of Finance, 10-804-144.

10-114-120 Financial Planning 3 credits
This course will take you through the financial planning process. The economic cycle of accumulation, conservation and distribution is explored. Cash flow analysis and Goal Based Planning are compared through specific examples and projects. This is a comprehensive course incorporating the review of investment statements, tax documents, insurance policies and other inputs to a well rounded financial program.

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 Accounting 2-Principles, 10-101-113 and Math of Finance, 10-804-144.

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: Excel–Beginning, 10-103-133, and grade of C or better in Management Accounting, 10-101-118 or Cost Management, 10-101-125.

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 Math of Finance, 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 Personal Finance 1, 10-114-130 and Math of Finance, 10-804-144.

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.

Career Potential:

- Personal Banker/Consumer Lender
- Teller
- Paraplanners
- Customer Service Representatives
- Finance Trainings
- Financial Planning Assistants
- Loan Coordinators
- Operations Clerk/Managers
- Trust Assistant

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

- Financial Planners
- Stockbrokers
- Managers in Financial Institutions

Recommended Electives

10-101-123	Tax 1	4 credits
10-101-140	Accounting/Business Internship	3 credits
10-114-120	Financial Planning	3 credits
10-104-104	Selling Principles	3 credits
10-194-182	Real Estate Law	4 credits
10-194-184	Real Estate Finance	3 credits
10-194-175	Real Estate Investments	3 credits
10-104-102	Marketing Principles	3 credits

Graduation Requirement:

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

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

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Rev. 03/11

Animation – Concept Development

Program Number: 10-207-1

Associate in Applied Arts Degree

Applied Arts Program Cluster

Center for 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.

Program Courses

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.

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. Corequisites: 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. Corequisites: 10-207-103, 10-207-110 and 10-207-112.

10-207-112 Photoshop for 3D and Concepting 2 credit

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. Corequisites: 10-207-110 and 10-207-111.

Curriculum

The courses listed below outline the requirements for graduation for students entering this program in the 2011-2012 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 (myMadisonCollege) account for specific graduation requirements. Program requirements are subject to change.

FIRST YEAR

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

Second Semester

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

SECOND YEAR

First Semester

10-207-130 Digital Set Design	1	2-2
10-207-131 Animation 3.....	3	3-3
10-207-140 Advanced Animation Studio 1	3	3-3
10-207-151 Animation Concepts 2	3	3-3
10-801-198 Speech.....	3	3-0
<u>Elective</u>	4	E
Semester Total	17	

Second Semester

10-207-141 Animation 4.....	3	3-3
10-207-142 Animation Internship.....	1	0-4
10-207-143 Animation Portfolio	2	2-2
10-207-144 Adv. Animation Studio 2	3	3-3
20-809-276 Business Ethics*	3	3-0
10-809-197 <u>Contemporary American Society</u>	3	3-0
Semester Total	15	

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

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



Program Courses (continued)

10-207-117 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 credit
 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, 10-207-139 and 10-207-122.

10-207-131 Animation 3 3 credits
 By exploring various off-computer techniques for analyzing character motion, students practice translating their observations into digital form and applying them to their own creations. Extensive study of actual footage and professional work helps students make the conceptual transition from real-world to believable virtual motion. Prerequisites: 10-207-120 and 10-207-122. Co-requisite: 10-207-151.

10-207-139 Design and 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.

10-207-140 Advanced Animation Studio 1 3 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: 10-207-120, 10-207-122 and 10-207-151.

10-207-142 Animation Internship 1 credit
 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. Prerequisite: final semester in program and registration in 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: 10-207-131 and final semester status.

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, 10-207-112 and 10-207-139.

10-207-151 Animation Concepts 2 3 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.

Recommended Electives

10-207-152 Adv. Animation Workshop 1-2 credits
 10-201-117 Illustrative Figure Drawing 3 credits

Career Potential:

- Character Animator
- Concept Artist/Designer
- Storyboard Artist
- Animator, Modeler, Lighter or Illustrator in the following industries:
 - Advertising
 - Architecture
 - 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.org. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

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Graphic Design & Illustration

Program Number: 10-201-1

Associate in Applied Arts Degree

Applied Arts Program Cluster

Center for 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.

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. Prerequisite: 10-201-102, 10-201-103, 10-201-136, and 10-201-181.

Curriculum

The courses listed below outline the requirements for graduation for students entering this program in the 2011-2012 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 (myMadisonCollege) account for specific graduation requirements. Program requirements are subject to change.

FIRST YEAR

First Semester		Credits	Hrs/week Lec-Lab
10-201-102	Design Fundamentals.....	3	3-3
10-201-103	Drawing Fundamentals.....	3	3-3
10-201-136	Concept Development.....	3	3-3
10-201-181	Introduction to Computer Graphics.....	3	3-3
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	3-3
10-201-151	Typographic Design.....	3	3-3
10-201-152	Drawing for Illustration.....	3	3-3
10-201-182	Applied Computer Graphics.....	3	3-3
10-203-130	Introduction to Digital Photography.....	2	2-2
20-809-276	Business Ethics*.....	3	3-0
Semester Total		17	

SECOND YEAR

First Semester

10-201-106	Illustration.....	3	3-3
10-201-121	Graphic Design.....	3	3-3
10-201-128	Print and Design Production.....	3	3-3
10-201-177	Web Page Design 1.....	3	3-3
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)
20-815-211	Art Survey: Women in Art.....	(3)	(3-0)
Semester Total		18	

Second Semester

10-201-153	Integrated Design.....	3	3-3
10-201-154	Design Project Management.....	3	3-3
10-201-162	Portfolio Preparation.....	2	2-2
10-201-184	Electronic Page Layout.....	2	2-2
10-809-197	Contemporary American Society.....	3	3-0
10-809-199	Psychology of Human Relations.....	3	3-0
	Elective.....	1	1-0
Semester Total		17	

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

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



Program Courses (continued)

10-201-121 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. Prerequisite: 10-201-121, 10-201-128, 10-201-106, and 10-201-177; Students must be in their final semester of Graphic Design Program.

10-201-177 Web Page Design 1 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 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).

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 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 (e.g., QuarkXPress, 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
10-201-195	Advanced Web Page Design 1	2 credits
10-201-196	Advanced Web Page Design 2	2 credits
10-201-198	Applied Interactive Marketing Trends	2 credits
10-201-178	Web Animation and Illustration	2 credits
10-206-190	Advanced Web Animation	2 credits
10-206-129	Motion Graphics	3 credits
20-815-200	Intro 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)

Career Potential:

- Art Direction/Editing
- Web Page Design
- Graphic Design
- Illustration
- Package Design
- Product Design
- Advertising
- Publication Design
- Print Production
- Information Design

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

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Rev. 03/11

Interior Design

Program Number: 10-304-1

Associate in Applied Arts Degree

Applied Arts Program Cluster

Center for 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.

Unique Requirements for Admission

Students should have a working knowledge of Windows based computer software programs (MS Word, Excel, PowerPoint). If remedial course work is needed, it is suggested that these courses be completed before beginning the Interior Design program courses. (See courses offered in the Basic Certificate in Microsoft Office)

Curriculum

The courses listed below outline the requirements for graduation for students entering this program in the 2011-2012 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		Credits	Hrs/week Lec-Lab
Summer (prior to start of program)			
10-304-100	Survey of the Interior Design Profession**	1	1-0

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	1-0
10-801-198	Speech	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 prerequisites.

*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.

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, including the definition and history of interior design, the personal qualities and aptitudes of the interior designer, and professional organizations. The broad range of career opportunities and tasks performed by the interior designer is also explored.

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: Survey of the Interior Design Profession, 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: Survey of the Interior Design Profession, 10-304-100.

10-304-105 Bldg & 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: Survey of the Interior Design Profession, 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: Survey of the Interior Design Profession, 10-304-100

10-304-120 Adv 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: Basic Architectural Drawing, 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: Fundamentals of Design, 10-304-102; and Basic Architectural Drawing, 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. Corequisite: Perspective Lab, 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: Basic Architectural Drawing, 10-304-104, Bldg & Furniture Construction, 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: Basic Architectural Drawing, 10-304-104; and Interior Design Textiles, 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: Survey of Interior Design Profession, 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: Presentation Techniques, 10-304-124, Space Planning, 10-304-125, Materials and Finishes, 10-304-127 and Lighting, 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: Advanced Architectural Drawing, 10-304-120; Presentation Techniques, 10-304-124; Space Planning, 10-304-125; Materials and Finishes, 10-304-127, and concurrent enrollment in Lighting, 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: Advanced Architectural Drawing, 10-304-120 and Bldg & Furniture Construction, 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-requisites: Commercial Design, 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: History of Interior Design, 10-304-129, Commercial Design, 10-304-133, Sales and Professional Practice, 10-304-142, and Trends and Issues in Interior Design, 10-304-146. Co-requisite: Kitchen and Bath Design, 10-304-132 and Portfolio Development, 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 & 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: Materials and Finishes, 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: Advanced Interior Design, 10-304-143, and mandatory participation in Annual Portfolio Show.

Note: All program courses require a "C" or better for graduation and prerequisite completion.

Career Potential: Interior Design

- 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.org. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

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Rev. 03/11

Photography

Program Number: 10-203-1

Associate in Applied Arts Degree

Applied Arts Program Cluster

Center for 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.

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. Corequisite: 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 and 10-203-120 and 10-206-109.

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.

Curriculum

The courses listed below outline the requirements for graduation for students entering this program in the 2011-2012 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

First Semester		Credits	Hrs/week 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
	<u>Elective</u>	<u>2</u>	<u>E</u>
Semester Total		15	

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

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



Program Courses (continued)

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. Corequisite: 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.org. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

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Rev. 07/11

Social Media

Program Number: 90-201-2

Certificate

Center for 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. Students are required to have basic computer skills.

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

Certificate Application Process

To apply, see: [Apply Online](#) (on the Madison College website). [Create an ApplyWeb account](#) and follow the [instructions](#) to complete the [Online Certificate Application](#) before the [application deadline](#). Submit the \$15 non-refundable fee (payable by credit card, debit card or electronic check) with your application. Applicants may submit more than one certificate application per term using the Online Certificate Application; the same fees apply for each additional application.

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.

Certificate Courses

10-201-198 Interactive 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 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 media platforms such as Facebook, YouTube, Twitter and LinkedIn will be explored, as well as the many ethical and potential legal concerns that have arisen over these new forms of communication. Finally, the concept of viral marketing will be examined and how it allows a social message to explode a message to millions of users in a brief time.

Curriculum

Three Required Courses		Credits	Hrs/week Lec-Lab
10-201-198	Interactive Design Strategies	3	3-0
10-104-114	Social Media Campaigns.....	3	3-0
20-801-262	Writing for New Media	3	3-0
Total		9	

One Elective

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

10-201-130	Adapting Social Media Tools.....	3	3-3
10-206-143	Digital Storytelling.....	3	3-3
Total		(at least) 3	

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 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.

10-201-130 Adapting Social Media Tools 3 credits
This course provides an overview of the top social media sites and how to use them. Explore social media networking tools in this hands-on computer lab class. Set up a blog and wiki, view RSS feeds, try a social bookmarking site such as Delicious, and create a profile on professional networking sites like LinkedIn. Learn to write keyword rich text and anchor tags. Explore social media good practices to drive web traffic.

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.

Jobs in Social Media

- Advertising
- Communications/Public Relations
- Journalism
- Marketing
- Web/Interactive/Graphic Design
- Digital Videography
- Media Copywriter/Editor
- Information Technology
- Social Networking Media Specialist
- Media Strategist/Planner



Visual Communications – Media Design

Program Number: 10-206-1

Associate in Applied Arts Degree

Applied Arts Program Cluster

Center for 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 include 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.

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).

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 or concurrent enrollment.

Curriculum

The courses listed below outline the requirements for graduation for students entering this program in the 2011-2012 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 (myMadisonCollege) account for specific graduation requirements. Program 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 <u>Psychology of Human Relations.....</u>	<u>3</u>	<u>3</u>	<u>0</u>
Semester Total	17		

Second Semester		Hrs/week	
10-201-177 Webpage Design	3	3	3
10-206-130 Video Production.....	3	3	3
10-206-105 Communication Design.....	3	3	3
10-206-131 Sound Production Techniques.....	2	2	2
10-206-180 Advanced Media	3	3	3
10-801-196 <u>Oral/Interpersonal Communication.....</u>	<u>3</u>	<u>3</u>	<u>0</u>
Semester Total	17		

SECOND YEAR

First Semester		Hrs/week	
10-206-120 Prod, Planning and Control.....	3	3	3
10-206-142 Digital Video Production/Editing	3	3	3
10-206-135 Multimedia Presentations	3	3	3
10-801-197 Technical Reporting	3	3	0
10-809-166 Intro to Ethics: Theory & Applications.....	3	3	0
10-809-197 <u>Contemporary American Society.....</u>	<u>3</u>	<u>3</u>	<u>0</u>
Semester Total	18		

Second Semester		Hrs/week	
10-206-125 Instructional Media Systems.....	3	3	3
10-206-129 Motion Graphics.....	2	2	2
10-206-110 Introduction to 3D.....	3	3	3
10-206-140 Portfolio Preparation	2	2	2
10-804-123 Math with Business Applications	3	3	0
<u>Electives.....</u>	<u>2</u>	<u>E</u>	<u>E</u>
Semester Total	15		

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

Recommended Electives		Hrs/week	
10-206-104 Visual Comm.-Media Design Internship	1	0	4
10-206-145 Adv. Audio for Video Production (8 wk course).....	1	1	1
10-206-146 Intro Video/Audio Web Integration (8 wk course).....	1	1	1
10-201-195 Advanced Web Page Design (8 wk course).....	2	2	2
10-201-195 Advanced Web Page Design 2 (8 wk course).....	2	2	2



Program Courses (continued)

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 and 10-206-108.

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.

10-206-108 Digital Drawing and Design Fundamentals 2 credits
 Provides involvement with the creative process, the traditional elements and principles of design and various techniques for solving two-dimensional design problems. These design concepts are taught on the computer and traditional 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, 10-206-180 and basic animation techniques.

10-206-120 Prod, Planning and Control 3 credits
 The student develops a basic understanding of the media production process, budgeting, task analysis, time management and design team approaches. Prerequisites: 10-201-181, 10-206-107 and 10-206-133.

10-206-125 Instructional Media Systems 3 credits
 Students are trained in the planning processes and media selection. Projects include graphic user interface, learning center design and design structures. Prerequisites: 10-201-181, 10-206-107, 10-206-120, 10-206-133 and 10-206-135.

10-206-129 Motion Graphics 2 credits
 This is an introductory course in the creation of motion graphics for video and web applications. Students will use software to create composites incorporating animation and special effects. Storyboarding, file management, layering, animation, masks, lighting, three dimensional space, dynamic camera angles and various delivery methods will be covered in the course. Prerequisite: 10-201-181.

10-206-130 Video Production 3 credits
 Video Production 1 surveys the principles of telecasting operations, including camera techniques, lighting, sound film, settings, scenery, floor directing, script, art, and on-camera performance. Lectures, reading, assignments and projects provide an understanding of the television industry, its history, development and principles of operation.

10-206-131 Sound Production Techniques 2 credits
 Teaches the techniques of sound recording and multi-track track mixing for productions, including narration, location recording and music mixing. Digital sound mixing for computer presentations is included in this course. Prerequisites: 10-201-181 and 10-206-107.

10-206-133 Interface Design 2 credits
 This course introduces students to the planning process of graphic interface design for multimedia formats. Topics to include learner style identification, information design, interactive relationships, interface layouts and beta testing. Prerequisite: 10-201-181 or concurrent enrollment.

10-206-135 Multimedia Presentations 3 credits
 The design and production of media using computer animation, including computer presentation and interactive media design. Prerequisites: 10-203-130, 10-206-180, 10-206-137, 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 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.

10-206-180 Advanced Media 3 credits
 Students create visual solutions using electronic methods of image manipulation. Adobe Photoshop allows the students to create composite and retouch images suitable for strengthening their portfolios. Prerequisites: 10-201-181 and 10-206-105.

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.

10-206-145 Adv. Audio for Video Production 1 credit
 This course covers the techniques used for the enhancement of video/audio production through the use of special effects, background noise elimination, and the addition of sound tracks and narratives. Prerequisites: 10-206-130 and 10-206-131.

10-206-146 Intro Video/Audio Web Integration 1 1 credit
 This course will explore various types of digital video and audio techniques that can be integrated into web page design. Prerequisites: 10-206-130, 10-206-131, 10-206-135 and 10-201-177.

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.org. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

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Rev. 03/10

Web Page Design

Program Number: 90-201-1

Certificate

Applied Arts Program Cluster

Center for 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 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.

Certificate Application Process

To apply, see: Apply Online (on the Madison College website). [Create an ApplyWeb account](#) and follow the [instructions](#) to complete the [Online Certificate Application](#) before the [application deadline](#). Submit the \$15 non-refundable fee (payable by credit card, debit card or electronic check) with your application. Applicants may submit more than one certificate application per term using the Online Certificate Application, the same fees apply for each additional application.

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.

Note: Students completing spring 2011 contact the Center upon completion. Student completing after that date need to apply for the certificate as noted above.

Prerequisite Course

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).

Certificate Courses

10-201-178 Web Animation/Illustration 2 credits
Introduces students to the basics of two-dimensional animation for interactive media. Students are introduced to Adobe Flash and its illustrating and animating tools, as well as its integration with Adobe Illustrator and Photoshop to create simple animations for social media. Students are also introduced to the creation of interactive graphics using Adobe Fireworks. Prerequisite: 10-201-177.

Curriculum

First Semester		Credits	Hrs/week Lec-Lab
10-201-178	Web Animation/Illustration	2	2-2
10-201-195	Advanced Web Page Design	2	2-2
10-201-198	Interactive Design Strategies	3	3-0
Semester Total		7	

Second Semester		Credits	Hrs/week Lec-Lab
10-206-190	Advanced Web Animation	2	2-2
10-152-165	JavaScript: An Introduction	1	1-1
10-201-189	Web Design Project Management	2	2-2
Semester Total		5	

10-152-165 JavaScript: An Introduction 1 credit
An introduction to 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: 10-201-177

10-201-195 Advanced Web Page Design 2 credits
This course focuses on the graphic preparation, design, and page layout skills necessary to produce full-functioning web pages. Students create several web sites incorporating complex features and skills. Practical exercises are implemented to focus on specific production techniques. Design will be emphasized through examples, critique, and demonstration. Information is delivered primarily through lecture, demonstration, and hands-on learning exercises. Prerequisites: 10-201-177.

10-201-189 Web Design Project Management 2 credits
Real client projects will provide opportunities to work in teams, manage projects, conceptualize, organize and acquire content, develop architecture and assemble a production plan. Advanced web page layout features such as templates, libraries, use of CSS, implementation of javascript and spy widgets will be introduced. Prerequisites: 10-201-198 and 10-201-195.

10-206-190 Advanced Web Animation 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, 10-201-178.

10-201-198 Interactive Design Strategies 3 credits
This course will flexibly address the rapidly changing web-based social media, marketing and advertising trends. Projects in this course will include online research, case studies and class exercises. Some of the topics covered in this course: search engine optimization, keyword research, link building strategies, web site indexing, web analysis techniques and social media advertising. Students will develop html based email campaigns, as well as create banner ads and placement ads for the internet and other interactive devices using appropriate graphics software.

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.org. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

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Rev. 03/11



Business Management

Program Number: 10-102-3

Associate in Applied Science Degree

Accounting and Finance Program Cluster

Center for Business and Applied Arts

Program offered at Madison, Portage and Reedsburg Campuses

Most courses offered at Fort Atkinson and Watertown Campuses

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

About the Program

To be accepted into company training programs in middle management, or for running and operating a business, the Business Management program provides a well-rounded study in 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 middle management and allied occupations. Graduates are also trained for positions in such specialty areas as sales, accounting or office operations.

Requirements for Admission

High school diploma, HSED or GED with a minimum grade point average of 2.0 or equivalent.

Curriculum

The courses listed below outline the requirements for graduation for students entering this program in the 2011-2012 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

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
10-801-195	Written Communication.....	3	3-0
10-804-144	Math of Finance.....	3	3-0
10-809-195	<u>Economics.....</u>	<u>3</u>	<u>3-0</u>
Semester Total		16	

Second Semester

10-101-113	Accounting 2-Principles.....	4	4-0
10-102-145	Introduction to Human Resources.....	3	3-0
10-102-150	Introduction to International Business.....	3	3-0
10-801-198	Speech.....	3	3-0
10-809-197	<u>Contemporary American Society.....</u>	<u>3</u>	<u>3-0</u>
Semester Total		16	

SECOND YEAR

First Semester

10-101-118	Management Accounting.....	4	4-0
10-102-114	Business Communication.....	3	3-0
10-114-126	Corporate Finance.....	3	3-0
10-102-143	Management Techniques.....	3	3-0
20-809-276	Business Ethics OR.....	3	3-0
10-809-166	<u>Intro to Ethics: Theory and Application.....</u>	<u>(3)</u>	<u>3-0</u>
Semester Total		16	

Second Semester

10-102-104	Business Statistics.....	3	3-0
10-102-132	Leadership for Business Excellence.....	3	3-0
10-102-168	Employment Law.....	3	3-0
10-103-133	Excel-Beginning OR.....	1	2.25-.75
10-103-139	Excel-Intermediate.....	(1)	2.25-.75
10-104-102	Marketing Principles.....	3	3-0
10-809-199	<u>Psychology of Human Relations.....</u>	<u>3</u>	<u>3-0</u>
Semester Total		16	

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

Graduation Requirement:

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



Program Courses

10-101-111 Accounting 1–Principles 4 credits
Introduction to the field of accounting. The accounting cycle of journalizing transactions, posting, adjusting and closing entries, as well as the preparation of accounting statements is emphasized for service industries and merchandising concerns. Details of accounting for cash and receivables are studied. An introduction to a computerized accounting system is also included. Recommend concurrent enrollment in Math of Finance, 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 Accounting 1-Principles, 10-101-111 and prerequisite or co-requisite: Math of Finance, 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: Accounting 2-Principles, 10-101-113.

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: Excel–Beginning, 10-103-133 and recommend completion (grade of C or better) of Math of Finance, 10-804-144.

10-102-114 Business Communication 3 credits
Both written and verbal communications are studied. Applications pertaining to business communications and procedures are stressed.

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. Prerequisite: grade of C or better in Accounting 2–Principles, 10-101-113.

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: Business Organization and Management, 10-102-134 and Management Techniques, 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.

10-102-143 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: Business Organization & Management, 10-102-134.

10-102-145 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.

10-102-150 Introduction 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.

10-102-168 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.

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

Additional Courses (if desired)

10-101-123 Tax 1 4 credits
10-101-137 Computerized Accounting Applications 3 credits
10-101-140 Accounting Business Internship 3 credits
10-102-130 Personal Finance 3 credits
10-102-135 Fundamentals of Project Management 3 credits
10-102-160 Business Law 3 credits
10-103-143 PowerPoint 1 credit

Career Potential:

- Supervisor
- Management Trainee
- Manager

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

- Administrative Assistant
- Executive Assistant
- Production Assistant
- Account Executive
- Lead Worker
- Owner/Operator

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

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Rev. 02/11

Fashion Marketing

Program Number: 10-104-4

Associate in Applied Science Degree

Business & Marketing Program Cluster

Center for 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, Chicago and Minneapolis 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, Fair Indigo, Old Navy, The Boston Store, The Buckle, Lands End, Victoria's Secret, Macy's Aeropostale, Maurices, Wintersilks, Brava Magazine, 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 (matcmadison.edu) for more information.

Curriculum

The courses listed below outline the requirements for graduation for students entering this program in the 2011-2012 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 (myMadisonCollege) account for specific graduation requirements. Program requirements are subject to change.

FIRST YEAR

		Hrs/week	
First Semester		Credits	Lec-Lab
10-104-102	Marketing Principles	3	3-0
10-104-161	Marketing Technology Applications.....	3	2-2
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
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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.



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 Market Research 3 credits

Businesses today need current information on which to base their marketing decisions. Students gather marketing information from primary and secondary sources using online sources. Prerequisite: 10-104-102 and 10-104-161.

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. Prerequisites: 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.

Recommended Electives

10-103-139	Excel-Intermediate	1 credit
10-104-107	Marketing Management	3 credits
10-104-124	Retail Management	3 credits
10-104-168	eCommerce in Marketing	3 credits
10-104-183	International Business in Fashion	2 credits
10-104-185	Customer Service Management	3 credits
10-104-186	History of Costume	3 credits

Also recommended, computer software courses.

Career Potential:

- Marketing
- Merchandising
- Planning and Distribution
- Product Development
- Production
- Public Relations
- Sales Representative
- Store Operations
- Store Management
- Visual Merchandising

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. 03/10*

Human Resources Certificate

Program Number: 90-102-1

Certificate

Accounting and Finance Program Cluster

Center for 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 Human Resource 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. Note: No application is required.

Certificate Application Process

To apply, see: Apply Online (on the Madison College website). [Create an ApplyWeb account](#) and follow the [instructions](#) to complete the [Online Certificate Application](#) before the [application deadline](#). Submit the \$15 non-refundable fee (payable by credit card, debit card or electronic check) with your application. Applicants may submit more than one certificate application per term using the Online Certificate Application; the same fees apply for each additional application.

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

10-102-145 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.

10-102-147 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.

10-102-148 Labor Relations 3 credits
Topics include: Employee rights and discipline, union-management relations, collective bargaining and grievance management, assessment systems.

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.

Curriculum

Courses	Credits	Hrs/week	
		Lec	Lab
10-102-145 Introduction to Human Resources.....	3	3	0
10-102-168 Employment Law	3	3	0
10-102-147 Wage, Salary, and Benefits Administration.....	3	3	0
10-102-148 Labor Relations	3	3	0
Total	12		

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.org. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

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Rev. 03/10



Insurance & Risk Management Certificate

Program Number: 90-162-1

Certificate

Business and Marketing Program Cluster

Center for Business and Applied Arts

Program offered at Madison Campuses

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

About the Certificate

According to the insurance industry, there is a lack of educational programs in Wisconsin geared toward a quick and easy method to prepare students for employment in the insurance arena.

To address this need, this 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.

The certificate includes 10 credits of core insurance courses and 6 elective credits from either the Property and Casualty or Life and Health areas to enable specialization for a total of 16 credits.

This series of courses is a great addition for those who already have earned a Bachelor's Degree and would like a specific focus in 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. Current or returning students with an Associate Degree will also find this certificate an efficient pathway into the insurance industry.

Many of the courses also qualify for continuing education credits for licensed intermediaries in Wisconsin. Students searching for continuing education credits or working towards one of the designation programs mentioned will find these certificate courses very beneficial.

Certificate Application Process

To apply, see: Apply Online (on the Madison College website). [Create an ApplyWeb account](#) and follow the [instructions](#) to complete the [Online Certificate Application](#) before the [application deadline](#). Submit the \$15 non-refundable fee (payable by credit card, debit card or electronic check) with your application. Applicants may submit more than one certificate application per term using the Online Certificate Application; the same fees apply for each additional application.

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

		Credits	Hrs/week Lec-Lab
Core Courses			
10-162-120	General Insurance Industry Overview	3	2-0
10-162-121	Customer Service in an Insurance Environment.....	3	3-0
10-162-124	Technology in the Insurance Environment.....	2	2-0
10-162-133	Assessing and Managing Risk	3	3-0
	<u>Electives.....</u>	<u>6</u>	<u>6-0</u>
	Total	17	

Elective Courses – Property and Casualty Track (select a minimum of 6 credits from the list of courses below)

10-162-110	Insurance Pre-Licensing—Property.....	1	1-0
10-162-111	Insurance Pre-Licensing—Casualty.....	1	1-0
10-162-125	Commercial Insurance.....	3	3-0
10-162-126	Introduction to Claims.....	2	2-0
10-162-127	Introduction to Underwriting.....	2	2-0
10-162-128	Property & Casualty Production.....	3	3-0
10-162-129	Personal Lines Policies.....	2	2-0

Elective Courses – Life and Health Track (select a minimum of 6 credits from the list of courses below)

10-162-108	Insurance Pre-Licensing—Life.....	1	1-0
10-162-109	Insurance Pre-Licensing—Health.....	1	1-0
10-162-130	Life and Health Insurance Marketing.....	3	3-0
10-162-131	Principles of Life, Health & Annuities.....	2	2-0
10-162-132	Life & Health Insurance Underwriting.....	3	3-0

Elective Courses – Risk Management Track (select a minimum of 6 credits from the list of courses below)

10-162-126	Introduction to Claims.....	2	2-0
10-162-134	Advanced Risk Management Strategies.....	3	3-0
10-162-125	Commercial Insurance.....	3	3-0



Courses

10-162-120 General Insurance Industry Overview 3 credits

This class will provide a foundation of the history of insurance and the general concepts behind the industry; what insurance does, how insurance works, the functions of rating, underwriting, surplus lines, and claims and what it takes to perform each position. The differences in types of insurers and marketing systems will be addressed. The course will also discuss some of the general insurance laws that apply to the industry in Wisconsin and how differences in state's insurance laws can impact agents and companies working throughout the country.

10-162-121 Customer Service in an Insurance Environment (LOMA ACS 100) 3 credits

This course will provide students with a foundation to provide insurance industry clients with exceptional customer service. How to listen and interact with customers, how to understand customer expectations and perceptions, communicating professionally, organizing the workday and developing a customer service strategic plan will be covered. Other topics include handling customer complaints, the importance of documentation, meeting compliance requirements, and using technology effectively to meet customer service goals.

10-162-124 Technology in the Insurance Environment (AIT 132) 2 credits

This course will cover the importance of documentation, electronically viewing, saving, and sharing data, integration of automation into the overall business plan and in marketing. In addition, the reliance on information to be accurate, interfacing the agency and company information storage systems, and developing a plan to protect data against risks will be discussed. The course will also look further into using technology to assess risk and prevent Errors and Omissions within the insurance industry.

10-162-125 Commercial Insurance - (AAI 82) 3 credits

This course provides 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. Pre-requisite: General Insurance Industry Overview, 10-162-120.

10-162-126 Introduction to Claims (AIC 33) 2 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.

10-162-127 Introduction to Underwriting (UNDWR 360) 2 credits

The course provides an overview on making underwriting decisions, the underwriter-producer relationship, and underwriting personal and commercial property and casualty insurance. Pre-requisite: General Insurance Industry Overview, 10-162-120.

10-162-128 Property & Casualty Production (AAI 83) 3 credits

This class covers additional specifics of the producer-insurer relationship, the importance of the agency image, market segmentation, and target marketing.

10-162-108	Insurance Pre-Licensing Life	1 credit
10-162-109	Insurance Pre-Licensing Health	1 credit
10-162-110	Insurance Pre-Licensing Property	1 credit
10-162-111	Insurance Pre-Licensing Casualty	1 credit

Each one of these courses meets the state educational requirements (8 hours of state laws and ethics and 12 hours of terminology and product knowledge) in preparation for taking the State of Wisconsin examination for licensure in that related line of business with the Office of the Commissioner of Insurance. Licensing in Wisconsin allows the agent to sell and service products and work directly with the consumer.

10-162-129 Personal Lines Policies (API 28) 2 credits

This course discusses the specific policy language and coverage for homes, autos, recreational vehicles, umbrella liability, flood, earthquake and watercraft. In addition, it provides a basic concept of general insurance terminology and the parts of the policy. Pre-requisite: General Insurance Industry Overview, 10-162-120.

10-162-130 Life and Health Insurance Marketing (LOMA 320) 3 credits

This course discusses the function and importance of marketing Life and Health Insurance including target marketing, planning goals, sales and advertising.

10-162-131 Principles of Life, Health & Annuities (LOMA 280) 2 credits

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.

10-162-132 Life & Health Insurance Underwriting (LOMA UND386) 3 credits

In this class, students will be introduced to the fundamentals of risk selection in life and health insurance applications. It delves further into the job responsibilities of an underwriter, the legal aspects of underwriting group coverage, and the medical, financial, and personal factors that are assessed in underwriting individual applications

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.

10-162-134 Advanced Risk Management Strategies 3 credits

This course will serve as an elective for the Risk Management track. The course build on lessons learned in Assessing & Managing Risks Financial Analysis. The course culminates with a trip to London, further emphasizing the global interdependence of the insurance industry and business in general.

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.03/11

Marketing

Associate in Applied Science Degree

Business and Marketing Program Cluster

Center for Business and Applied Arts

Center Contact Information: (608) 246-6003 or
(800) 322-6282 Ext. 6003

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 (Fastrack) 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 (Fastrack) formats at the Madison campus (select courses offered in Fort Atkinson, Portage, Madison-West, and Watertown).

Career Potential:

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

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

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

For information contact either Steve Noll (608) 246-6609; SNoll@matcmadison.edu or Kristin Uttech (608) 246-6336; KUtech@matcmadison.edu, co-Lead Teachers.

- **Online Associate Marketing Degree:** Complete course requirements at your convenience. For more information, contact Carrie Andersen at (920) 568-7233 or Andersen@matcmadison.edu.
- **Fastrack Marketing Degree:** Take classes one night a week and earn your degree in about two years! For more information, contact Holly Mercier at (608) 246-6558 or HMercier@matcmadison.edu. Visit our website: <https://matcmadison.edu/plus/marketing>.

Curriculum

The courses listed below outline the requirements for graduation for students entering this program in the 2011-2012 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 (mymadisonCollege) account for specific graduation requirements. Program requirements are subject to change.

FIRST YEAR

First Semester	Credits	Hrs/week
10-104-102 *Marketing Principles.....	3	3-0
10-104-104 *Selling Principles.....	3	3-0
10-104-161 *Marketing Technology Applications.....	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
10-104-180 **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
Emphasis Area course #1 (see below).....	3	
Semester Total	18	

Second Semester

10-104-111 Innovative Trends in Marketing.....	3	3-0
10-104-114 **Social Media Campaigns.....	3	3-0
10-104-188 Marketing Portfolio.....	1	0-2
10-809-166 ***Introduction to Ethics: Theory & Application.....	3	3-0
General Elective.....	3	E
Emphasis Area course #2 (see below).....	3	
Semester Total	16	

Advertising Emphasis Area

- 10-104-126 **Publicity & Promotions Strategy (offered in Fall Semester)
- 10-104-181 **Complete Campaigns** (offered in Spring Semester)

Sales Emphasis Area

- 10-104-108 **B2B Sales (offered in Spring Semester)
- 10-104-160 **Sales Management (offered in Fall Semester)

Note:

- 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 Elective must come from one of the following classes (please note that some of these classes are only offered once per year).

Approved Marketing Electives

10-104-165 Internship (offered in Summer)	3 credits
10-104-169 Internet Marketing** (offered in Fall Semester)	3 credits
10-104-187 Global Studies Seminar (can be taken in lieu of international Marketing)	3 credits

Above classes in Emphasis area can be taken as approved electives.

Note: *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.

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

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 and 10-104-161.

10-104-104 Selling Principles 3 credits

Students are acquainted 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.

10-104-107 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 issue/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 or organization. Prerequisites: 10-104-102 and 10-104-161.

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 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 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.

10-104-125 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

Publicity and Promotion Strategies explores the nature, importance, and function of Public Relations, Media, and Sales Promotion within the Integrated Marketing Communications framework. Students will build familiarity with PR and promotion strategies including proactive and reactive PR tactics, cause related marketing (CRM), sponsorships, sales promotion tactics to the consumer, and the preparation of efficient media plans. This course will allow direct experience with a local trade show and PR event, Web PR tactics, and the preparation of Press Releases for both the web and media

10-104-160 Sales Management 3 credits

The role of the Manager in the Sales process is explored in this advanced sales class. Creating a sales program, developing your sales force, motivating sales people, and developing companies to be more selling focused will all be explored through research, case studies, practical applications and projects. Sales skills will be enhanced through the role of a strong Sales Manager. Prerequisite: 10-104-104 or Instructor Consent.

10-104-161 Marketing Technology Applications 3 credits

Through hands-on experience, participants explore current and emerging technologies and its application to marketing requirements. In addition, participants learn effective presentation techniques, appropriate netiquette and the applications of transforming technologies. Prerequisites: Keyboarding, Introduction to Windows, File Management, Introduction to Word or equivalent experience.

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. Prerequisites: 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.

10-104-181 Complete Campaigns 3 credits

Students will apply theory and knowledge gained from advanced marketing and promotion classes in planning and executing a complete promotional campaign for a local client. Emphasis is placed on the use of research, coordination of the elements of a campaign, creative development, media buying, oral presentation, and evaluating campaign effectiveness. Prerequisites: 10-104-107, 10-104-125, 10-104-126, and 10-104-161.

Program Number: 10-104-3

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

This 1 credit class is the collection of projects worked on throughout the program with additional material to create a portfolio for job interviewing. Prerequisite: Consent of Instructor.

Career Potential:

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

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

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

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. 3/11

Associate in Applied Science Degree

Business and Marketing Program Cluster

Center for Business and Applied Arts

Program is offered in traditional, compressed, online, hybrid and accelerated (Fastrack) formats at Madison campus (select courses in Fort Atkinson, Portage, Madison-West, and Watertown)

For information call: (800) 322-6282 Ext. 6003 or 6558 or (608) 246-6003; Marketing Fastrack Program (608) 246-6558; Associate Marketing Degree Online (920) 568-7233.

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, distributed, priced and promoted.

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!

Online Associate Marketing Degree: Earn an Associate Marketing degree entirely online. Complete course requirements at your convenience. For more information, contact Carrie Andersen at (920) 568-7233 or Andersen@matcmadison.edu.

Fastrack Marketing degree: an *accelerated* learning option is available in Madison. Take classes one night a week and earn your degree in about two years! For more information, contact Holly Mercier at (608) 246-6558 or hmercier@matcmadison.edu.

Emphasis Area Curriculum Information

In the first and second semester of the second year, students will choose to take two courses in an emphasis area as listed (Advertising or Sales).

Advertising Emphasis Area

- 10-104-126 Publicity & Promotions Strategy (*offered in Fall Semester*)
- 10-104-181 Complete Campaigns (*offered in Spring Semester*)

Sales Emphasis Area

- 10-104-108 B2B Sales (*offered in Spring Semester*)
- 10-104-160 Sales Management (*offered in Fall Semester*)

Note:

- The General Elective may be filled from a wide variety of college-wide classes and/or transfer credits.
- The Approved Marketing Elective must come from one of the following classes (please note that these classes are only offered once per year).

Approved Marketing Electives (online anytime after semester one)

- | | |
|--|-----------|
| 10-104-165 Marketing Internship (<i>offered in Summer</i>) | 3 credits |
| 10-104-169 Internet Marketing (<i>Fall Semester</i>) | 3 credits |
| 10-104-187 Global Studies Seminar | 3 credits |

Curriculum

The courses listed below outline the requirements for graduation for students entering this program in the 2011-2012 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 (myMadisonCollege) account for specific graduation requirements. Program requirements are subject to change.

FIRST YEAR		Credits	Hrs/week Lec-Lab
First Semester - Fall			
10-104-102	Marketing Principles	3	3-0
10-104-104	Selling Principles	3	3-0
10-104-113	<u>Leadership Strategies in Marketing</u>	3	3-0
Semester Total		9	

Second Semester - Spring			
10-104-112	Marketing Design Strategies	3	3-0
10-104-161	Marketing Technology Applications.....	3	3-0
10-104-180	<u>International Marketing</u>	3	3-0
Semester Total		9	

Summer			
10-104-125	Principles of Advertising	3	3-0

SECOND YEAR

First Semester - Fall			
10-104-103	Marketing Research	3	3-0
10-104-107	Marketing Management.....	3	3-0
10-104-111	<u>Innovative Trends in Marketing</u>	3	3-0
Semester Total		9	

Second Semester - Spring			
Approved Marketing Elective (online anytime after semester one)			
.....		3	3-0
10-104-114	Social Media Campaigns.....	3	3-0
Emphasis course #1 (<i>see left</i>).....		3	3-0
<u>Emphasis course #2 (<i>see left</i>)</u>		3	3-0
Semester Total		12	

Second Semester – Interim			
10-104-188	Marketing Portfolio.....	1	0-2

The following General Education and elective course requirements may be taken along with the marketing requirements or after these requirements have been completed:

10-801-195	Written Communication*	3	3-0
10-804-123	Math with Business Applications*.....	3	3-0
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
10-809-195	Economics*	3	3-0
10-809-166	Introduction to Ethics: Theory & Application*	3	3-0
<u>General Elective</u>		3	E
		24	

* For the Associate Degree general education courses, college transfer equivalents are available. Please see assigned program faculty advisor for complete details. Students are 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.

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.

Have any questions?

Contact Holly Mercier, Marketing Fastrack Instructor
(608) 246-6558 or hmercier@matcmadison.edu
Office: Room 211A / Truax campus



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 and 10-104-161.

10-104-104 Selling Principles 3 credits

Students are acquainted 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.

10-104-107 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 issue/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 or organization. Prerequisites: 10-104-102 and 10-104-161.

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 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 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. Prerequisite: 10-104-102 or Instructor Consent.

10-104-125 Principles of Advertising 3 credits

Students are introduced to the theory and practice of integrated marketing communications. All elements in the promotions mix are summarized but the major emphasis is on advertising. Students examine the characteristics of major media alternatives including radio, television, newspapers, magazines, outdoor, direct response and alternative media. Advertising research, planning and creativity are also explored and practiced. Prerequisite: 10-104-102

10-104-161 Marketing Technology Applications 3 credits

Through hands-on experience, participants explore current and emerging technologies and its application to marketing requirements. In addition, participants learn effective presentation techniques, appropriate netiquette and the applications of transforming technologies. Prerequisites: Keyboarding, Introduction to Windows, File Management, Introduction to Word or equivalent experience.

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, the student must have Consent of Instructor to register for course.

10-104-169 Internet Marketing 3 credits

This course provides a road map for marketers to navigate the digital economy. Critical skills include the ability to master proven Internet marketing principles and concepts, and the capacity to keep pace with technological advances and industry trends. This course focuses on a comprehension of Internet marketing theory and concepts; demonstrates how concepts are applied in the real world; and emphasizes the development of advanced Internet marketing skills. Prerequisites: 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.

Program Number: 10-104-3

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

This 1 credit class is the collection of projects worked on throughout the program with additional material to create a portfolio for job interviewing. Prerequisite: Consent of Instructor.

Career Potential:

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

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

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

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.

Paralegal

Associate Degree

Business and Marketing Program Cluster

Center for Business and Applied Arts

Program offered at Madison Campuses

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

Program Number: 10-110-1

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. Paralegals are not authorized to practice law.

The subjects covered in core course work are: ethics, legal procedures, the American legal system, delivery of legal services in law offices and related environments, the paralegal profession, legal research and writing, law-related computer skills, legal interviewing and investigation, and substantive areas of legal practice. The program assists students in acquiring these essential related competencies: critical thinking skills (analysis, judgment, research and problem-solving), communication skills (oral, written, non-verbal and interpersonal), computer skills, computational skills, understanding of ethics and organizational skills.

Program Entrance Requirement

- Keyboarding speed of 50 WPM with no more than five errors.

Curriculum

The courses listed below outline the requirements for graduation for students entering this program in the 2011-2012 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.

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

FIRST YEAR

First Semester

10-110-141	Computer Applications-Legal.....	3	2-2
10-110-101	Introduction to Paralegalism and Legal Ethics	3	3-0
10-801-195	Written Communication	3	3-0
10-809-195	Economics	3	3-0
10-809-199	Psychology of Human Relations.....	3	3-0
	<u>Choose 1 Elective</u>	<u>3</u>	<u>E</u>
	Semester Total	18	

Second Semester

10-110-102	Civil Litigation 1.....	3	3-0
10-110-104	Legal Research.....	3	3-0
10-801-196	Oral and Interpersonal Communication OR	3	3-0
10-801-198	Speech.....	(3)	(3-0)
10-809-197	Contemporary American Society.....	3	3-0
	<u>Choose 1 Selective (see list)</u>	<u>3</u>	<u>S</u>
	Semester Total	15	

SECOND YEAR

First Semester

10-110-103	Civil Litigation 2.....	3	3-0
10-110-105	Legal Writing	3	3-0
10-110-176	Paralegal Professional Internship.....	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)
20-806-206	General Anatomy & Physiology.....	(4)	(3-1)
	<u>Choose 2 Selectives (see list)</u>	<u>6</u>	<u>S</u>
	Semester Total	18	

Second Semester

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 Applications.....	3	3-0
	<u>Choose 2 Selections (see list)</u>	<u>6</u>	<u>S</u>
	Semester Total	15	

Keyboarding Entrance Requirement: Students are required to pass a test that demonstrates keyboarding competency at 50 WPM with no more than 5 errors.



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 contracts. 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. Prerequisite: 10-110-101.

10-110-105 Legal Writing 3 credits

Legal Writing is an advanced writing course concentrating on legal correspondence, forms, memoranda, and briefs. Prerequisites: 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 the students with legal aspects involving the formation, operation, and dissolution of the five principal types of business organizations utilized in the United States. It also involves the study of the substantive law involving these organizations and the procedures required to conform to the law. 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 guardianship, 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 as well as how agencies adjudicate cases and controversies involving those rules. Following an introduction to the administrative rulemaking and adjudication process, the course will examine and utilize the specific rules and procedures of various Federal and state agencies, primarily focusing on the rules and documents associated with Wisconsin's Workers Compensation Law. Prerequisite: 10-110-101.

10-110-122 Debtor and Creditor Relations 3 credits

A review of legal issues involving debtors and creditors issues including security interests, disclosure requirements, marital property law, third party rights and liabilities, collections procedures, garnishment, receivership, execution, and bankruptcy. Prerequisite: 10-110-101.

10-110-141 Computer Applications-Legal 3 credits

Provides the learner with skills to use computer applications typical to a law office including spreadsheets; database; e-mail; timekeeping and billing software; litigation management software; and the Internet. Pre-requisite or concurrent enrollment in 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. In addition, students meet one hour weekly to discuss legal office experiences and ethical considerations, learn effective job search techniques, and develop professional image. Prerequisites: 10-110-101; 10-110-176; 10-110-104 and 10-110-105(or taken concurrently).

10-110-160 Employment Law 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 – Paralegal 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.

10-110-170 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 program(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. Topic examples may include Immigration Law, Environmental Law, Real Estate contracts and construction liens, etc. 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 Intro to Paralegal Profession 1 credit

This course will (i) focus on the paralegal profession; (ii) introduce students to the classes offered in the Program; (iii) provide tools to assist the students to succeed in the Program and their careers; (iv) administer the required Program entrance keyboarding test; and (v) advise and enroll students for fall. Restricted to students admitted to the following program(s): 10-110-1 Paralegal or 90-110-1 Paralegal Post-baccalaureate Certificate.

10-110-176 Paralegal Professional Internship 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 Estate
- 10-110-115 Administrative Law
- 10-110-122 Debtor and Creditor Relations
- 10-110-160 Employment Law
- 10-110-168 Criminal Law
- 10-110-170 Intellectual Property Law
- 10-110-171 Law and Contemporary Problems
- 10-110-173 Contract Law in a Global Economy

Career Potential:

- Law Office Paralegal
- Public/Government Paralegal
- Corporation Paralegal
- Trust Department Paralegal
- Real Estate Paralegal
- Law Office Manager

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

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Rev. 03/11

Paralegal Post-baccalaureate Certificate

Program Number: 90-110-1

Certificate

Business and Marketing Program Cluster

Center for Business and Applied Arts

Program offered at Madison Campuses

For information call: (608) 246-6631, (608) 243-4233 or (800) 322-6282 Ext. 6631 or 4233

About the 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. The Post-baccalaureate Certificate in paralegal is appropriate for those persons who already have earned a bachelor's degree.

Unique Requirements for Admission

- Bachelor's degree or higher from an accredited institution (Transcripts to be submitted with application for admission via the program office.)*
- Ability to use Windows and Word proficiently.
- Attendance at Summer Orientation session.

Program Entrance Requirement

- Keyboarding speed of 50 WPM with no more than five errors.

Certificate Application Process

To apply, see: Apply Online (on the Madison College website). [Create an ApplyWeb account](#) and follow the [instructions](#) to complete the [Online Certificate Application](#) before the [application deadline](#). Submit the \$15 non-refundable fee (payable by credit card, debit card or electronic check) with your application. Applicants may submit more than one certificate application per term using the Online Certificate Application; the same fees apply for each additional application.

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 graduation for students entering this program in the 2011-2012 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.

		Credits	Hrs/week Lec-Lab
Summer (Prior to start of first semester)			
10-110-175	Intro 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	Paralegal Professional Internship	2	2-0
Semester Total		14	
Second Semester			
10-110-105	Legal Writing	3	3-0
10-110-142	Paralegal Internship	3	3-0
Electives		9	E
Semester Total		15	

Keyboarding Entrance Requirement: Students are required to pass a test that demonstrates keyboarding competency at 50 WPM with no more than 5 errors.



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 contracts. Restricted to students admitted to the following program(s): 10-110-1 Paralegal or 90-110-1, Paralegal Post-baccalaureate Certificate. 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 in 10-110-101.

10-110-104 Legal Research 3 credits

Provides students with an application of legal research techniques, using traditional and computer-assisted resources. Prerequisite or concurrent enrollment in: 10-110-101.

10-110-105 Legal Writing 3 credits

Legal Writing is an advanced writing course concentrating on legal correspondence, forms, memoranda and briefs. Prerequisites or concurrent enrollment in: 10-110-104.

10-110-141 Computer Applications-Legal 3 credits

Provides the learner with skills to use computer applications typical to a law office including spreadsheets; database; e-mail; timekeeping and billing software; litigation management software; and the Internet. Pre-requisite or concurrent enrollment in: 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. In addition, students meet one hour weekly to discuss legal office experiences and ethical considerations, learn effective job search techniques, and develop professional image. Prerequisites: 10-110-101, 10-110-176, and 10-110-104. Prerequisite or concurrent enrollment in: 10-110-105.

10-110-175 Intro to Paralegal Profession 1 credit

This course will (i) focus on the paralegal profession; (ii) introduce students to the classes offered in the Program; (iii) provide tools to assist the students to succeed in the Program and their careers; (iv) administer the required Program entrance keyboarding test; and (v) advise and enroll students for fall. Restricted to students admitted to the following program(s): 10-110-1 Paralegal or 90-110-1 Paralegal Post-baccalaureate Certificate.

10-110-176 Paralegal Professional Internship 2 credit

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. Prerequisite or concurrent enrollment in: 1-110-101 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
10-110-114	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	3 credits
10-110-168	Criminal Law for Paralegals	3 credits
10-110-170	Intellectual Property Law	3 credits
10-110-171	Law & Contemporary Problems	3 credits
10-110-173	Contract Law in a Global Economy	3 credits

Career Potential:

- Law Office Paralegal
- Public/Government Paralegal
- Corporation Paralegal
- Trust Department Paralegal
- Real Estate Paralegal
- Law Office Manager

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

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Rev. 03/11

Property Management Certificate

Program Number: 90-194-1

Certificate

Business and Marketing Program Cluster

Center for 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.

Certificate Application Process

To apply, see: Apply Online (on the Madison College website). [Create an ApplyWeb account](#) and follow the [instructions](#) to complete the [Online Certificate Application](#) before the [application deadline](#). Submit the \$15 non-refundable fee (payable by credit card, debit card or electronic check) with your application. Applicants may submit more than one certificate application per term using the Online Certificate Application; the same fees apply for each additional application.

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.

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

Courses	Credits	Hrs/week	
		Lec	
10-194-182 Real Estate Law*	4	4-0	
10-194-185 Real Estate Brokerage*	2	2-0	
10-194-190 Property Management 1	3	3-0	
10-194-191 Property Management 2	3	3-0	
10-194-195 Real Estate Internship	3	3-0	
10-194-197 Marketing for Property Management	2	2-0	
10-194-198 Maintenance for Property Management	2	2-0	
Total	19		

Courses should be taken in the order listed above.

*Real Estate Law and Real Estate Brokerage must be taken in the same semester. Property Management 1 may also be taken concurrently.



Required Courses

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.

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.

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

Further explores the various types of properties to manage (office, shopping center, hotel/motel, industrial, rural, etc.) and provides "real world" experience. Students will engage in independent and team projects evaluating "green" properties and visit off-campus venues such as a property management professional event.

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.

10-194-197 Marketing for Property Management 2 credits

Explores marketing as it relates to property management in various arenas (residential, commercial, industrial, governmental, hotels, etc.). Topics such as marketing principles, market and property analysis, property maintenance, CAP rates, and advertising methods will be covered. Additional real estate topics will be included as necessary.

10-194-198 Maintenance for Property Management 2 credits

Gives an overview of maintenance and repair as it relates to property management. Students will learn and identify distinct differences of maintenance issues between residential and commercial properties. Checklists for preventative maintenance, which are a key component in maintaining a sound structure, will be developed.

Career Potential:

- Property Manager
- Real Estate Agent
- Real Estate Broker

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

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Rev. 03/11

Quality Management

Program Number: 90-185-1

Certificate

Business and Marketing Program Cluster

Center for Business and Applied Arts

Program offered online

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

About the Program

This certificate features a course of study designed to teach skills that are necessary for implementing the concepts of quality improvement or continuing process improvement in a service, manufacturing or government organization. The program 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.

Certificate Application Process

To apply, see: Apply Online (on the Madison College website). [Create an ApplyWeb account](#) and follow the [instructions](#) to complete the [Online Certificate Application](#) before the [application deadline](#). Submit the \$15 non-refundable fee (payable by credit card, debit card or electronic check) with your application. Applicants may submit more than one certificate application per term using the Online Certificate Application; the same fees apply for each additional application.

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

10-185-110 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.

10-185-111 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.

COURSES

● Lead Worker

		Credits	Hrs/week Lec-Lab
10-185-110	Managing for Quality	3	3-0
10-185-111	Understanding Organizational Change	3	3-0
10-185-112	Employee Involvement	3	3-0
10-185-116	Intro to Quality Systems	3	3-0
Total		12	

Career Potential:

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

10-185-112 Employee Involvement 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.

10-185-116 Intro 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.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.



Real Estate Sales Certificate

Program Number: 90-194-2

Certificate

Business and Marketing Program Cluster

Center for 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.

Certificate Application Process

To apply, see: Apply Online (on the Madison College website). [Create an ApplyWeb account](#) and follow the [instructions](#) to complete the [Online Certificate Application](#) before the [application deadline](#). Submit the \$15 non-refundable fee (payable by credit card, debit card or electronic check) with your application. Applicants may submit more than one certificate application per term using the Online Certificate Application; the same fees apply for each additional application.

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

10-104-104 Selling Principles 3 credits
This course acquaints the student with the basic principles and applications of the sales process as they may apply to industrial, wholesale and retail selling situations. This would include prospecting and qualifying, planning and pre-approaching, approaching the customer, the sales presentation/demonstration, handling objections, closing the sale and post-sale service and follow-up.

10-104-108 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 educate and enhance current and new selling skills. Prerequisite: Selling Principles, 10-104-104 or Instructor Consent.

Curriculum

The courses listed below outline the requirements for the Real Estate Sales Certificate. There is an additional portion of the certificate in which you can have Sales Management emphasis. Program requirements are subject to change.

FIRST YEAR		Hrs/week	
First Semester	Credits	Lec	Lab
10-104-104 Selling Principles	3	3	0
10-104-114 Social Media Campaigns.....	3	3	0
10-194-182 Real Estate Law.....	4	4	0
(Salesperson Educational Requirement)			
<u>10-194-185 Real Estate Brokerage</u>	<u>2</u>	<u>2</u>	<u>0</u>
Semester Total	12		
Second Semester			
10-104-108 Business to Business Sales	3	3	0
10-104-124 Retail Management	3	3	0
<u>10-194-195 Real Estate Internship</u>	<u>3</u>	<u>3</u>	<u>0</u>
Semester Total	9		
Sales Emphasis:			
10-104-160 Sales Management.....	3	3	0



Program Courses (continued)

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.

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

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10-104-124 Retail Management 3 credits

This course focuses on the concepts, theories, and hands on skills of managing a retail operation. Key areas of emphasis are management, operations, human resources, merchandising, loss prevention and the supply channel.

10-104-160 Sales Management 3 credits

The role of the Manager in the Sales process is explored in this advanced sales class. Creating a sales program, developing your sales force, motivating sales people, and developing companies to be more selling focused will all be explored through research, case studies, practical applications and projects. Sales skills will be enhanced through the role of a strong Sales Manager. Prerequisite: Selling Principles, 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. Also available in CD-ROM format.

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.

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.

Retail Management Certificate

Program Number: 90-104-4

Certificate

Business and Marketing Program Cluster

Center for 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 Retail Management certificate is designed to update and/or broaden the knowledge of employees in the field of retail management. Ideal candidates would be students currently working in retail, food service, or other sales industry positions or have other experiences in one of these fields.

The certificate will acquaint students with the various job duties and work ethic involved with working in the retail industry. Students will be introduced to standard industry reports that are used to support recommendations for improvement relating to operations, finance, human resources, and merchandising. Students will increase their skills and confidence in the areas of supervising, hiring, training, and providing leadership effectively.

Classes are available in hybrid or face-to-face format.

Certificate Application Process

To apply, see: Apply Online (on the Madison College website). [Create an ApplyWeb account](#) and follow the [instructions](#) to complete the [Online Certificate Application](#) before the [application deadline](#). Submit the \$15 non-refundable fee (payable by credit card, debit card or electronic check) with your application. Applicants may submit more than one certificate application per term using the Online Certificate Application; the same fees apply for each additional application.

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

Courses	Credits	Hrs/week	
		Lec	
10-104-124 Retail Management	3	3-0	
10-196-191 Principles of Supervision	3	3-0	
10-104-123 Merchandising Planning & Control*	3	3-0	
In addition, take one of the following courses:			
10-104-182 Portfolio Presentation OR	3	3-0	
10-104-194 Visual Merchandising**	3	3-0	
Total	12		

Courses should be taken in the order listed above. Retail Management must be taken first.

*This course is currently offered only in the fall semester.

**This course is currently offered only in the spring semester.

This certificate may be offered beginning in the spring semester of 2010 in an accelerated method for a cohort group. For more information, contact Betty Hurd at 608-246-6486 or bhurd@matcmadison.edu.



Required Courses

10-104-123 Merchandise Planning & Control 3 credits
Students analyze the buying and merchandising functions in various types of organizations. The principles, procedures and techniques practiced by merchandisers are studied. Students may have the opportunity to interview a buyer, visit a market, participate in a floor move in a local business, compile a resource folder of relevant tools for buyers, and/or complete a computer simulation. Prerequisites: 10-104-194, 10-104-195, 10-104-196, 10-104-197, or instructor consent. Prerequisites will be waived for certificate students. Contact the department office (608-246-6003) to register for this class.

10-104-124 Retail Management 3 credits
Upon successful completion of this course, the student should be able to describe and analyze retail store organization and operation including customer markets, store location and design, human resource management, merchandise planning and control, and retail promotion.

10-104-182 Portfolio Presentation 3 credits
This course includes an overview of methods to searching for a position in the fashion marketing field. We explore on and off line methods of personal and academic assessment. Mock interviews, including a viewing of your portfolio work, will be video taped. Resume writing and personal correspondence are included in a personalized approach.

10-104-194 Visual Merchandising 3 credits
The principles and elements of design are incorporated into interior and exterior merchandise presentation. Coordination of the total sales promotion effort is emphasized. Students are required to build many types of displays.

10-196-191 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.

Career Potential:

- Assistant Store Manager
- Store Manager
- Retail Human Resources Manager
- Retail Operations Manager
- Retail Loss Prevention Manager

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

- Store Owner
- Retail Buyer

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

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Rev. 03/11

Sales Academy Certificate

Program Number: 90-104-2

Certificate

Business and Marketing Program Cluster

Center for 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.

Certificate Application Process

To apply, see: [Apply Online](#) (on the Madison College website). [Create an ApplyWeb account](#) and follow the [instructions](#) to complete the [Online Certificate Application](#) before the [application deadline](#). Submit the \$15 non-refundable fee (payable by credit card, debit card or electronic check) with your application. Applicants may submit more than one certificate application per term using the Online Certificate Application; the same fees apply for each additional application.

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

Courses	Credits	Hrs/week	
		Lec	
10-104-104 Selling Principles	3	3-0	
10-104-108 Business to Business Sales	3	3-0	
10-104-124 Retail Management	3	3-0	
10-104-160 Sales Management.....	3	3-0	
Total	12		

Courses

10-104-104 Selling Principles 3 credits

Acquaints students with the basic principles and applications of the sales process as they apply to industrial, wholesale and retail selling situations. Includes prospecting and qualifying, planning and pre-approaching, approaching the customer, the sales presentation/demonstration, handling objections, closing the sale and post-sale service and follow-up.

10-104-108 Business to Business Sales 3 credits

This advanced sales class explores the world of business-to-business selling. Topics explored include Negotiation Skills, Territory Management, Prospecting/Qualifying, Consultative Sales, Trade Show Selling, Relationship Building and Selling in the E-Business Realm. Case studies, role plays and sales exercises will all be practiced to broaden and deepen selling skills. The course is recommended for both new sales professionals and is a perfect refresher or skill-building course for seasoned veterans.

10-104-124 Retail Management 3 credits

This course focuses on the concepts, theories, and hands on skills of managing a retail operation. Key areas of emphasis are management, operations, human resources, merchandising, loss prevention and the supply channel.

10-104-160 Sales Management 3 credits

The role of the Manager in the Sales process is explored in this advanced sales class. Creating a sales program, developing your sales force, motivating sales people, and developing companies to be more selling focused will all be explored through research, case studies, practical applications and projects. Sales skills will be enhanced through the role of a strong Sales Manager.

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

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Small Business Entrepreneurship

Program Number: 31-145-1

One-Year Technical Diploma

Business and Marketing Program Cluster

Center for 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.

Curriculum

The courses listed below outline the requirements for graduation for students entering this program in the 2011-2012 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 (myMadisonCollege) account for specific graduation requirements. Program requirements are subject to change.

	Credits	Hrs/week Lec-Lab
First Semester		
10-145-105 Operations Management	3	3-0
10-145-106 Small Business Marketing/Promotion	3	3-0
10-104-161 Marketing Technology Applications	3	3-0
10-104-185 Customer Service Management	3	3-0
10-801-195 Written Communications	3	3-0
10-804-123 Math with Business Applications	3	3-0
Semester Total	18	
Second Semester		
10-101-106 Accounting Concepts	3	3-0
10-104-104 Selling Principles	3	3-0
10-196-191 Principles of Supervision	3	3-0
10-145-102 Small Business Development and Planning	3	3-0
10-145-108 Field Experience Seminar	2	1-8
10-809-199 Psychology of Human Relations	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.

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.

10-104-161 Marketing Technology Applications 3 credits
Through hands-on experience, participants will utilize advanced techniques and tools to search the internet, manage spreadsheets, create presentations, manipulate relational databases and are exposed to desktop publishing software. Participants are taught effective presentation techniques, appropriate email etiquette and the applications of transforming technology.
Prerequisites: Keyboarding, Introduction to Windows, File Management, Introduction to Word or equivalent experience.

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.

10-104-104 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.

10-104-185 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.

10-145-105 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 Promotion 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.

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.org. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

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Rev. 03/11

Supervisory Management

Program Number: 10-196-1

Associate in Applied Science Degree

Business and Marketing Program Cluster

Center for Business and Applied Arts

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

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 education and training for present and future supervisors through a curriculum divided into three development areas: Core Management, Personal Skills and Leadership Skill Development.

Traditional Semester Classes - provides students with regular semester-long classes on campus. Classes meet one evening per week over the course of the semester.

Accelerated "Fastrack" 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.

Madison College-Online Delivery - offers learners the opportunity to complete their Supervisory Management program courses online.

Curriculum

The courses listed below outline the requirements for graduation for students entering this program in the 2011-2012 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 (myMadisonCollege) account for specific graduation requirements. Program requirements are subject to change.

	Credits	Hrs/week Lec-Lab
Supervisory / Management Skills		
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 Skill Development		
10-196-164 Personal Skills for Supervisors	3	3-0
Supervisory / Leadership Skills		
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	1-0
10-103-133 Excel-Beginning.....	1	1-0
10-103-143 Powerpoint.....	1	1-0
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 & App	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		
<u>Electives</u>	<u>3</u>	<u>E</u>
Total elective requirements	3	
TOTAL (all requirements)	66	

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

Program Courses

10-196-191 Principles of Supervision 3 credits

The learner applies the skills and tools necessary to perform the functions of a front line manager. Each learner will demonstrate the application of strategies to make the transition to a contemporary supervisory role including: operations planning and analysis, delegation, staffing, problem solving, motivation, training, leadership and performance assessment.

10-196-192 Foundations of Quality 3 credits

The learner applies the skills and tools necessary to implement and maintain a continuous improvement environment. Each learner will demonstrate the application of a personal philosophy of quality, identify stakeholder relationships, customer expectations, systems-focus, use of appropriate models and tools, managing improvement projects and measuring effectiveness of continuous improvement activities.

10-196-193 Human Resource Management 3 credit

The learner applies the skills and tools necessary to work effectively with the Human Resource (HR) function. Each learner will gain an understanding of the supervisor's role in contemporary human resource management regarding: the impact of EEOC, writing job descriptions, recruitment and selection, conducting interviews, employee orientation, policies and procedures, training, performance management, employee counseling, and effective use of compensation and benefit strategies.

10-196-134 Legal Issues for Supervisors 3 credits

The learner applies the skills and tools necessary for supervisors to function effectively within today's legal framework. Each learner will demonstrate the application of practices to meet the requirements of U.S. employment laws including implications for: staffing, disciplinary actions and documentation, preventing harassment and discrimination, safety, workplace violence, incident investigation, privacy issues and maintaining organizational policies and procedures.

10-196-188 Project Management 3 credits

The learner applies the skills and tools necessary to design, implement, and evaluate formal projects. Each learner will demonstrate the application of methods for project planning, developing project proposals, use of relevant software, working with project teams, sequencing tasks, charting progress, dealing with variations, managing project budgets and resources, implementation and project assessment.

10-196-164 Personal Skills for Supervisors 3 credits

The learner applies the skills and tools necessary to deal with the personal challenges inherent with a manager's role. Each learner will demonstrate the application of time management techniques, personal planning, continuous learning, valuing rights and responsibilities of others, effective communication, assertiveness and dealing effectively with stress.

10-196-190 Leadership Development 3 credits

The learner applies the skills and tools necessary to fulfill his/her role as a contemporary leader. Each learner will demonstrate the application of strategies to evaluate leadership effectiveness and communicate vision, mission and goals. Additional topics include: ethical behavior, personal leadership styles and flexibility, impacts of power, employee development, coaching and effective conflict resolution.

10-196-189 Team Building and Problem Solving 3 credits

The learner applies the skills and tools necessary to facilitate problem solving in a team environment. Each learner will demonstrate the application of strategies regarding: the necessary roles for team effectiveness, stages of team development, team problem solving and consensus, systematic processes for problem definition, data acquisition and analysis, generating alternative solutions, choosing solutions, implementation planning and evaluation.

10-196-168 Organizational Development 3 credits

The learner applies the skills and tools necessary to effectively navigate within an organizational structure. Each learner will demonstrate the application of theories regarding the impact of globalization on organizational design, operation and culture. Other topics include: the impact of change, organizational decision making and the benefit of vision, mission and goals plus future challenges affecting the organizations.

10-196-116 Human Behavior at Work 3 credits

In this course, the learner applies the skills and tools necessary to work effectively with behavior found in organizations. Each learner will explore and demonstrate the application of theories in motivation, perception, organizational culture, employee development and communication. In addition, concepts such as diversity, decision making, conflict management and managing in a global environment will be introduced.

10-196-169 Diversity and Change Management 3 credits

The learner applies the skills and tools necessary to implement and maintain a diverse work environment that values change. Each learner will demonstrate the application of assessing the current extent of diversity in the workplace, analyze the effect of perceptions, attitudes, biases and organization culture on diversity, dealing with barriers, change management strategies, process and reactions, measuring progress and celebrating success.

10-196-136 Safety in the Workplace 3 credits

The learner applies the skills and tools necessary to provide a safe and secure work environment. Each learner will demonstrate the application of strategies regarding safety awareness, compliance, investigation and documentation. Other topics include: safety orientation, chemical safety, right-to-know, inspections, risk analysis, workplace violence, substance abuse, first aid, fire and electrical safety, emergency preparedness and liaison with external agencies.

10-196-105 Occupational Trends/Issues 3 credits

In this course, the learners summarize, present and discuss information on major trends and issues affecting supervisors in the complex, technological world of the future. Learners apply the knowledge gained in program courses, problem-solving skills and their personal experiences to identify successful strategies for the future.

Career Potential:

The Supervisory Management program is designed to meet the professional development needs of present and aspiring supervisors as their organizational roles change now and in the future.

- Supervisor
- Lead Worker
- Team Leader
- Shift Leader
- Team Facilitator
- Coach

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

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Rev. 02/11

Baking / Pastry Arts

Program Number: 31-314-1

One-Year Technical Diploma

Hospitality Program Cluster

Center for 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 Baking/Pastry Arts Program provides students with a comprehensive hands-on experience in baking and pastry arts. Students will obtain the practical and theoretical training necessary to produce quality bakery products from scratch. An emphasis is placed on decorative pastry arts including cake decorating, sugar and chocolate work, and plated dessert presentations. Through their experiences in the bakery store, students will learn effective merchandising and sales training techniques.

This program is designed to be completed in two semesters plus the summer internship. 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 accredited by the Retail Bakers of America and the American Culinary Federation Educational Institute. 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 \$12 to \$15 per hour.

Unique Requirements for Admissions

High school diploma or GED. A COMPASS or equivalent assessment test is required prior to registration. Competency in Windows, Internet and basic word processing is necessary for success in this program.

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 Baking/Pastry Arts program courses.

Potential students must be physically able to lift 50# on a routine basis and stand for a minimum of eight hours per day. They should also have good communication and social skills to be successful in this program.

Curriculum

The courses listed below outline the requirements for graduation for students entering this program in the 2011-2012 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.

		Hrs/week
Summer (prior to start of program)	Credits	Lec-Lab
31-314-300	Baking Boot Camp*	1 1-1
First Semester**		
10-109-124	Fundamentals of Food Preparation*	2 1-2
31-314-315	Baking Lab 1*	3 0-6
31-314-325	Baking Lab 2*	3 0-6
31-314-365	Chocolate Basics*	1 0-2
31-314-370	Chocolate Candies*	1 0-2
31-314-375	Experimental Baking*	1 0-2
31-314-384	Cake Decorating*	2 0-4
10-316-101	Principles of Sanitation*	1 1-0
31-314-310	Baking Theory*	1 2-0
	Semester Total	15
Second Semester**		
31-314-335	Specialty Cakes and Miniatures*	3 0-6
31-314-345	Artisan Breads and Breakfast Pastries*	3 0-6
31-314-355	Bakery Production*	3 0-6
31-314-372	Chocolate & Sugar Confections*	1 0-2
31-314-388	Advanced Cake Decorating*	2 0-4
10-316-152	Nutrition*	2 2-0
	Semester Total	14
Interim		
31-314-389	Bakery Seminar*	1 2-0
Summer		
31-314-390	Bakery Internship*	2 0-8

*Courses only offered in semester shown.

**All courses must be taken concurrently each semester.



Program Courses

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 fall 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 and baking lab, as well as participate in a required field trip to a bakery.

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: 31-314-310, 10-316-101 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 various straight yeast doughs 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, 31-314-310 and appropriate Math Placement test score or equivalent course.

31-314-335 Specialty Cakes and Miniatures 3 credits

This course covers all aspects of specialty cake baking, constructing, and assembly. Production includes various types of foam cakes, creamed cakes, icings and fillings, along with dessert sauces, and plating techniques. European classic tortes as well as contemporary entremets and petit gateau will be demonstrated with lab time for practice. A final project is the creation of a dessert buffet. Prerequisites: 10-316-101 and 31-314-315.

31-314-345 Artisan Breads & Breakfast Pastries 3 credits

This course provides students with a working knowledge of the production of pre-fermented yeast doughs 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. Prerequisites: 10-316-101 and concurrent enrollment in all second semester baking/pastry arts courses.

31-314-365 Chocolate Basics 1 credit

Gives learners a basic introduction 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. Brownies, mousse, and hot chocolate are made using these different chocolates and the products are evaluated. After learning to temper chocolate, an assortment of truffles is produced. Prerequisites: 10-316-101, 31-314-310 and appropriate Math Placement test score or equivalent course.

31-314-370 Chocolate Candies 1 credit

This course builds on competencies learned in Chocolate Basics. Advanced techniques of candy making are practiced such as hand dipped centers, caramel making, and chocolate molds. Prerequisite: 31-314-365.

31-314-372 Chocolate & Sugar Confections 1 credit

Students learn to properly cook sugar and isomalt. Basic sugar techniques, such as poured, blown and pulled sugar are practiced. Gum paste amenities are created. Decorative chocolate techniques such as chocolate clay, piping and spraying are practiced. Students create a final chocolate showpiece. Prerequisites: 31-314-365 and 31-314-370.

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 score 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. Prerequisite: 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 airbrushing and tiered cake assembly are covered. Prerequisites: 31-314-384 and 10-316-101.

31-314-389 Bakery 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. This interim course is taken in between the spring semester and the summer internship.

31-314-390 Baking Internship 2 credits

Provides an opportunity to gain practical work experience through supervised internships at an approved job site. Students develop written competency plans with individualized objectives that compliment and enhance instruction given in bakery labs. Prerequisite: completion of all core courses in the Baking/Pastry Arts program.

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.

31-314-310 Baking Theory 1 credit

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. Ingredient cost-outs are calculated. Prerequisite: Appropriate Reading Placement test score or equivalent course.

10-316-152 Nutrition 2 credits

Provides information about nutrition as it applies to the food service industry. The six classes of nutrients are discussed 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 also is discussed.

Career Potential:

- Bakery Worker/ Assistant Pastry Chef
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.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. 02/11

Barber/Cosmetologist

Program Number: 31-502-1

One-Year Technical Diploma

Hospitality Program Cluster

Center for 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 \$1,500.

Curriculum

The courses listed below outline the requirements for graduation for students entering this program in the 2011-2012 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.

		Hrs/week	
		Credits	Lec-Lab
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	



Program Courses

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. Prerequisites: 31-502-340 and Corequisites: 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. Corequisites: 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 nomenclature selection, 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. Corequisites: 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. Presents the 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 and Corequisites: 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. Prerequisites: all first semester courses.

31-502-343 Barber/Cosmetology Theory 4 3 credits

Presents the 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.

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.org. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

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Rev. 03/11

One Semester Certificate

Hospitality Program Cluster

Center for 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 Cake Certificate is unique in providing students with a comprehensive hands-on experience in the specialized art of cake baking and decorating. Students obtain the practical and theoretical training necessary to produce quality cake products from scratch. The emphasis is on the creation of wedding, celebration, and specialty cakes along with the necessary knowledge needed to operate a cake business.

For career changers, professionals, and novices, this certificate will help to build a solid foundation of knowledge and achieve a successful career. In addition, all but three of the courses transfer to the one-year technical diploma in Baking/Pastry Arts.

Unique Requirements for Admissions

Students must have appropriate competency in math, reading and writing to succeed in this certificate program. A COMPASS or equivalent assessment test is required prior to registration. Competency in Windows, Internet and basic word processing is necessary for success in this certificate.

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.

Certificate Application Process

To apply, see: Apply Online (on the Madison College website). [Create an ApplyWeb account](#) and follow the [instructions](#) to complete the [Online Certificate Application](#) before the [application deadline](#). Submit the \$15 non-refundable fee (payable by credit card, debit card or electronic check) with your application. Applicants may submit more than one certificate application per term using the Online Certificate Application; the same fees apply for each additional application.

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 students taking the Cake certificate for the 2011-2012 academic year. Certificate requirements are subject to change.

Courses	Credits	Hrs/week
		Lec-Lab
10-316-101* Principles of Sanitation	1	1-0

*The sanitation requirement is fulfilled with proof of a current National Restaurant Association (NRA) ServSafe certification. The sanitation course must be completed by the end of Semester Two to fulfill the Cake Certificate requirement.

Semester One

We recommend classes listed below be taken in the same semester.

31-314-310 Baking Theory.....	1	2-0
31-314-335 Specialty Cakes and Miniatures	3	0-6
31-314-384 Cake Decorating.....	2	0-4

Semester Two

We recommend classes listed below be taken in the same semester.

31-314-312 Basic Baking	1	0-2
31-314-388 Advanced Cake Decorating.....	2	0-4
31-314-372 Chocolate & Sugar Confections	1	0-2

Semester Three

We recommend classes listed below be taken in the same semester

31-314-356 Bakery Merchandising and Marketing	1	0-2
31-314-358 Bakery Business.....	3	0-6

Total Credits 15



Program Courses

31-314-310 Baking Theory 1 credit

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. Ingredient cost-outs are calculated. Prerequisite: Appropriate Reading Placement test score or equivalent course. Prerequisite: Appropriate Reading Placement Test score or equivalent course.

31-314-312 Baking Basics 1 credit

Students develop a foundation of basic baking principles through hands-on application of production equipment in a state-of-the-art baking lab. Students will prepare a limited variety of standard bakery products to obtain knowledge of many baking processes. Safe use of bakery equipment and proper sanitation procedures are emphasized. Prerequisite: Baking Theory, 31-314-310.

31-314-335 Specialty Cakes and Miniatures 3 credits

This course covers all aspects of specialty cake baking, constructing, and assembly. Production includes various types of foam cakes, creamed cakes, icings and fillings, along with dessert sauces, and plating techniques. European classic tortes as well as contemporary entremets and petit gateau will be demonstrated with lab time for practice. A final project is the creation of a dessert buffet.

31-314-356 Bakery Merchandizing and Marketing 1 credit

Students have the opportunity to operate La Patisserie, the retail bakery associated with the lab. There they will learn about the importance of product presentation in the bakery cases in addition to effective merchandising techniques and customer service.

31-314-358 Bakery Business 3 credits

Students will begin the development of a Business Plan for a Cake or Bakery business, along with learning about the necessary equipment needed for the different types of bakery operations. Information will be provided about the various legal entities possible to start a business. Samples of profit/loss statements will be discussed along with pricing, customer consultation, cake portions, design, packaging, and delivery logistics.

31-314-372 Chocolate & Sugar Confections 1 credit

Students learn to properly cook sugar and isomalt. Basic sugar techniques, such as poured, blown and pulled sugar are practiced. Gum paste amenities are created. Decorative chocolate techniques such as chocolate clay, piping and spraying are practiced. Students create a final chocolate showpiece.

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.

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 airbrushing and tiered cake assembly are covered. Prerequisite: Cake Decorating, 31-314-384.

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.

Career Potential:

- **Assistant Cake Decorator, Finisher**
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:

- **Commercial Cake Decorator**
- **Cake Shop Owner**

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

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Rev. 03/11

Culinary Arts

Program Number: 10-316-1

Associate in Applied Science Degree

Hospitality Program Cluster

Center for 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.

Unique Admission Requirements

A high school diploma or GED is required for admission. A final cumulative grade point average to equate to a C+ average (2.25 GPA) and satisfactory grades in core academic subjects are expected of students entering the program directly from high school. A COMPASS or equivalent assessment test is required prior to registration. Competency in Windows, Internet and basic word processing is necessary for success in this program. Students may take Windows (10-103-134/135), Word-Beginning (10-103-137) and/or Internet Introduction (10-103-146) during the first semester if they do not meet this requirement.

Students must have appropriate competency in math, reading and writing to succeed in this program. If remedial course work is recommended, it is suggested that these courses be completed before beginning the Culinary Arts program courses.

Potential students must be physically able to lift 50# on a routine basis and stand for a minimum of eight hours per day. They should also have good communication and social skills to be successful in this program.

Curriculum

The courses listed below outline the requirements for graduation for students entering this program in the 2011-2012 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		Credits	Hrs/week Lec-Lab
First Semester			
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
10-316-158	Food Purchasing Analysis	2	2-0
10-801-195	Written Communication	3	3-0
10-804-123	Math with Business Applications	3	3-0
Semester Total		15	

Second Semester			
10-101-116	Hospitality Industry Accounting 1	3	3-0
10-316-121	Professional Cooking 2**	4	0-8
10-316-139	Catering	2	1-2
10-316-152	Nutrition	2	2-0
10-801-196	Oral/Interpersonal Communication	3	3-0
10-809-199	Psychology of Human Relations	3	3-0
Semester Total		17	

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
10-316-108	Culinary Baking Fundamentals**	1	1-0
10-316-115	Culinary Baking Lab**	2	0-4
10-316-132	Wait Staff Training**	1	1-0
10-316-140	Menu Planning**	1	1-0
10-809-197	Contemporary American Society	3	3-0
	<u>Elective</u>	<u>3</u>	<u>E</u>
Semester Total		17	

Second Semester			
10-109-125	Tourism Management	3	3-0
10-316-130	Gourmet Foods	4	1-6
10-316-133	Garde Manger/Decorative Foods	2	1-2
10-316-135	Dining Room Operations	1	1-0
10-809-166	Intro to Ethics: Theory & Application OR	3	3-0
20-809-276	Business Ethics ^a	(3)	3-0
10-809-195	Economics	3	3-0
Semester Total		16	

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.

**All courses listed with double asterisks 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.



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 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. Prerequisite: 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. 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

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. Co-requisite: 10-316-108.

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: 10-316-101, 10-316-106 and 10-316-111.

10-316-132 Wait Staff Training 1 credit

Focuses on types of dining room service appropriate to various restaurant operations. Students gain understanding of relationship between "front" and "back" of the house. Co-requisite: 10-316-104.

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. Co-requisite: 10-316-135.

10-316-133 Garde Manger/Decorative Foods 2 credits

The art and craft of the cold kitchen as it applies to modern day chefs. Students will work with ice and learn a basic technique for carving ice. From the ice students will gain knowledge of the professional garde manger and all areas that are classified cold food. Understanding the science that is involved with garde manger and how to correctly prepare, store and use cold foods. Prerequisites: 10-316-101 and 10-316-111.

10-316-135 Dining Room Operation 1 credit

Students learn and practice the responsibilities common in dining room management. Various styles of table service, tableside presentations and beverage service are implemented. 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 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.

10-316-158 Food Purchasing Analysis 2 credits

Focuses on the mechanics of food and beverage purchasing: what and where to buy, the selection of suppliers, the various purchasing systems, and the practical aspects and legal considerations of food buying. Prerequisite: Appropriate Math Placement test score or equivalent course. This course is offered in an online format only.

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 and 10-316-121, 10-316-101, 10-316-115, 10-316-106 and 10-316-108; 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. Co-requisite: 10-316-121.

Recommended Electives

10-109-136	Tourism Law	3 credits
10-316-112	Cuisines of the World ^a	4 credits
10-316-118	Meat Cutting ^a	1 credit
10-316-178	Americana Cuisine ^a	2 credits
10-316-189	Breakfast and Lunch Cookery ^b	2 credits

^aOffered first semester only.

^bOffered second semester only.

Career Potential:

- **Prep Cooks/Cooks**
Prepare various foods such as meats, vegetables, soups and sauces as directed by a chef or kitchen manager.
- **Line Cooks**
Are directly involved with online food preparation.
- **Broiler Chefs or Garde Mangers**
Are primarily food preparation people for a particular station in the kitchen.
- **Sous Chefs**
Manage or supervise a particular station in the kitchen; are a direct link to kitchen from the executive chef.
- **Executive Chefs or Owner/Operators**
Generally supervise all kitchen personnel and coordinate purchase, storage and preparation of all food items.

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

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Rev. 03/10

Destination Management Certificate

Certificate

Hospitality Program Cluster

Center for 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 Destination Management Certificate is designed to develop competencies in marketing, customer service, human relations, problem solving, communications and total quality management, as well as the technical skills needed for Convention and Visitors Bureaus and Chambers of Commerce. Graduates are prepared for careers with Convention and Visitors Bureaus, Chambers of Commerce, motorcoach companies, tour wholesalers, and other Destination Management organizations.

Certificate Application Process

To apply, see: Apply Online (on the Madison College website). [Create an ApplyWeb account](#) and follow the [instructions](#) to complete the [Online Certificate Application](#) before the [application deadline](#). Submit the \$15 non-refundable fee (payable by credit card, debit card or electronic check) with your application. Applicants may submit more than one certificate application per term using the Online Certificate Application; the same fees apply for each additional application.

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

10-103-143 PowerPoint 1 credit
Introduction to PowerPoint presentation software. Create, edit, save, run and print a presentation. Insert clip art, apply animation and slide transition effects, import text, customize background and bullets, insert a table, scale objects, create a WordArt object and create an interactive document. Prerequisites: competency in Windows or Windows 10-103-134 or 10-103-135 AND experience using word processing software.

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 Program Design and Development 3 credits
The design and development of student learning experiences have many implications that meeting planners must incorporate into the programming of a meeting. Identifying the meeting's objectives determines the subject matter content, appropriate educational approach and meeting setting. Constructive and well-organized program planning is vital to the successful development of educational programs and the meeting outcome.

Curriculum

Courses	Credits	Hrs/week Lec-Lab
10-109-105 Fundamentals of Destination Management*	3	3-0
10-109-120 Tourism Business Planning**	3	3-0
10-104-102 Marketing Principles	3	3-0
10-103-143 PowerPoint (8 week class)	1	0.75-2.25
Semester Total	10	

Plus ONE of the following courses:

10-109-102 Fundamentals of Meeting Management	3	3-0
10-109-104 Program Design and Development**	3	3-0
10-109-106 Programming and Public Relations**	3	3-0

* Courses offered in fall semester only

**Courses offered in spring semester only

10-109-105 Fundamentals of Destination Mgmt. 3 credits
This online course examines tourism development, relationships with Boards of Directors, government relations, fund raising, and basic laws. Aspects of volunteer management, team building, time management, media relations, sales and marketing, and public relations will be explored. Hot topics of revenue diversification, ethics, visitor centers, retail development and special event expansion will be discussed.

10-109-106 Programming and Public Relations 3 credits
This course provides an investigation of planning, organizing, conducting and evaluating recreation experiences, support systems and public relations in private, public and commercial agencies. Prerequisite for Recreation programs: completion or concurrent enrollment in one of the following: 10-109-101 or 10-109-103. Prerequisite for Meeting and Event Management programs: completion or concurrent enrollment in one of the following: 10-109-101, 10-109-103 or 10-109-105.

10-109-120 Tourism Business Planning 3 credits
Examines the historical development, growth, trends and future directions of profit-oriented commercial tourism. Surveys tourism, recreation and hospitality industries; focuses on starting, marketing and managing a tourism enterprise. Students create commercial tourism business plans.

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.

Career Potential:

- Tourism Development Specialist
- Economic Development Specialist
- Membership Development Specialist
- Marketing Operations
- Database Operations

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

- Director, Visitor and Convention Bureau
- Director, Chamber of Commerce
- Marketing Manager
- Special Event Manager
- Sales Manager
- Communications Director

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

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Certificate

Hospitality Program Cluster

Center for 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. Individuals already working in the field who have three years of fitness-industry direct experience, or five years, post-high school, full-time work experience are also eligible for acceptance into this certificate program. For further information, please contact: Tracie Bowers, lead instructor, 608-246-6057 or tdbowers@matcmadison.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.

Students who complete this certificate typically earn \$18,000 to \$24,000 per year.

Certificate Application Process

To apply, see: Apply Online (on the Madison College website). [Create an ApplyWeb account](#) and follow the [instructions](#) to complete the [Online Certificate Application](#) before the [application deadline](#). Submit the \$15 non-refundable fee (payable by credit card, debit card or electronic check) with your application. Applicants may submit more than one certificate application per term using the Online Certificate Application; the same fees apply for each additional application.

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

		Hrs/week	
		Credits	Lec-Lab
First Semester (Fall)			
10-109-138	Health Club Operations and Management*	3	3-0
10-109-176	Personal Trainer Development**	3	1-3
10-807-160	Anatomy & Physiology for Exercise		
		3	3-0
Total		9	

Second Semester (Spring)			
10-109-173	Group Exercise Leadership **	3	1-4
10-109-195	Recreation Industry Budget & Financial Mgmt*	3	3-0
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, Body Structure and Function.

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 Rec 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 & 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.org. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

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Food Service Production

Program Number: 31-303-2

One-Year Vocational Diploma

Hospitality Program Cluster

Center for 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.

Curriculum

The courses listed below outline the requirements for graduation for students entering this program in the 2011-2012 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.

		Hrs/week	
		Credits	Lec-Lab
First Semester			
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	1	0.5-1
10-316-112	Cuisines of the World	4	0-8
Semester Total		12	
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	2	2-0
10-316-194	Culinary Internship	2	0-8
10-316-189	Breakfast Cookery	1	0-2
Semester Total		14	

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.



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 1 credit

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.

10-316-121 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. Prerequisite: 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 and 10-316-121, 10-316-101, 10-316-115, 10-316-106 and 10-316-108; 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.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. 03/10

Home Baking Certificate

Program Number: 90-314-1

Certificate

Hospitality Program Cluster

Center for 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 certificate offers a hands-on experience in baking fundamentals for the serious home baker. Students will obtain the practical and theoretical knowledge necessary to make an assortment of quality bakery products from scratch. Mastery is not the intention, but rather an introduction into the world of the baker and pastry chef. All classes are held in a commercial bakery lab and students will receive hands-on instruction in equipment use.

After completion of any of the courses, students who decide to pursue a baking career may apply (fall only) for the one year Baking/Pastry Technical Diploma Program. Please note that there is typically a one- to two-year wait for the program.

This certificate does not require an application to the college. Students register for individual courses during the open registration period each semester.

Certificate Application Process

To apply, see: Apply Online (on the Madison College website). [Create an ApplyWeb account](#) and follow the [instructions](#) to complete the [Online Certificate Application](#) before the [application deadline](#). Submit the \$15 non-refundable fee (payable by credit card, debit card or electronic check) with your application. Applicants may submit more than one certificate application per term using the Online Certificate Application; the same fees apply for each additional application.

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.

Required Courses

31-314-383 Cake Decorating with Buttercream 1 credit
Students learn the basics of decorating with buttercream icing. Techniques include borders, script, roses and floral sprays, and figure piping. Students learn how to properly ice and torte a cake. As a final project, all students create a cake using these techniques.

31-314-387 Fondant and Gum Paste 1 credit
Students learn how to cover a cake with fondant, practice borders and draping, make cut-outs and in-lays, create fondant and gum paste floral sprays, mold figures, and decorate a cake using many of these techniques.

Curriculum

Courses	Credits	Hrs/week Lec
Fall		
31-314-383 Cake Decorating with Buttercream.....	1	0-2
31-314-387 Fondant and Gum Paste	1	0-2
31-314-394 Traditional Holiday Baking.....	1	0-2
Semester Total	3	
Spring		
31-314-395 Plated Desserts	1	0-2
31-314-321 Pastries.....	1	0-2
Semester Total	2	
Interim/Summer		
31-314-371 Discriminating Chocolate.....	1	0-2
Semester Total	1	

NOTE: Courses may be taken in any order and may be taken individually.
Courses offered only in the semester shown.

31-314-394 Traditional Holiday Baking 1 credit
Students will learn to make traditional winter holiday products as well as conduct research about those baked items. Much of this historical baking has its roots in Europe, and many of these delectable goodies are still made today. Discover not only the origins, but how to produce items such as classic Buche de Noel, Stollen, spice cookies, how to assemble a mini gingerbread house, and more.

31-314-395 Plated Desserts 1 credit
Students learn basic designs that are elegant ways to add the "wow factor" to simple desserts. Students will create boxes, bowls and baskets that can be filled and eaten, along with the sauces and garnishes that put the desserts over the edge. With these little luxuries you won't have to lick the plate clean, you can just eat it!

31-314-321 Pastries 1 credit
Develop the manual skills and knowledge needed to produce a variety of classic pastry doughs and fillings. Create flakey pie crusts, tender tarts, crisp pâte à choux, and classic puff pastry. Students produce wonderful pastries from these bases such as fruit pies, an assortment of tarts, cream puffs, éclairs, apple turnovers and palmiers.

31-314-371 Discriminating Chocolate 1 credit
Students will gain a basic introduction into the world of chocolate. Learn to distinguish between a 55% and 75% chocolate and what the difference means. An assortment of ten different chocolates will be taste tested and a variety of products will be made with them including chocolate mousse, fudgy brownies and Ganache centers.

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

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Rev. 03/11



Home Decorating Certificate

Program Number: 90-304-1

Applied Arts Program Cluster

Center for 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 Home Decorating Certificate is ideal for students who are interested in further development of their personal interest in the expansive and popular trade of home decorating through formal training. Students will experience decorating fundamentals, gain product knowledge and learn trade communication skills necessary to fulfill home decorating project needs.

The certificate will acquaint students with the various job duties and skills involved with working in a retail setting, starting an independent decorating service or for those who want to enhance their personal decorating skills to achieve satisfying results more effectively. Students will be prepared to conceptualize, produce, coordinate, implement, sell and purchase products required to translate the functions and aesthetic needs of the home environment.

Certificate Application Process

To apply, see: Apply Online (on the Madison College website). [Create an ApplyWeb account](#) and follow the [instructions](#) to complete the [Online Certificate Application](#) before the [application deadline](#). Submit the \$15 non-refundable fee (payable by credit card, debit card or electronic check) with your application. Applicants may submit more than one certificate application per term using the Online Certificate Application; the same fees apply for each additional application.

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.

Required Courses

10-304-170 Introduction to Home Decorating 1 credit
Students in this course will explore the home decorating field including topics such as the difference between an interior designer and a home decorator, the personal qualities and aptitudes of a decorator, job opportunities and trade organizations.

10-304-171 Color Essentials 1 credit
This course covers color theory and the psychology of color, while exploring various color systems, color relationships and schemes, and the many properties of color.

Curriculum

Courses	Credits Lec-Lab	Hrs/week
10-304-170 Introduction to Home Decorating.....	1	1-0
10-304-171 Color Essentials.....	1	1-0
10-304-172 Decorating Styles.....	1	1-0
10-304-173 Elements & Principles of Home Decorating.....	1	1-0
10-304-174 Home Decorating I.....	2	1-2
10-304-175 Home Decorating II.....	2	1-2
10-304-176 Sales for Home Decorating.....	1	1-0
Total	9	

Courses should be taken in the order listed above.

10-304-172 Decorating Styles 1 credit
Students enrolled in Decorating Styles will study decorating styles such as traditional, contemporary, eclectic and others. Additionally, historical influences on various furniture styles as well as home accessorizing to complete the look are covered in this course.

10-304-173 Elements and Principles of Home Decorating 1 credit
This course covers decorating principles, such as spatial relationships, which form the basis of a room or home, and then applies elements such as proportion, texture and other elements of decorating.

10-304-174 Home Decorating I 2 credits
In this course students will learn how to field measure a space and then using basic tools, draw a floor plan for client presentation. Other topics include understanding floor plans and symbols, how to use a drawing scale and presentation methods for the home decorator. Basic furniture planning and layout are also covered and included is an overview of the design process.

10-304-175 Home Decorating II 2 credits
This course covers the basic components of home decoration by discussing the types and quality of furnishings available in the marketplace and also includes an overview of fabrics, lighting fixtures, and the many different materials and finishes available to the home decorator. Additionally students will learn about selecting and purchasing these items and their application in home staging and decoration.

10-304-176 Sales for Home Decorating 1 credit
The focus of this course is on sales techniques and strategies for retail positions, development of customer relationships, and the various parts of the selling cycle. The development of vendor relationships and building a clientele are also discussed along with the various pay structures and discounting methods associated with home decorating businesses.



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.

Hotel and Restaurant Management

Program Number: 10-109-2

Associate in Applied Science Degree

Hospitality Program Cluster

Center for 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.

Curriculum

The courses listed below outline the requirements for graduation for students entering this program in the 2011-2012 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 (myMadisonCollege) account for specific graduation requirements. Program requirements are subject to change.

FIRST YEAR

First Semester		Credits	Hrs/week 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
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SECOND YEAR

First 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
<u>Elective.....</u>		<u>3</u>	<u>E</u>
Semester Total		16	

Second Semester

10-109-120	Tourism Business Planning*	3	3-0
10-109-131	Rooms Division Operations*.....	3	3-0
10-109-134	Hotel/Restaurant Cost Control.....	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
<u>Elective.....</u>		<u>3</u>	<u>E</u>
Semester Total		18	

* Courses offered only in semester shown.

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



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.

10-109-120 Tourism Business Planning 3 credits
Examines the historical development, growth, trends and future directions of profit-oriented commercial tourism. Surveys tourism, recreation and hospitality industries; focuses on starting, marketing and managing a tourism enterprise. Students create commercial tourism business plans.

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.

10-196-193 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 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
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.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. 03/11

Meeting and Event Management

Program Number: 10-109-6

Associate in Applied Science Degree

Hospitality Program Cluster

Center for 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 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.

Curriculum

The courses listed below outline the requirements for graduation for students entering this program in the 2011-2012 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 (myMadisonCollege) account for specific graduation requirements. Program requirements are subject to change.

FIRST YEAR

First Semester		Credits	Hrs/week Lec-Lab
10-103-133	Excel-Beginning	1	0.75-2.25
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

10-109-104	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
10-109-118	Event Technology Delivery	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	Race, Ethics and 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*	2	2-0
10-809-197	Contemporary American Society	3	3-0
10-809-199	Psych of Human Relations	3	3-0
	<u>Elective</u>	3	E
Semester Total		16	

* Courses offered only in semester shown.



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

The design and development of learning experiences have many implications that meeting planners must incorporate. 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. Identifying the stakeholder objectives and learner outcomes determines the subject matter content, appropriate educational approach and meeting setting. Constructive and well-organized program planning is vital to the successful development of education programs and the meeting outcome.

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 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.

10-109-111 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 allows attendees a seamless meeting experience. Co-requisites: 10-103-133 and 10-109-102.

10-109-112 Exposition 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 a request for proposal; 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 and 10-109-108.

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 and 10-109-110.

10-109-114 Meeting and Event Mgmt. 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: Fourth semester program student or consent of instructor.

10-109-116 Fundamentals of Green Meetings 2 credits

Provides solid foundation to execute a socially responsible and environmentally responsible meeting or event. Students will explore core strategies and principles of a green meeting as well as tools and resources available to plan a green meeting or event.

10-109-117 Partnership Development 2 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. Prerequisite: 10-109-102 and 10-109-108.

10-109-118 Event Technology Delivery 3 credits

Meetings, events and tradeshow technology continues to advance with technology products becoming better, cheaper and easier to use. This course will focus on the social media and mobile technology to engage participants and enhance the event experience. We will also examine different mobile applications and delivery technologies to enhance a live, face-to-face meeting experience as well as deliver a virtual meeting. Learn the latest technology trends and collaboration tools to deliver strong ROI for participants and stakeholders alike.

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.

Recommended Electives

10-103-139	Excel Intermediate	1 credit
10-196-188	Project Management	3 credits
10-801-198	Speech (or Interpersonal/Small Group Communications)	3 credits

Career Potential:

- Conference Managers
- Marketing and Special Event Managers
- Convention Sales Managers
- Meetings Coordinators
- Directors of Educational Programs
- Meetings Services Managers
- Project Managers of Meetings and Events
- Senior Event Coordinators
- Program Managers
- Special Event Coordinators
- Conference and Travel Service Managers
- Operations Managers

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

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Rev. 03/11

Recreation Management

Program Number: 10-109-4

Associate in Applied Science Degree

Hospitality Program Cluster

Center for 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 develops competencies in technical, problem-solving, human relations and management skills that are needed for employment.

The Activity/Fitness Emphasis area develops an ability to plan, implement and evaluate recreation programs. Students may serve as center directors; pool directors; hotel, resort or cruise ship social directors; YMCA/YWCA program leaders; and health club staff. Job opportunities exist in recreation and sports centers, aquatic facilities, theme parks, resorts, community centers, senior centers, parks, campgrounds and other recreational venues. Graduates of this program typically earn \$22,000 to \$32,000 per year.

The Facility Operations Emphasis area develops an ability to plan, maintain, develop, operate and protect natural and man-made resource areas, facilities and equipment, and to develop activity programming. Students may serve as park rangers, building and grounds supervisors, park resource assistants, and park recreation specialists. Job opportunities also exist in campgrounds, sports centers, golf courses, ski areas and the Department of Natural Resources. Graduates of this program typically earn \$24,000 to \$40,000 per year.

Recreation Management program credits transfer to George Williams College, Aurora University for the Recreation Management degree.

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. Prerequisite: 10-109-162.

Curriculum

The courses listed below outline the requirements for graduation for students entering this program in the 2011-2012 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	
10-109-103 Leisure and Lifestyle*	3		3-0
10-109-162 Introduction to Recreation	3		3-0
10-104-102 Marketing Principles	3		3-0
10-801-195 Written Communication**	3		3-0
10-804-123 Math w/Business Applications*	3		3-0
Semester Total	15		

Second Semester		Hrs/week	
10-103-133 Excel-Beginning	1		0.75-2.25
10-109-106 Recreation Programming*	3		3-0
10-109-171 Internship Development & Community Partners*	3		2-0
10-109-195 Recreation Industry Budget & Financial Mgmt*	3		3-0
10-801-196 Oral/Interpersonal Communication**	3		3-0
Elective/Emphasis Area Course (see below)	3		
Semester Total	16		

Summer		Hrs/week	
10-109-175 Recreation Internship Practicum*	3		0-8
Total	3		

SECOND YEAR

First Semester		Hrs/week	
10-109-115 Recreation Administration and Management*	3		3-0
10-109-135 Leadership Strategies in Recreation*	3		3-0
10-109-155 Facility Operation and Maintenance*	3		3-0
10-809-197 Contemporary American Society**	3		3-0
10-809-199 Psychology of Human Relations**	3		3-0
Elective/Emphasis Area Course (see below)	3		
Semester Total	18		

Second Semester		Hrs/week	
10-109-160 Inclusive Recreation*	3		3-0
10-109-163 Trends and Topics in Recreation	3		3-0
10-109-196 Principles of Outdoor Pursuits*	3		3-0
10-109-190 Recreation Seminar	1		1-0
10-809-166 Intro to Ethics: Theory & Application**	3		3-0
10-809-195 Economics**	3		3-0
Semester Total	16		

Activity/Fitness Emphasis

10-109-138 Health Club Operations & Mgmt (Fall only)	
10-109-173 Group Exercise Leadership (Spring only)	
10-109-176 Personal Trainer Development (Fall only)	
10-807-160 Anatomy & Physiology for Exercise (offered both semesters)	
20-807-255 Prevention and Care of Athletic Injuries (offered both semesters)	

Facility Operations Emphasis

10-001-140 Introduction to Landscape Design (Fall only)	
10-001-111 Introduction to Horticulture (Spring only)	
10-001-134 Turf and Lawn Management (Fall only)	

Notes:

*Courses offered in semester shown only.

** 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.

10-109-155 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. Course should be taken in the fourth or final semester of study in the program.

10-109-171 Intern Development & Community Partnerships 3 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.

10-109-175 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.

10-109-190 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.

10-807-160 Anatomy & 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.

10-109-138 Health Club Operations & Mgmt 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.

10-109-173 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.

10-109-176 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.

20-807-155 Prevention & 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.

10-001-134 Turf and Lawn Management 3 credits

Examines how to effectively start and maintain professional appearing lawns/turf. Discusses which grasses to use, turf chemicals, equipment, and diagnosing problems. Labs include identification of weeds and several field trips to study various uses of turf.

10-001-140 Introduction to Landscape Design 3 credits

Teaches how to plan and draw a professional landscape design. Focuses on selecting correct plant material, proper placement, and uses of landscape construction elements. Lab provides practical design and drawing experience.

10-001-111 Introduction to Horticulture 3 credits

Introduces plant science and the four branches of horticulture with an emphasis on ornamental horticulture. Covers the structure and function of plants and how they are affected by light, water, temperature, soil, pests, climate and nutrient availability. Labs combine hands-on experience, videos and demonstrations.

Activity/Fitness Career Potential:

- Activity Director
- Fitness/Health Club Specialist
- Personal Trainer
- Sports Coordinator
- Recreation Programmer
- Resort/Cruise Ship Activity Director
- Senior Center Activity Director
- Camp Director

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

- Exercise Physiologist
- Campground Manager
- Recreation Director

Facility Operations Career Potential:

- Arborist
- Campground Assistant Manager
- Golf Course Maintenance
- Golf Course Assistant Superintendent
- Park Ranger
- Sports Facility Operator
- Ski Facility Operator

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

- Conservation Warden
- Golf Course Superintendent
- Park Manager

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 notice.

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Rev 05/11

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 graduation for students entering this program in the 2011-2012 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.

- 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. **Electives0-6 credits**
Students may complete up to six credit hours of electives relevant to career goals. You may utilize your electives to take additional technical courses.
- IV. **Total Program 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.

Student Admissions Process

This program involves a unique admissions process as well. An occupational advisor from business/industry must be involved and also be willing to serve as a program advisory committee member. With the help of an occupational and Madison College advisor, the student must develop a portfolio that identifies the individual's career goals and desired program outcomes. These outcomes serve as the basis for the development of the individualized program plan. The proposed program of study is then reviewed and must be approved by an ad hoc Individualized Technical Studies Degree Committee. These committees will be composed of deans and faculty from related areas as well as the assigned academic advisor for this program.

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.

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

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Cabinetmaking and Millwork

Program Number: 31-409-2

One-Year Technical Diploma

Construction Program Cluster

Center for Construction, Manufacturing, Apprenticeship & Transportation

Courses offered at Madison Campuses

For information call: (608) 246-6102 or
(800) 322-6282 Ext. 6102

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.

Application Process

To apply to the program, students must submit a complete application. A completed application consists of 1.) Application; 2.) Application fee; and 3.) High school transcripts – or - GED/HSED test scores – or – college transcript showing an Associate, Bachelor, or higher degree from an institution other than Madison College.

Unique Requirements for Admission

There are no unique requirements for admission to this 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 (409) must be 2.0 or above.

Curriculum

The courses listed below outline the requirements for graduation for students entering this program in the 2011-2012 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.

		Credits	Hrs/week Lec-Lab
First Semester			
31-409-330	Woodworking 1: Machinery & Methods*	5	4-16
31-409-331	Woodworking 2: Materials & Processes*	5	4-16
31-409-340	Tool & Machine Maintenance*	1	1-3
31-409-341	Wood Finishing 1*	1	1-3
31-409-385	Drawing	2	1-3
31-801-356	Communications 1	1	2-0
31-804-379	Vocational Mathematics 1	1	2-0
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 prerequisites.



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-req: Woodworking 1 (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. *Pre-reqs: Woodworking 1 (31-409-330); Woodworking 2 (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-req: Cab., Mill & Furn 1 (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-req: Wood Finishing 2 (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-req: Woodworking 1 (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-req: Tool & Machine Main. (31-409-340).*

31-409-342 Countertops and Surfaces 2 credits

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

31-409-345 Wood Finishing 2 1 credit

Building upon principles covered in Wood Finishing 1, this course further explores the application of finishes, including wash coats, glazes and other multi-step finishes. In addition, this course will expose the learner to methods for color matching and repairing damaged finishes. *Pre-req: Wood Finishing 1 (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. *Pre-req: Drawing (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.org. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

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Construction and Remodeling

Program Number: 31-410-6

One-Year Technical Diploma

Construction Program Cluster

Center for Construction, Manufacturing, Apprenticeship & Transportation

Program offered at Madison Campuses

For information call: (608) 246-6102 or (800) 322-6282 Ext. 6102

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.

Application Process

To apply to the program, students must submit a complete application. A completed application consists of 1.) Application; 2.) Application fee; and 3.) High school transcripts – or - GED/HSED test scores – or – college transcript showing an Associate, Bachelor, or higher degree from an institution other than Madison College.

Unique Requirements for Admission

There are no unique requirements for admission to this 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 (410) must be 2.0 or above.

Curriculum

The courses listed below outline the requirements for graduation for students entering this program in the 2011-2012 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.

		Credits	Hrs/week Lec-Lab
First Semester			
31-410-301	Introduction to Construction	5	2-8
31-410-302	Plans, Site- and Formwork.....	2	2-2
31-410-337	Workplace Safety*.....	1	4-0
31-410-399	Fundamentals of Construction	3	1-5
31-410-328	Construction & Remodeling Techniques 1	5	2-8
31-804-379	Vocational Math 1.....	1	2-0
Semester Total		17	
Second Semester			
31-410-308	Codes and Regulations.....	2	2-2
31-410-329	Construction & Remodeling Techniques 2	5	2-8
31-410-345	Construction Materials and Estimating	2	2-2
31-410-336	Machine Maintenance*.....	1	0-4
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		15	

*Meets for 9 weeks.

Notes:

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

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



Program Courses

31-403-308 Codes and Regulations 2 credits
 Units of instruction include zoning requirements, residential and commercial building codes, sanitary regulations, permit applications, building permits and inspection procedures. Contract documents and office practice are also discussed.

31-410-301 Introduction to Construction 5 credits
 This course provides instruction in the fundamentals of floor, wall, ceiling and roof framing. A variety of building methods are discussed in the context of current understanding of how buildings work and why they fail. *Co-reqs: Fund. of Const. (31-410-399); and Workplace Safety (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-req: Intro to Const. (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. *Co-reqs: Intro to Const. (31-410-301); and Workplace Safety (31-410-328).*

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. *Pre-req: Intro to Const. (31-410-310). Co-req: Const. & Remodel Tech 1 (31-410-328).*

31-410-336 Machine Maintenance 1 credit
 The fundamentals of tool maintenance and care are emphasized. This includes the identification of maintenance problems and the care of woodworking tools and machines. The study of the principles on which machines operate and preventative maintenance is included. Lab work involves the maintenance of tools and machinery used in the construction classes.

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 is explored. Instruction includes plan reading for the purpose of preparing material takeoffs and calculating costs. Estimating using computer software is introduced. *Pre-req: Intro to Const. (31-410-301).*

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.

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. *Co-reqs: Intro to Const. (31-410-301); and Workplace Safety (31-410-328).*

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.org. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

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Technical Studies–Journeyworker

Program Number: 10-499-5

Associate Degree

Construction Program Cluster

Center for Construction, Manufacturing, Apprenticeship & Transportation

Program offered at Madison Campuses

For information call: (608) 246-6102 or (800) 322-6282 Ext. 6102

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 Construction, Manufacturing, Apprenticeship and Transportation (CMAT) office 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.

Curriculum

The courses listed below outline the requirements for graduation for students entering this program in the 2011-2012 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.

Coursework required for degree	Credits
Occupational Specific Courses ¹	39 credits
<u>General Education²</u>	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.

²Must meet the WTCS Associate of Applied Science Degree requirement for a minimum of 21 credits of General Education distributed across the following categories: Typical course choices are listed under each category. Additional selections can be found on your degree audit or by consulting with your advisor.

Communications (6 credits)

- 10-801-195 Written Communication
- 10-801-196 Oral/Interpersonal Communication
- 10-801-198 Speech

Social Science (3 credits)

- 10-809-197 Contemporary American Society
- 10-809-172 Race, Ethnic and Diversity Studies

Behavioral Science (3 credits)

- 10-809-199 Psychology of Human Relations

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.org. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

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CNC Specialist Certificate

Program Number: 90-420-1

Certificate

Manufacturing Program Cluster

Center for Construction, Manufacturing, Apprenticeship & Transportation (CMAT)

Program offered at Madison Campuses

For information call: (608) 246-6102 or
(800) 322-6282 Ext. 6102

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.

Certificate Application Process

To apply, see: [Apply Online](#) (on the Madison College website). [Create an ApplyWeb account](#) and follow the [instructions](#) to complete the [Online Certificate Application](#) before the [application deadline](#). Submit the \$15 non-refundable fee (payable by credit card, debit card or electronic check) with your application. Applicants may submit more than one certificate application per term using the Online Certificate Application; the same fees apply for each additional application.

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

Courses	Credits	Hrs/week
32-420-346 Intro to CNC – G-code Programming ^o	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 ^o	2	4-0
32-420-389 Applied CNC - Intermediate Operations ^o	2	1-3
32-420-370 Manufacturing w/Solid Modeling - Advanced [♦]	1	2-0
32-420-391 <u>Applied CNC - Advanced Operations[♦]</u>	<u>1</u>	<u>0-2</u>
Total	12	

^o 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.

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. Pre-req: 32-420-337 Manufacturing w/Solid Modeling--2D, 32-420-346 Intro to CNC—G-code Programming, 32-420-389 Applied CNC—Conversational & Setup. Co- reqs: 32-420-391 Applied CNC—Intermediate Operations

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. Pre-reqs- Intro to CNC—G-code Programming (346), Co-Applied CNC—Conversational & Setup

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. Co-req of 32-420-322 or admission to certificate.

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. Pre-reqs: 32-420-346 Intro to CNC—G-code Programming and co-req of 42-420-377 Co-Manufacturing w/Solid Modeling--2D.

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. Pre-reqs: 32-420-337 Manufacturing w/Solid Modeling--2D, 32-420-336 Manufacturing w/Solid Modeling--3D, 32-420-346 Intro to CNC—G-code Programming, 32-420-348 Applied CNC—Conversational & Setup. Coreq: 32-420-391 Applied CNC—Advanced Operations

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. Pre-req: 32-420-337 Manufacturing w/Solid Modeling--2D, 32-420-346 Intro to CNC—G-code Programming, 32-420-348 Applied CNC—Conversational & Setup. Co-req: 32-420-336 Manufacturing w/Solid Modeling--3D.

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, machining centers. Pre-reqs: 32-420-337 Manufacturing w/Solid Modeling--2D, 32-420-336 Manufacturing w/Solid Modeling--3D, 32-420-346 Intro to CNC—G-code Programming, 32-420-348 Applied CNC—Conversational & Setup. Coreq: 32-420-370 Manufacturing w/Solid Modeling—Advanced

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.org. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

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Industrial Automation Post Baccalaureate Certificate

Program Number: 90-462-3

Certificate

Manufacturing Program Cluster

Center for Construction, Manufacturing, Apprenticeship & Transportation

Program offered at Madison Campuses

For information call: (608) 246-6102 or
(800) 322-6282 Ext. 6102

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.

Unique Admissions Requirements

1. A bachelor's degree in Engineering and consent of faculty director;
2. One semester of college level AC/DC;
3. One semester of college level Controls (Motors/Transformer) with laboratory component;
4. Good computer skills (Excel, Networking).

Applicants with missing prerequisites may complete those courses at Madison College.

Certificate Application Process

To apply, see: [Apply Online](#) (on the Madison College website). [Create an ApplyWeb account](#) and follow the [instructions](#) to complete the [Online Certificate Application](#) before the [application deadline](#). Submit the \$15 non-refundable fee (payable by credit card, debit card or electronic check) with your application. Applicants may submit more than one certificate application per term using the Online Certificate Application; the same fees apply for each additional application.

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

Courses	Credits	Hrs/week
32-414-318 Electronic Circuits for Maintenance ^o	3	3-3
32-414-319 Programmable Logic Controllers ^o	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	

^o 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.



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. *Pre-reqs: DC/AC Circuits (23-414-316); Drawing Interp (32-421-392); Safety Compliance (32-462-318); and Code Compliance (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. *Pre-reqs: DC/AC Circuits (23-414-316); Drawing Interp (32-421-392); Safety Compliance (32-462-318); and Code Compliance (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. *Pre-req: Program Logic Controllers 1 (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. *Pre-reqs: DC/AC Circuits (23-414-316); Drawing Interp (32-421-392); Safety Compliance (32-462-318); and Code Compliance (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. *Pre-req: Program Logic Controllers 1 (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.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. 07/11

Industrial Maintenance Technician

Program Number: 32-462-1

Two-Year Technical Diploma

Manufacturing Program Cluster

Center for Construction, Manufacturing, Apprenticeship & Transportation

Program offered at Madison Campuses

For information call: (608) 246-6102 or (800) 322-6282 Ext. 6102

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.

Application Process

To apply to the program, students must submit a complete application. A completed application consists of 1.) Application; 2.) Application fee; and 3.) High school transcripts – or - GED/HSED test scores – or – college transcript showing an Associate, Bachelor, or higher degree from an institution other than Madison College.

Unique Requirements for Admission

There are no unique requirements for admission to this 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 (462) must be 2.0 or above.

Program Courses

32-414-316 DC/AC Circuits for Maintenance 3 credits

Introduces the practical DA/AC concepts including electrical quantities and components and measurement instruments for AC and DC circuits. 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. Requires concurrent enrollment in or completions of: Machine Tool Math 1 (10-804-110) OR College Math (10-804-107) 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. Pre-reqs: DC/AC Circuits (23-414-316); Drawing Interp (32-421-392); Safety Compliance (32-462-301); and Code Compliance (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. Pre-reqs: DC/AC Circuits (32-414-316); Drawing Interp (32-421-392); Safety Compliance (32-462-301); and Code Compliance (32-463-318).

Curriculum

The courses listed below outline the requirements for graduation for students entering this program in the 2011-2012 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		Credits	Hrs/week
First Semester			Lec-Lab
32-414-316	DC/AC Circuits for Maintenance	3	3-3
32-420-330	Metal Processes 1	2	3-1
32-421-392	Drawing Interpretation for Industrial Maintenance	2	2-2
32-462-306	Industrial Fluid Power 1Δ	1	1-1
32-462-341	Industrial Fluid Power 2~	2	2-2
32-462-301	Safety Compliance	1	2-0
10-804-107	College Math	3	4-0
Semester Total		14	

Second Semester		Credits	Hrs/week
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
32-462-316	Industrial Fluid Distribution Systems	2	2-2
32-462-318	Code Compliance	1	2-0
10-103-133	Excel - Beginning	1	1-1
10-104-189	Customer Relations	2	3-0
Semester Total		13	

SECOND YEAR

First Semester		Credits	Hrs/week
32-414-318	Electronic Circuits for Maintenance	3	3-3
32-414-319	Programmable Logic Controllers	3	3-3
32-462-308	Heating and Air Conditioning 1	3	4-2
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		Credits	Hrs/week
32-414-320	Programmable Logic Controllers 2	3	3-3
32-414-321	Interfacing Sensors with Computer Controls	3	3-3
32-462-309	Heating and Air Conditioning 2**	3	4-2
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.

** The following classes may be substituted; total credits must be 66 to graduate.

10-620-170	Introduction to Robotics AND	1	1-1
10-620-168	Robot Programming	2	2-2
10-606-100	Engineering Technology Communications	3	1-4
10-606-130	SolidWorks1	2	1-2
10-606-131	SolidWorks2	2	1-2
10-606-120	2-D CAD	2	1-2
10-482-101	Introduction to Wind Energy Technology	3	4-1

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 Maintenance Technician

Program Courses (continued)

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. Pre-req: Program Logic Controllers 1 (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. Pre-reqs: DC/AC Circuits (23-414-316); Drawing Interp (32-421-392); Safety Compliance (32-462-301); and Code Compliance (32-462-318).

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.

32-421-392 Drawing Interpretation – Industrial Maintenance 2 credits
Studies basic principles of interpreting engineering drawings and schematics. Through interpretation and sketching, students develop a visualization of the part, section or assembly. Uses drawings pertinent to the trade along with examples and discussions of manufacturing procedures.

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. Concurrent enrollment or completion of Industrial Electricity and Controls (32-462-340)

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. 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. NOTE: Industrial Maintenance program students should take Fluid Power 1, and 2, 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*. Pre-req: Heating and Air. 1 (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: DC/AC Circuits (32-414-316); Drawing Interp (32-421-392); Safety Compliance (32-462-301); and Code Compliance (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. Co- or Pre-req of Machine Tool Math 1 (10-804-381) or equivalent. Requires concurrent enrollment in or completions of: Machine Tool Math 1 (10-804-110) OR College Math (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. Pre-req: Program Logic Controllers 1 (32-414-319).

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. Pre-req: Heating and Air. 1 (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. Requires concurrent enrollment in or completions of: Machine Tool Math 1 (10-804-110) OR College Math (10-804-107) OR COMPASS Algebra score of 40 or higher.

32-462-317 Building Service Maintenance 3 credits
Covers safety, schematics, wall framing, electrical services, insulation, drywall applications, painting, floor applications, roofing and siding applications. Includes the study of appropriate applications of material to facilities. Prerequisites: Safety Compliance (32-462-301); and Code Compliance (32-462-318).

32-462-301 Safety Compliance 1 credit
Course focuses on workplace safety as well as OSHA compliance.

32-462-318 Code Compliance 1 credit
Focuses on laws governing workplace safety and environmental concerns such as those covered by EPA, DILHR and the DNR. Reviews general model codes (NEC, NFPA, ANSI, etc) as well as shop safety.

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. Pre-req: Indus. Main. Mech 1 (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: DC/AC Circuits (32-414-316); Drawing Interp (32-421-392); Safety Compliance (32-462-301); and Code Compliance (32-462-318). Note: Industrial Maintenance program students should take this class with Industrial Equipment Mechanisms (32-462-303).

10-620-170 Introduction to Robotics 1 credit
Introductory study of the application, operation, programming and troubleshooting of Industrial Robots

10-620-168 Robot Programming 2 credits
Jog in Joint and Cartesian movement; establish robot axis soft limits; identify axis movements; navigate the teach pendant to set up the robot for desired movement; demonstrate working knowledge of arm speed and inching control; define the Frames of reference used by the coordinate system; create multiple Tool Frames; create a program file; write a functional motion instruction; edit 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. Co-requisite: Intro to Robotics, 10-620-170

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.org. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

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Rev. 07/11

Industrial Mechanic

Program Number: 31-462-2

One-Year Technical Diploma

Manufacturing Program Cluster

Center for Construction, Manufacturing, Apprenticeship & Transportation

Program offered at Madison Campuses

For information call: (608) 246-6102 or
(800) 322-6282 Ext. 6102

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.

Application Process

To apply to the program, students must submit a complete application. A completed application consists of 1.) Application; 2.) Application fee; and 3.) High school transcripts – or - GED/HSED test scores – or – college transcript showing an Associate, Bachelor, or higher degree from an institution other than Madison College.

Unique Requirements for Admission

There are no unique requirements for admission to this 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 (462) must be 2.0 or above.

Program Courses

32-414-316 DC/AC Circuits for Maintenance 3 credits
Introduces the practical DA/AC concepts including electrical quantities and components and measurement instruments for AC and DC circuits. 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. *Co- or Pre-req of Machine Tool Math 1 (31-804-381) or equivalent.*

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.

32-421-392 Drawing Interpretation – Industrial Maintenance 2 credits
Studies basic principles of interpreting engineering drawings and schematics. Through interpretation and sketching, students develop a visualization of the part, section or assembly. Uses drawings pertinent to the trade along with examples and discussions of manufacturing procedures.

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. *Co-req: Industrial Electricity and Controls (31-462-340).*

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. *Co- or Pre-req of Machine Tool Math 1 (10-804-381) or equivalent. Program students should take both classes in the same semester.*

Curriculum

The courses listed below outline the requirements for graduation for students entering this program in the 2011-2012 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		Credits	Hrs/week
First Semester			Lec-Lab
32-414-316	DC/AC Circuits for Maintenance.....	3	3-3
32-420-330	Metal Processes 1.....	2	3-1
32-421-392	Drawing Interpretation for Industrial Maintenance.....	2	2-2
32-462-306	Industrial Fluid Power 1Δ.....	1	1-1
32-462-341	Industrial Fluid Power 2~.....	2	2-2
32-462-301	Safety Compliance.....	1	2-0
10-804-107	College Math.....	3	4-0
Semester Total		14	
Second Semester			
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
32-462-316	Industrial Fluid Distribution Systems.....	2	2-2
32-462-318	Code Compliance.....	1	2-0
10-103-133	Excel - Beginning.....	1	1-1
10-104-189	Customer Relations.....	2	3-0
Semester Total		13	

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 Courses (continued)

- 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. *Co- or Pre-req of Machine Tool Math 1 (10-804-381) or equivalent.*
- 32-462-301 Safety Compliance 1 credit
Course focuses on workplace safety as well as OSHA compliance.
- 32-462-318 Code Compliance 1 credit
Focuses on laws governing workplace safety and environmental concerns such as those covered by EPA, DILHR and the DNR. Reviews general model codes (NEC,NFPA,ANSI, etc) as well as shop safety.
- 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. *Pre-reqs: DC/AC Circuits (32-414-316); Drawing Interp (32-421-392); Safety Compliance (32-462-318); and Code Compliance (32-463-318).* *Note: Industrial Maintenance program students should take this class with Industrial Equipment Mechanisms (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.org. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

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Rev. 07/11

Industrial Mechanic-HVAC

Program Number: 31-462-3

One-Year Technical Diploma

Manufacturing Program Cluster

Center for Construction, Manufacturing, Apprenticeship & Transportation

Program offered at Madison Campuses

For information call: (608) 246-6102 or
(800) 322-6282 Ext. 6102

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.

Application Process

To apply to the program, students must submit a complete application. A completed application consists of 1.) Application; 2.) Application fee; and 3.) High school transcripts – or - GED/HSED test scores – or – college transcript showing an Associate, Bachelor, or higher degree from an institution other than Madison College.

Unique Requirements for Admission

There are no unique requirements for admission to this 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 (462) must be 2.0 or above.

Program Courses

32-414-316 DC/AC Circuits for Maintenance 3 credits
Introduces the practical DA/AC concepts including electrical quantities and components and measurement instruments for AC and DC circuits. 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. Requires concurrent enrollment in or completions of: Machine Tool Math 1 (10-804-110) OR College Math (10-804-107) OR COMPASS Algebra score of 40 or higher.

32-421-392 Drawing Interpretation – Industrial Maintenance 2 credits
Studies basic principles of interpreting engineering drawings and schematics. Through interpretation and sketching, students develop a visualization of the part, section or assembly. Uses drawings pertinent to the trade along with examples and discussions of manufacturing procedures.

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.

32-420-330 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.

Curriculum

The courses listed below outline the requirements for graduation for students entering this program in the 2011-2012 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		Credits	Hrs/week
First Semester			Lec-Lab
32-414-316	DC/AC Circuits for Maintenance	3	3-3
32-420-330	Metal Processes 1	2	3-1
32-421-392	Drawing Interpretation for Industrial Maintenance	2	2-2
32-462-301	Safety Compliance	1	2-0
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			
32-462-340	Industrial Electricity and Controls	4	4-4
32-462-318	Code Compliance	1	2-0
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	1-1
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 Courses (continued)

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. *Pre-req: Heating and Air. 1 (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: Safety Compliance (32-462-301); and Code Compliance (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. *Pre-req: Heating and Air. 1 (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. Requires concurrent enrollment in or completions of: Machine Tool Math 1 (10-804-110) OR College Math (10-804-107) OR COMPASS Algebra score of 40 or higher.

32-462-301 Safety Compliance 1 credit
Course focuses on workplace safety as well as OSHA compliance.

32-462-318 Code Compliance 1 credit
Focuses on laws governing workplace safety and environmental concerns such as those covered by EPA, DILHR and the DNR. Reviews general model codes (NEC,NFPA,ANSI, etc) as well as shop safety.

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: DC/AC Circuits (32-414-316); Drawing Interp (32-421-392); Safety Compliance (32-462-301); and Code Compliance (32-462-318). Note: Industrial Maintenance program students should take this class with Industrial Equipment Mechanisms (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.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.

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Introduction to Wind Energy Technology

Program Number: 90-462-4

Certificate

Manufacturing Program Cluster

Center for Construction, Manufacturing, Apprenticeship & Transportation

Program offered at Madison and Watertown Campuses

For information call: (920) 206-8022

About the Certificate

The Introduction to Wind Energy Technology certificate provides students with the basic knowledge and skills needed to explore career opportunities in the growing wind energy industry. Employment opportunities are increasing for skills technicians who are able to operate and repair wind energy systems. Employers seek individuals who are knowledgeable in safety, climbing, electrical, and mechanical skills.

Although the Introduction to Wind Energy Technology certificate provides basic installation, troubleshooting and repair skills individuals interested in pursuing advanced career opportunities in renewable energy are strongly encouraged to continue their education in the Industrial Maintenance Technician program, as the electro-mechanical skills taught in this program are transferrable to the wind industry.

Individuals interested in becoming a wind turbine technician should have good vision and hearing, manual dexterity, strong communication skills, and be able to stand for long periods of time. Additionally, they should be able to lift up to 50 pounds, work outside in various climate conditions, and be able to walk and climb towers of 270 feet.

Certificate Application Process

To apply, see: [Apply Online](#) (on the Madison College website). [Create an ApplyWeb account](#) and follow the [instructions](#) to complete the [Online Certificate Application](#) before the [application deadline](#). Submit the \$15 non-refundable fee (payable by credit card, debit card or electronic check) with your application. Applicants may submit more than one certificate application per term using the Online Certificate Application; the same fees apply for each additional application.

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

Courses	Credits	Lec-Lab
10-482-101 Introduction to Wind Energy Technology	3	5-0
32-414-316 DC/AC Circuits for Maintenance ^o	3	3-3
32-462-301 Safety Compliance ^o	1	2-0
32-462-318 Code Compliance [♦]	1	4-0
32-462-303 Industrial Equipment Mechanisms [♦]	1	1-1
32-462-340 Industrial Electricity and Controls [♦]	4	4-4
32-462-306 Industrial Fluid Power 1 ^o	1	1-1
10-482-102 Wind Systems Technician 1 [♦]	3	5-0
32-421-392 Drawing Interpretation for Industrial Maintenance	2	2-2
10-804-107 College Math OR	3	4-0
31-804-381 Machine Tool Math	(2)	4-0
Total	21	

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

Courses

32-414-316 DC/AC Circuits for Maintenance 3 credits
Introduces the practical DA/AC concepts including electrical quantities and components and measurement instruments for AC and DC circuits. 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. Requires concurrent enrollment in or completions of: Machine Tool Math 1 (10-804-110) OR College Math (10-804-107) OR COMPASS Algebra score of 40 or higher

32-462-301 Safety Compliance 1 credit
Course focuses on workplace safety as well as OSHA compliance.

32-462-318 Code Compliance 1 credit
Focuses on laws governing workplace safety and environmental concerns such as those covered by EPA, DILHR and the DNR. Reviews general model codes (NEC NFPA, ANSI, etc) as well as shop safety.

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).

32-462-306 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

32-462-340 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: 32-414-316 and second semester standing or instructor consent. Prerequisites: DC/AC Circuits (32-414-316); Drawing Interp (32-421-392); Safety Compliance (32-462-301); and Code Compliance (32-462-318). Note: Industrial Maintenance program students should take this class with Industrial Equipment Mechanisms (32-462-303).

10-482-101 Introduction 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 3 credits

This course 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 maintenance operations. Pre-req. of Introduction to Wind Energy Technology (10-482-101)

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: matcmadison.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. 07/11

Machine Tool Operations Certificate

Program Number: 90-420-2

Certificate

Manufacturing Program Cluster

Center for Construction, Manufacturing, Apprenticeship & Transportation (CMAT)

Program offered at Madison Campuses

For information call: (608) 246-6102 or
(800) 322-6282 Ext. 6102

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; and 2.) Developing skills to design, build and inspect a machine part.

Certificate Application Process

To apply, see: [Apply Online](#) (on the Madison College website). [Create an ApplyWeb account](#) and follow the [instructions](#) to complete the [Online Certificate Application](#) before the [application deadline](#). Submit the \$15 non-refundable fee (payable by credit card, debit card or electronic check) with your application. Applicants may submit more than one certificate application per term using the Online Certificate Application; the same fees apply for each additional application.

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

Courses	Credits	Hrs/week Lec-Lab
32-420-345 Drawing Interpretation 1 ^o	2	4-0
32-420-346 Intro to CNC – G-code Programming ^o	2	3-1
32-420-351 Elements of Basic Metrology ^o	2	2-2
32-420-322 Machine Tool 1* ^o	4	4-12
32-420-322 Machine Tool 2* ^o	4	4-12
31-801-356 Communications 1 ^o	1	2-0
31-804-381 Machine Tool Mathematics 1 ^o	2	4-0
32-420-304 Intermediate Metrology Applications [♦]	1	1-1
32-420-324 Machine Tool 3* [♦]	4	4-12
32-420-325 Machine Tool 4* [♦]	4	4-12
32-420-388 Tool and Fixture Design [♦]	1	2-0
32-420-390 Fundamentals of Metallurgy [♦]	2	4-0
32-420-348 Applied CNC- Conversational & Setup [♦]	2	1-3
32-420-337 Manufacturing w/Solid Modeling- 2D [♦]	2	4-0
31-804-382 Machine Tool Mathematics 2 [♦]	1	2-0
Total	34	

*Meets for 9 weeks.

^o Fall course offering

[♦] Spring course offering

Note:

Courses are listed in suggested sequence. Enrollment for courses adhere to course pre-requisites 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.



Program Courses

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. Pre-reqs: 32-420-35.

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-reqs: Machine Tool 2 (32-420-323), Elementary Metrology (32-420-351), and Drawing Interpretation (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-reqs: Machine Tool 1 (32-420-322), Elementary Metrology (32-420-351), and Drawing Interpretation (32-420-345).

32-420-324 Machine Tool 3 4 credits 4

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. Pre-reqs: Machine Tool 2 (32-420-323); Elem. Basic Metrol. (32-420-351); and Drawing Interp. (32-420-345). Co-reqs: Machine Tool 4 (32-420-325); Fund. of Metall. (32-420-390); and Intermediate Metrology (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-req: Machine Tool 3 (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. Pre-reqs- Intro to CNC—G-code Programming (346), Co-Applied CNC—Conversational & Setup

32-420-345 Drawing Interpretation 1 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 trade with examples.

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. Co-req: 32-420-322

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. Pre-reqs- Intro to CNC—G-code Programming (346), Co-Manufacturing w/Solid Modeling—2D

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 Pre-req: Drawing Interpretation (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
- 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.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. 07/11

Machine Tooling Technics

Program Number: 32-420-5

Two-Year Technical Diploma

Manufacturing Program Cluster

Center for Construction, Manufacturing, Apprenticeship & Transportation

Program offered at Madison Campuses

For information call: (608) 243-4169 or (800) 322-6282 Ext. 4169

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.

Application Process

To apply to the program, students must submit a complete application. A completed application consists of 1.) Application; 2.) Application fee; and 3.) High school transcripts – or - GED/HSED test scores – or – college transcript showing an Associate, Bachelor, or higher degree from an institution other than Madison College.

Unique Requirements for Admission

There are no unique requirements for admission to this 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 (420) must be 2.0 or above.

Program Courses

Note: Due to space constraints, pre-requisite information has not been included in with the course descriptions. Please check our website for course pre-requisite and co-requisite information for each course.

32-419-300 Hydraulics and Mechanics 2 credits

This course covers fundamentals of fluid and mechanical power components and their principle function, terminology and use. The basic power train systems are studied and include hydraulic components, gears, belt and chain drives, shafting, bearings, lubrication systems and speed and limit controls found on common industrial equipment.

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.

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.

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.

Curriculum

The courses listed below outline the requirements for graduation for students entering this program in the 2011-2012 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		Credits	Hrs/week Lec-Lab
First Semester			
32-420-322	Machine Tool 1*	4	4-12
32-420-323	Machine Tool 2*	4	4-12
32-420-345	Drawing Interpretation 1	2	4-0
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

32-419-300	Hydraulics and Mechanics	2	2-2
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.

Program Courses (continued)

<p>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.</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>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 Pre-req-Manufacturing w/Solid Modeling--2D, Intro to CNC—G-code Programming, Applied CNC—Conversational & Setup. Co- reqs-Applied CNC—Intermediate Operations</p> <p>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.</p> <p>32-420-345 Drawing Interpretation 1 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 trade with examples.</p>	<p>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.</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>32-420-313 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.</p>
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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.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. 07/11

Welding

Program Number: 31-442-1

One-Year Technical Diploma

Manufacturing Program Cluster

Center for Construction, Manufacturing, Apprenticeship & Transportation

Program offered at Madison Campuses

For information call: (608) 246-6102 or (800) 322-6282 Ext. 6102

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.

Application Process

To apply to the program, students must submit a complete application. A completed application consists of 1.) Application; 2.) Application fee; and 3.) High school transcripts – or - GED/HSED test scores – or – college transcript showing an Associate, Bachelor, or higher degree from an institution other than Madison College.

Unique Requirements for Admission

There are no unique requirements for admission to this 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 (442) must be 2.0 or above.

Curriculum

The courses listed below outline the requirements for graduation for students entering this program in the 2011-2012 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.

		Hrs/week	
		Credits	Lec-Lab
First Semester			
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
31-442-393	Drawing Interpretation	2	4-0
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 prerequisites.



Program Courses

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. Corequisite: 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. *Pre-req: Layout and Fab. 1 (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 arc 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. *Pre-req: Arc Welding (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. *Pre-req: Arc Welding (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. *Pre-req: Arc Welding (31-442-315); Basic Gas Metal Arc (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. *Pre-req: Basic Gas Metal Arc (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. *Pre-req: Gas Tungsten Arc 2 (31-442-328).*

31-442-390 Fundamentals of Metallurgy 2 credits

Introduction to metallurgy with emphasis on applications, selection, identification methods and alloy influences. Properties are studied utilizing testing, micro-structure interpretation and heat treatment processes. Tool steels, weld heat effects, failure analysis as well as machinability variations in cast iron, alloy steels and non-ferrous materials are covered in detail.

31-442-393 Drawing Interpretation 2 credits

The basic principles of engineering welding drawings are interpreted through explanation, sketching and orthographic projections. The student develops and learns the procedures of interpreting industrial welding drawings, and develops a visualization of parts and fabrication assemblies. AWS welding joints, symbols and their applications on fabricated models and company prints are also covered.

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.org. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

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Rev. 07/11

Agricultural Equipment Technology

Program Number: 10-070-1

Associate in Applied Science Degree

Transportation Program Cluster

Center for Construction, Manufacturing, Apprenticeship & Transportation

Program offered at Madison Campuses

For information call: (608) 246-6102 or
(800) 322-6282 Ext. 6102

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).

Application Process

To apply to the program, students must submit a complete application. A completed application consists of 1.) Application; 2.) Application fee; and 3.) High school transcripts – or - GED/HSED test scores – or – college transcript showing an Associate, Bachelor, or higher degree from an institution other than Madison College.

Unique Requirements for Admission:

- 1.) Satisfactory score on the COMPASS or ASSET; 2.) Signed sponsorship papers from a John Deere dealership.

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 (070) must be 2.0 or above.

Curriculum

The courses listed below outline the requirements for graduation for students entering this program in the 2011-2012 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

First Semester	Credits	Hrs/week 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
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* Meets for 9 weeks.

Note:

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

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



Program Courses

10-070-175 Power Transmission 4 credits
 The course covers the operation, power flow, diagnosis and servicing of collar shift, synchronized, power shift and IVT transmissions. The class also discusses the operation and service of wet and dry clutches differentials, planetary drive axles, P.T.O. drives and mechanical front wheel drives.

10-070-176 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. *Pre-req: Electrical Systems (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, 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. *Pre-req: Implements 1, 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. *Pre-req: Electrical Systems 1, 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. *Pre-req: Hydraulics 1, 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. *Pre-req: Occupational Experience 1, 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. *Pre-req: Occupational Experience 2, 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 installations. 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.org. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

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Rev. 07/11

Auto Collision Repair and Refinish Technician

Program Number: 31-405-1

One-Year Technical Diploma

Transportation Program Cluster

Center for Construction, Transportation, Apprenticeship & Transportation

Program offered at Madison Campuses

For information call: (608) 246-6102 or
(800) 322-6282 Ext. 6102

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.

Application Process

To apply to the program, students must submit a complete application. A completed application consists of (1) Application; (2) Application fee; and (3) High school transcripts – or - GED/HSED test scores – or – college transcript showing an Associate, Bachelor, or higher degree from an institution other than Madison College.

Unique Requirements for Admission

There are no unique requirements for admission to this 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 (405) must be 2.0 or above.

Curriculum

The courses listed below outline the requirements for graduation for students entering this program in the 2011-2012 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

First Semester		Credits	Hrs/week Lec-Lab
32-405-301	Basic Sheet Metal Repair & Welding Fund	5	0-10
32-405-302	Refinishing 1	5	0-10
32-405-341	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.



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-reqs: First semester core courses must be taken together: Basic Sheet Metal (32-405-301); Refinishing 1 (32-405-302); and Collision Theory 1 (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-reqs: First semester core courses must be taken together: Basic Sheet Metal (32-405-301); Refinishing 1 (32-405-302); and Collision Theory 1 (32-405-361).

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

Further development of straightening skills and sheet metal alignment is achieved by performing these activities on automobiles. Such operations as straightening damages sheet metal on fixed parts and removable panels are performed. Instruction on the replacement of fixed glass such as windshields, rear window, and side glass is covered using industry standards. Further instruction includes the components and procedures involved in the removal and installation of movable glass. Students must be admitted to Auto Collision program. Pre-reqs: First semester core courses. Co-reqs: 2nd 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. Pre-reqs: First semester core courses. Co-reqs: 2nd 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-reqs: First semester core courses. Co-reqs: 2nd 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. Pre-reqs: First semester core courses. Co-reqs: 2nd 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-reqs: First semester core courses must be taken together: Basic Sheet Metal (32-405-301); Refinishing 1 (32-405-302); and Collision Theory 1 (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-reqs: First semester core courses. Co-reqs: 2nd 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.org. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

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Rev. 07/11

Auto Collision Repair and Refinishing Technician

Program Number: 32-405-1

Two-Year Technical Diploma

Transportation Program Cluster

Center for Construction, Manufacturing, Apprenticeship & Transportation

Program offered at Madison Campuses

For information call: (608) 246-6102 or
(800) 322-6282 Ext. 6102

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.

Application Process

To apply to the program, students must submit a complete application. A completed application consists of (1) Application; (2) Application fee; and (3) High school transcripts – or - GED/HSED test scores – or – college transcript showing an Associate, Bachelor, or higher degree from an institution other than Madison College.

Unique Requirements for Admission

There are no unique requirements for admission to this 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 (405) must be 2.0 or above.

Program Courses

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

Course material covers the introduction in the use of an oxyacetylene welding/cutting outfit as related to collision repairs. A heavy emphasis is placed on the mig welding process, types of welds and techniques use of hammer and dolly, pry tools, stud guns, air and electrical tools, hydraulic-porto-power jacks and other straightening tools, used in the processes of metal finishing and plastic filling. Co-reqs: First semester core courses must be taken together: Basic Sheet Metal (32-405-301); Refinishing 1 (32-405-302); and Collision Theory 1 (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-reqs: First semester core courses must be taken together: Basic Sheet Metal (32-405-301); Refinishing 1 (32-405-302); and Collision Theory 1 (32-405-361).

Curriculum

The courses listed below outline the requirements for graduation for students entering this program in the 2011-2012 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

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

Second Semester

32-405-303 Non-Structural Panel Repair & Glass Servicing	5	0-10
32-405-304 Refinishing 2/Trim & Hardware	5	0-10
32-405-340 Collision Electrical Fundamentals	2	2-2
32-405-363 Collision Repair/Refinishing Theory 2	3	5-0
31-804-379 Vocational Mathematics 1	1	2-0
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
32-405-365 Collision Repair and Refinishing Theory 3	3	5-0
31-806-363 Science 1	2	2-2
Semester Total	15	

Second Semester

32-405-307 Advanced Collision Structural Repair	5	0-10
32-405-308 Collision Plastics/Composites & Adv Refinish Apps	5	0-10
32-405-334 Collision Damage Analysis and Report Writing	3	5-0
31-405-374 Collision Repair Occupational Orientation	2	4-0
Semester Total	15	

Notes:

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

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



Program courses (continued)

32-405-303 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-reqs: First semester core courses. Co-reqs: 2nd 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. Pre-reqs: First semester core courses. Co-reqs: 2nd 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. Pre-reqs: All first year courses. Co-reqs: 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). Pre-reqs: All first year courses. Co-reqs: 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. Pre-reqs: 1st-3rd semester core courses. Co-reqs: Fourth semester core must be taken together (32-405-307; 32-405-308; 32-405-334; and 32-405-374).

32-405-308 Collision Plastics/Composites & Adv Refinishing Applications 5 credits
Identification of automotive plastics, repair decisions, using adhesives and welding to repair plastics. Refinishing techniques include refinishing plastic, multi-stage finishing, and advances blending techniques and custom painting options. Pre-reqs: 1st-3rd semester core courses. Co-reqs: Fourth semester core must be taken together (32-405-307; 32-405-308; 32-405-334; and 32-405-374).

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. Pre-reqs: 1st-3rd semester core courses. Co-reqs: Fourth semester core must be taken together (32-405-307; 32-405-308; 32-405-334; and 32-405-374).

32-405-340 Collision Electrical Fundamentals 2 credits
This course is an introduction to automotive electrical systems, including basic electricity, trouble shooting and repair of common electrical circuits, wiring diagrams, soldering, power accessories and restraint systems. Standards for safety when working with electrical systems is emphasized. Pre-reqs: First semester core courses. Co-reqs: 2nd 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. Pre-reqs: First semester core courses. Co-reqs: 2nd 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-reqs: First semester core courses must be taken together: Basic Sheet Metal (32-405-301); Refinishing 1 (32-405-302); and Collision Theory 1 (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 Pre-reqs: First semester core courses. Co-reqs: 2nd 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. Pre-reqs: All first year courses. Co-reqs: Third semester core must be taken together (32-405-305; 32-405-306; and 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. Pre-reqs: 1st-3rd semester core courses. Co-reqs: 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.org. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

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Rev. 07/11

Automotive Custom Painting Certificate

Program Number: 90-405-1

Certificate

Transportation Program Cluster

Center for Construction, Manufacturing, Apprenticeship & Transportation (CMAT)

Program offered at Madison Campuses

For information call: (608) 246-6102 or
(800) 322-6282 Ext. 6102

About the Certificate

Madison Area Technical College is now offering an Automotive Custom Painting certificate. This certificate is perfect for the student who has completed Madison Area Technical College's one-year Auto Collision Repair and Refinish program or has two or more years of industry refinishing experience.

A full-time student could complete this certificate in one semester.

Certificate Application Process

To apply, see: Apply Online (on the Madison College website). [Create an ApplyWeb account](#) and follow the [instructions](#) to complete the [Online Certificate Application](#) before the [application deadline](#). Submit the \$15 non-refundable fee (payable by credit card, debit card or electronic check) with your application. Applicants may submit more than one certificate application per term using the Online Certificate Application; the same fees apply for each additional application.

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

Courses	Credits
47-405-450 Introduction to Airbrushing♦	40
47-405-451 Color Mapping, Graphics & Stencils♦	40
47-405-452 Advanced "Noise"/Special Effects♦	20
47-405-453 Multi-Color Blending/Fading♦	20
47-405-454 Real Fire Effects♦	40
47-405-455 <u>Hand Striping</u> ♦	40
Total	2

♦Spring course offering

Note:

Courses are listed in suggested sequence. Enrollment for courses adhere to course pre-requisites and co-requisites as indicated at the end of each course description.



Courses

47-405-450 Introduction to Airbrushing .40 credits

This course is a prerequisite for all other custom paint course offerings. It is set up to take a student who has little or no airbrush experience and instruct the student on how to disassemble, clean and set-up his or her own brush. 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. Instruction on types and methods of stencil use, from hand taping to compute cut materials, as well as quick overviews of commonly found "hand held" barriers and masks that provide some simple background and fill techniques. Prerequisite: one year of Madison Area Technical College's Auto Collision Repair and Refinish Technician program OR two years collision industry refinishing experience OR Introduction to Basic Painting, 47-405-449.

47-405-451 Color Mapping, Graphics & Stencils .40 credits

Learn the importance of "mapping out" or planning a project as the first step in deciding color usage and determining if the "base color" is painted first or last. The technique of "stacking" or use of multiple piece stencils to create popular graphics is covered. Students learn how shadows in proper places give an illusion of depth. Prerequisite: one year of Madison Area Technical College's Auto Collision Repair and Refinish Technician program OR two years collision industry refinishing experience OR Introduction to Airbrushing, 47-405-450.

47-405-452 Advanced "Noise"/ Special Effects .20 credits

Learn how to use hand-held stencils and barriers to achieve creative or popular backgrounds and fill techniques. Illustrates techniques in aging or patina with air brush. Prerequisite: one year of Madison Area Technical College's Auto Collision Repair and Refinish Technician program OR two years collision industry refinishing experience OR Introduction to Airbrushing, 47-405-450.

47-405-453 Multi-Color Blending/Fading .20 credits

Learn how professionals make seamless smooth color transition free from mottling and/or "dry spray." Explore color variation using known theory and methods to build eye-pleasing color schemes. Also learn the benefits and drawbacks of popular paint effects such as transparents, metallics and pearls. Prerequisite: one year of Madison Area Technical College's Auto Collision Repair and Refinish Technician program OR two years collision industry refinishing experience OR Introduction to Airbrushing, 47-405-450.

47-405-454 Real Fire Effects .40 credits

Uses computer or hand-cut stencils to create popular graphics representations of real fire and freehand stencil/barrier use to illustrate fire. Prerequisite: one year of Madison Area Technical College's Auto Collision Repair and Refinish Technician program OR two years collision industry refinishing experience OR Introduction to Airbrushing, 47-405-450.

47-405-455 Hand Striping .40 credits

Demonstrates the proper set-up for paint mixture and brush shaping which is vital to the art of "fine lining" or outlining graphics or lettering. Showing the tools and techniques of the "brush" or hand striper will demonstrate the steps necessary to achieve nostalgic as well as modern use for this age-old skill yielding quality projects. A brief overview of "gold leafing" and other effects is presented. Prerequisite: one year of Madison Area Technical College's Auto Collision Repair and Refinish Technician program OR two years collision industry refinishing experience OR Introduction to Airbrushing, 47-405-450.

Career Potential:

- Automotive Custom Painter

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

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Rev. 07/11

Automotive Technician

Program Number: 32-404-2

Two-Year Technical Diploma

Transportation Program Cluster

Center for Construction, Manufacturing, Apprenticeship & Transportation

Program offered at Madison Campuses

For information call: (608) 246-6102 or (800) 322-6282 Ext. 6102

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.

Application Process

To apply to the program, students must submit a complete application. A completed application consists of (1) Application; (2) Application fee; and (3) High school transcripts – or - GED/HSED test scores – or – college transcript showing an Associate, Bachelor, or higher degree from an institution other than Madison College.

Unique Requirements for Admission

2.0 High school GPA, or college coursework with 2.0 GPA. Students without this requirement will be admitted into the 3-year program, and must complete general/support courses the first year with a 2.0 GPA or higher before they can take occupational core courses.

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 graduation for students entering this program in the 2011-2012 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
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
32-420-330 Metal Processes 1	2	2	2
20-890-200 College Success*	1	1	0
Semester Total	16		

Second Semester		Hrs/week	
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
32-420-331 Metals Processes 2	2	2	2
31-804-379 Vocational Mathematics 1	1	2	0
Semester Total	15		

SECOND YEAR

First Semester		Hrs/week	
32-404-355 Automatic Transmissions*	5	5	13
32-404-356 Manual Drivetrain and Axles*	5	5	13
31-806-363 Science 1	2	2	2
10-104-189 Customer Relations	2	2	0
Semester Total	14		

Second Semester		Hrs/week	
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.



Program Courses

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- req: Auto Electricity (32-404-319); and Service Repair (32-404-340).

32-404-318 Heating and Air Conditioning 2 credits

Covers the basic principles of heating and air conditioning. Detailed studies of heating systems, air conditioning systems, including vacuum and electrical controls, and automatic temperature control systems are carried out in the classroom and the lab. Diagnosis and typical service jobs are done in the lab using up-to-date tools and diagnostic equipment. Students will receive State of Wisconsin AG 136.09 certification upon completion of this course. Pre- or Co- req: Auto Electricity (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-req or Co-req: Auto Electricity (32-404-319); and Service Repair (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. Pre-reqs: Auto Electricity (32-404-319); Service Repair (32-404-340); and Powertrain (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- req: Auto Electricity (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- req: Auto Electricity (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- req: Auto Electricity (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. Pre- reqs: Auto Electricity (32-404-319); and Service Repair (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. Pre - reqs: Auto Electricity (32-404-319); and Service Repair (32-404-340).

32-404-357 Driveability 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. Pre-reqs: Auto Electricity (32-404-319); Service Repair (32-404-340); and Powertrain (32-404-335).

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: Metals 1 (32-420-330).

AG 136/EPA Certification

For more information on this four-hour course, call (608) 246-6831 or 243-4269.

Career Potential:

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

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

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

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

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Rev. 07/11

Automotive Technology

Program Number: 10-602-3

Associate in Applied Science Degree

Transportation Program Cluster

Center for Construction, Manufacturing, Apprenticeship & Transportation

Program offered at Madison Campuses

For information call: (608) 246-6102 or (800) 322-6282 Ext. 6102

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.

Application Process

To apply to the program, students must submit a complete application. A completed application consists of (1) Application; (2) Application fee; and (3) High school transcripts – or - GED/HSED test scores – or – college transcript showing an Associate, Bachelor, or higher degree from an institution other than Madison College.

Unique Requirements for Admission

Applicants must have a 2.0 High school GPA, or college coursework with 2.0 GPA. Students without this requirement may either (1) Apply to the Auto Technician program and be admitted into the 3-year plan; or (2) Take 6 or more college credits and earn a 2.0 or higher GPA.

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 (602) must be 2.0 or above.

Curriculum

The courses listed below outline the requirements for graduation for students entering this program in the 2011-2012 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 (myMadisonCollege) account for specific graduation requirements. Program requirements are subject to change.

FIRST YEAR

First Semester		Credits	Hrs/week 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

10-420-126	Manufacturing Materials	2	1-2
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	4	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		16	

Second Semester

10-602-150	Internal Combustion Engines*	4	4-11
10-602-152	Driveability 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		18	

*Meets for 9 weeks.

Notes:

- COMPASS test required upon program acceptance.
- College transfer courses available in lieu of existing courses (200 series) for individuals who desire continuing education. Always check receiving institution prior to enrollment.
- 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.

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



Program Courses

10-602-102 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-req: Auto Electricity (10-602-119).

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. Pre-reqs: Auto Electricity (10-602-119); Service Repair (10-602-102); and Powertrain (10-602-166).

10-602-152 Driveability 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. Pre-reqs: Auto Electricity (10-602-119); Service Repair (10-602-102); and Powertrain (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-reqs: Auto Electricity (10-602-119); and Service Repair (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-reqs: Auto Electricity (10-602-119); and Service Repair (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-reqs: Auto Electricity (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-req: Auto Electricity (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. Pre-reqs: Service Repair (10-602-102); and Tech. Brakes Sys. (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-req: Auto Electricity (10-602-119); and Service Repair (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-reqs: Auto Electricity (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-reqs: Auto Electricity (10-602-119); and Service Repair (10-602-102).

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.

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.org. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

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Rev. 10/10

Diesel Equipment Technology

Program Number: 10-412-1

Associate in Applied Science Degree

Transportation Program Cluster

Center for Construction, Manufacturing, Apprenticeship & Transportation

Program offered at Madison Campuses

For information call: (608) 246-6102 or
(800) 322-6282 Ext. 6102

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.

Application Process

To apply to the program, students must submit a complete application. A completed application consists of 1.) Application; 2.) Application fee; and 3.) High school transcripts – or - GED/HSED test scores – or – college transcript showing an Associate, Bachelor, or higher degree from an institution other than Madison College.

Unique Requirements for Admission

There are no unique requirements for admission to this program. Students will be required to have an employer sponsor for a work experience during the summer between the 1st and 2nd year.

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 graduation for students entering this program in the 2011-2012 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 student center account for specific graduation requirements. Program requirements are subject to change.

FIRST YEAR		Credits	Hrs/week
First Semester			Lec-Lab
20-890-200	College 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		Credits	Hrs/week
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

Interim (register as part of spring/second semester)		Credits	Hrs/week
10-412-190	Diesel Equipment Lab Experience 1 •	1	1-35
Semester Total		18	

Summer Semester		Credits	Hrs/week
10-412-195	Occupational Experience (432 hrs.)	2	0-48
Term Total		2	

SECOND YEAR		Credits	Hrs/week
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		Credits	Hrs/week
10-412-176	Diesel Fuel Systems*	4	5-10
10-412-177	Diesel Engine Diagnostics*	2	3-5
10-412-138	Diesel Shop Management	2	2-0
10-412-178	Diagnostic Strategies	2	1-2
10-412-188	Electronic Control Systems	2	3-4
10-809-195	Economics	3	3-0
10-809-199	Psychology of Human Relations	3	3-0
Semester Total		18	

- * Meets for 9 weeks.
- Meets for 1 week (36 hours).

Notes:

- Prerequisites can be waived with program director approval.
- Advanced standing may be granted by the program director and Center dean.
- Certain associate degree or higher post-secondary courses specific to the curriculum may substitute for courses upon approval of program director and Center dean.
- Entrance at nine-week intervals with advanced standing and approval of Center dean.

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



Program Courses

10-412-112 Mobile Hydraulics 3 credits
Prepares the student with the knowledge and skills needed to adjust, diagnose, service and repair mobile hydraulic systems found on trucks and construction equipment.

10-412-125 Cab Climate Control/Refrigeration Systems 3 credits
Lectures/labs provide skills to diagnose, maintain and service cab climate control and transport refrigeration equipment found on truck trailers and off-road equipment. Pre or co-req: Mobile Hydraulics (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. Co-req: Fundamental Diesel Electrical/Electronic Systems (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. Pre-req: All first year Diesel (412) courses.

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. Coreq: Fund. Diesel Elec. (10-412-144). Students must receive a C or higher in Fund. Diesel Electrical (10-412-144) to continue into this course.

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. Pre-req: All first year Diesel (412) courses.

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. Pre-req: All first year Diesel (412) courses. Co-req: Electronic Control Systems (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. Pre-req: All first year Diesel (412) courses, including a grade of C or higher in Electrical Systems Diag (10-412-145).

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. Pre-req: All first year Diesel core (412) courses. Co-req: Diesel Engine Repair (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. Pre-req: All first year Diesel core (412) courses. Co-req: Diesel Engine Technology (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. Pre-req: All first year Diesel (412) courses. Co-req: Diesel Engine Diagnostics (10-412-177). Students must complete Diesel Engine Diagnostics in the 1st 9 weeks to continue into this course.

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. Pre-req: 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. Pre-req: 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.org. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

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Diesel and Heavy Equipment Technician

Two-Year Technical Diploma

Program Number: 32-412-1

Transportation Program Cluster

Center for Construction, Manufacturing, Apprenticeship & Transportation

Program offered at Madison Campuses

For information call: (608) 243-4169 or
(800) 322-6282 Ext. 4169

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.

Application Process

To apply to the program, students must submit a complete application. A completed application consists of (1) Application; (2) Application fee; and (3) High school transcripts – or - GED/HSED test scores – or – college transcript showing an Associate, Bachelor, or higher degree from an institution other than Madison College.

Unique Requirements for Admission

There are no unique requirements for admission to this 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 (412) must be 2.0 or above.

Curriculum

The courses listed below outline the requirements for graduation for students entering this program in the 2011-2012 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	
20-890-200 College 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	1-1/3	
10-103-137 Word-Beginning	1	1-1/3	
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 prerequisites.



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. Pre or co-req: Mobile Hydraulics (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 Pre or co-req: Mobile Hydraulics (10-412-112).

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. Pre-req: All first year Diesel (412) courses.

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. Pre-req: Enrollment permitted only with adequate COMPASS(or equivalent assessment test) scores in reading, writing, math and mechanical reasoning.

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. Pre-req: Enrollment permitted only with adequate COMPASS test scores in reading, writing, math and mechanical reasoning.

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. Coreq: Fund. Diesel Elec. (10-412-144). Students must receive a C or higher in Fund. Diesel Electrical (10-412-144) to continue into this course.

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. Pre-req: All first year Diesel (412) courses.

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. Pre-req: All first year Diesel (412) courses. Co-req: Electronic Control Systems (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. Pre-req: All first year Diesel (412) courses, including a grade of C or higher in Electrical Systems Diag (10-412-145).

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. Pre-req: All first year Diesel core (412) courses. Co-req: Diesel Engine Repair (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. Pre-req: All first year Diesel core (412) courses. Co-req: Diesel Engine Technology (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. Pre-req: All first year Diesel (412) courses. Co-req: Diesel Engine Diagnostics (10-412-177). Students must complete Diesel Engine Diagnostics in the 1st 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.org. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

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Motorcycle, Marine and Outdoor Power Products Technician

Program Number: 31-461-2

One-Year Technical Diploma

Transportation Program Cluster

Center for Construction, Manufacturing, Apprenticeship & Transportation

Program offered at Madison Campuses

For information call: (608) 246-6102 or
(800) 322-6282 Ext. 6102

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.

Application Process

To apply to the program, students must submit a complete application. A completed application consists of (1) Application; (2) Application fee; and (3) High school transcripts – or - GED/HSED test scores – or – college transcript showing an Associate, Bachelor, or higher degree from an institution other than Madison College.

Unique Requirements for Admission

There are no unique requirements for admission to this 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 (461) must be 2.0 or above.

Curriculum

The courses listed below outline the requirements for graduation for students entering this program in the 2011-2012 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 (myMadisonCollege) account for specific graduation requirements. Program requirements are subject to change.

		Hrs/week	
		Credits	Lec-Lab
First Semester			
32-420-330	Metal Processes 1	2	3-1
31-461-324	Basic Two- and Four-Cycle Engines*	5	8-12
31-461-325	Engine Rebuilding*	5	8-12
31-461-328	Small Engine Lab 1	1	0-4
10-104-189	Customer Relations	2	2-0
Semester Total		15	
Second Semester			
32-420-331	Metal Processes 2	2	3-1
31-461-326	Electrical and Hydraulic Systems*	5	8-12
31-461-327	Power Transmissions and MMOPP*	5	8-12
31-461-329	Small Engine Lab 2	1	0-4
10-102-134	Business Organization & Mgmt	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.



Program 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-reqs: 1st semester core must be taken together: 2 & 4 Cycle Engines (31-461-324), Engine Rebuilding (31-461-325) and Small Engine Lab (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, chain saws, sharpening and balancing of rotating elements are included. Co-reqs: 1st semester core must be taken together: 2 & 4 Cycle Engines (31-461-324), Engine Rebuilding (31-461-325) and Small Engine Lab (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. Pre-reqs: 1st semester core. Co-reqs: 2nd semester core must be taken together: Elect. & Hydraul. Sys. (31-461-326); Power Trans (31-461-327); and Small Eng. Lab 2 (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. Pre-reqs: 1st semester core. Co-reqs: 2nd semester core must be taken together: Elect. & Hydraul. Sys. (31-461-326); Power Trans (31-461-327); and Small Eng. Lab 2 (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-reqs: 1st semester core must be taken together: 2 & 4 Cycle Engines (31-461-324), Engine Rebuilding (31-461-325) and Small Engine Lab 1 (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. Pre-reqs: 1st semester core. Co-reqs: 2nd semester core must be taken together: Elect. & Hydraul. Sys. (31-461-326); Power Trans (31-461-327); and Small Eng. Lab 2 (31-461-329).

Career Potential:

- **Outdoor Power Equipment Technicians**

Work on marine, outboard, motorcycle and snowmobile power equipment; lawn and garden equipment; construction equipment; chain saws; golf course equipment; and other small engines.

- **Service Writer**
- **Parts Manager**
- **Factory Service Representative**
- **Power Equipment Salesperson**

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

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Rev. 10/10

Associate Degree Nursing

Program Number: 10-543-1

Associate in Applied Science Degree

Nursing Program Cluster

Center of Health & Safety Education

Program offered at Madison, Reedsburg and Watertown Campuses

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

About the Program

Accredited by the National League for Nursing Accrediting Commission <http://NLNAC.org>, 3343 Peachtree Road NE Suite 500, Atlanta, GA 30326, (404) 975-5000 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.

Application Process

To apply to the program, students must submit an application & required documents. A completed packet consists of the completed application form, \$30 application fee (if not previously paid), \$5 online processing fee per application, high school transcripts or GED/HSED test scores, college transcript(s) and COMPASS/ASSET test scores.

Unique Requirements for Admission – TIER 1

- 1) High school graduation or HSED or GED; 2) Satisfactory score on the ACT, SAT, COMPASS, ASSET or equivalent assessment test;
- 3) Chemistry: Two semesters of high school chemistry with a lab component with a grade of C or better each semester; or a four-credit college-level chemistry course with a lab component (10-806-134, General Chemistry or a higher level course), with a grade of C or better;
- 4) Algebra competency demonstrated within the last two years through either satisfactory competency test scores or a college algebra course, with a grade of C or better.

NOTE: The chemistry and algebra requirement (see number 3 and 4 above) must be completed at the time of application. This means that you must have already completed this requirement at the time you apply.

Petition Process – TIER 2

After students have been determined qualified for the program, they pay their \$50 deposit to secure their spot and be issued a Priority date/Sequencing number. This is used only for sequencing if there are more Petitioners than spaces available for any given semester. To be eligible to petition, students must have satisfactorily completed all the listed general education requirements and have met the benchmark scores for the TEAS exam. Please read all the detail requirements listed on the Petition Process tab on the Associate Degree Nursing web pages.

Licensed Practical Nurses may be granted advanced standing in nursing courses on the basis of prior education and experience or examination. Licensed Practical Nurses must apply to the Nursing Completion LPN to A DN program, meet all the stated admission requirements, have all the required general education support classes completed with grades of C or above before they may petition for third semester entry.

Curriculum

The courses listed below outline the requirements for graduation for students entering this program in the 2011-2012 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.

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

FIRST YEAR

		Credits	Hrs/week Lec-Lab
First Semester			
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

		Credits	Hrs/week Lec-Lab
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 prior to petitioning for entry into core Nursing courses. 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

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; 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 MATC.

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: Intro. to Clinical Management 2 credits
This clinical experience applies nursing concepts and therapeutic nursing interventions to groups of clients. It also provides an introduction to leadership, management and team building.

10-543-109 Nursing Complex Health Alterations 1 3 credits
Complex Health Alterations 1 prepares the learner to expand knowledge from previous courses in caring for clients with alterations in musculoskeletal, cardiovascular, respiratory, endocrine and hematologic systems as well as clients with fluid/ electrolyte and acid-base imbalance, and alterations in comfort.

10-543-110 Nursing Mental Health Community Concepts 2 credits
This course will cover topics related to the delivery of community and mental health care. Specific health needs of individuals, families, and groups will be addressed. Attention will be given to diverse and at-risk populations. Mental health concepts will concentrate on adaptive/maladaptive behaviors and specific mental health disorders. Community resources will be examined in relation to specific types of support offered to racial, ethnic, economically diverse individuals and groups.

10-543-111 Nursing Intermediate Clinical Practice 3 credits
This intermediate level clinical course develops the RN role when working with clients with complex health care needs. A focus of the course is developing skills needed for managing multiple clients and priorities. Using the nursing process, students will gain experience in adapting nursing practice to meet the needs of clients with diverse needs and backgrounds.

10-543-112 Nursing Advanced Skills 1 credit
This course focuses on the development of advanced clinical skills. Content includes advanced IV skills, blood product administration, chest tube systems, basic EKG interpretation and nasogastric/feeding tube insertion.

10-543-113 Nursing Complex Health Alterations 2 3 credits
This course prepares the learner to expand knowledge and skills from previous courses in caring for clients with alterations in the immune, neuro-sensory, musculoskeletal, gastrointestinal, hepatobiliary, renal/urinary and the reproductive systems. The learner will also focus on management of care for clients with high risk perinatal conditions, high risk newborns and the ill child. Synthesis and application of previously learned concepts will be evident in the management of clients with critical/life threatening situations.

10-543-114 Nursing Management Concepts 2 credits
This advanced clinical course covers nursing management and professional issues related to the role of the RN emphasis is 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.org. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

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Rev: 07/11

Nursing Assistant

Program Number: 30-543-1

Less-Than-One-Semester Programs

Nursing Program Cluster

Center of Health & Safety Education

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

For information call: (608) 246-6065 or (608) 258-2479
(800) 322-6282 ext. 6065 or 2479

About the Nursing Assistant Program

The Nursing Assistant program is a 3 credit, 120 hour program. It is offered fall, summer & 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 & skills) for the Wisconsin Nurse Aide Registry. Certification is required for employment in nursing homes, hospitals, home health agencies, hospices and home for the developmentally disabled.

Unique Requirements for Admission

COMPASS Reading test scores – Students must recently have satisfactorily complete the Reading portion of the COMPASS (80 or higher) or ASSET (40 or higher) or ACT (18 or higher) testing. If you have previously achieved an Associated Degree or higher with a college-level English class with a grade of C or better OR you have satisfactory UW placement testing your Reading test will be waived.

[Health History form](#) - Applicants will be required to complete a health history form including a tuberculosis skin test and/or chest x-ray, if indicated, and a blood specimen to determine immunity from measles, mumps and chicken pox. Evidence of current immunization for diphtheria and tetanus is also required.

[Caregiver Background Check](#) – All students must have a Caregiver Background Check and a Caregiver License Check completed in order to participate in the clinical portion of this course. Some criminal convictions will prevent participation in the clinical portion of this course. Refer to Caregiver Background Check (CBC) on the Madison College Website. Contact the Nursing Assistant Program Coordinator, 258-2479, if you have concerns regarding your Criminal History.

Functional Abilities – All students are required to meet the requirements listed in the [FUNCTIONAL ABILITIES](#) and complete all skills listed on the [MASTER SKILLS CHECKLIST](#) regardless of disability, health status or religious beliefs. All students must complete the Health History form and should be reexamined at the student's expense should health status change during the course. These forms can be found at these links or by going to the program's web page.

Nursing Assistant Curriculum

The courses listed below outline the requirements for graduation for students entering this program in the 2011-2012 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, Second or Summer Semester	Credits	Hrs/week	
		Lec-Lab	
30-543-300 Nursing Assistant*	3	10-5	
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			
10-524-124 Restorative and Rehabilitation Therapy Aide	2	4-5	
10-501-120 Diagnostic Aide	2	4-4	

Program Courses

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:

- CNA
- Nursing Assistant
- Nurse Aide
- Home Health Aide
- Psychiatric Aide

[Employment and Salary Information \(Graduate Employment Report\) PDF](#)

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

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Rev. 04/11

Nursing Completion LPN to ADN

Program Number: 10-543-1

Associate in Applied Science Degree

Nursing Program Cluster

Center of Health & Safety 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 National League for Nursing Accrediting Commission (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, understanding that errors may have serious consequences; and an ability to work and communicate with others, to be precise and exact work under pressure, and react quickly in an emergency.

Application Process

To apply to the program, students must submit an application & required documents. A complete application consists of the completed application form, \$30 application fee (if not previously paid), \$5 online processing fee per application, high school transcripts or GED/HSED test scores, college transcript(s) and COMPASS/ASSET test scores.

Unique Requirements for Admission

- 1) High school graduation, HSED or GED or higher documented degree
- 2) Satisfactory score on the ACT, SAT, COMPASS, ASSET or equivalent assessment test;
- 3) District #4 residency;
- 4) Submit copy of current LPN licensure;
- 5) Verification of work experience as an LPN: It is strongly recommended that the LPN work in healthcare facility for at least 6 months prior to admission to the Nursing Completion program. A signed Employment Verification statement from your employer is required.
- 6) Course requirements of: **Chemistry:** Two semesters of high school chemistry with a lab component with a C or better each semester; or a four-credit college-level chemistry course with a lab component (10-806-134, General Chemistry or a higher level course), with a grade of C or better;
- 7) **Algebra competency (within the last two years)** demonstrated through either satisfactory competency test scores or a college algebra course, with a grade of C or better; and all general education "Pre-Nursing" courses listed to the right;)

NOTE: All of the above requirements must be satisfactorily completed or in progress with the last class(es) at the time you submit your application materials.

Curriculum

The courses listed below outline the requirements for graduation for students entering this program in the 2011-2012 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.

Pre-Nursing Courses:

Credits Lec-Lab

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

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 Comp 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 (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	4	.....	3-2
20-809-231	Intro to Psychology	3	.....	3-0
20-809-233	Developmental Psychology	3	.....	3-0
	Total	35		

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		19 & LPN Licensure

Associate Degree Nursing 2nd year requirements:

Third Semester

10-543-164	Orientation to Associate Degree Nursing	1	.....	1-0
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.



Program Requirements

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

Online Courses

All nursing theory courses are available online. Students who are enrolled in program courses may register for online courses. All program policies apply to online and face-to-face courses. Due to graduation verification and licensing paperwork, all fourth semester classes MUST be taken at Madison College.

Program Courses

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

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

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

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

10-543-111 Nursing Intermediate Clinical Practice 3 credits

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

10-543-112 Nursing Advanced Skills 1 credit

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

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

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

10-543-114 Nursing Management Concepts 2 credits

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

10-543-115 Nursing Advanced Clinical Practice 3 credits

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

10-543-116 Nursing Clinical Transition 2 credits

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

10-543-164 Orientation to Associate Degree Nursing 1 credit

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: malcmadison.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. 09/11

Practical Nursing

One-Year Technical Diploma

Nursing Program Cluster

Center of Health & Safety Education

Program offered at the following campuses:

- Madison (both semesters),
- Fort Atkinson (fall semester) and
- Reedsburg (spring semester).

For information call: (608) 246-6065 or (608) 246- 6484
(800) 322-6282 Ext. 6065 OR 6484

About the Program

The Practical Nursing program enables the student to acquire the knowledge, understanding, skills and attitudes necessary to become a qualified, competent practical nurse. The practical nurse, under the general or direct supervision of a registered nurse, physician, podiatrist, dentist or optometrist, is prepared to assume responsibility for nursing in those situations relatively free of complexity and to assist in more complex nursing care situations.

The program includes lectures, demonstrations and supervised practice at a variety of sites including hospitals, nursing homes, home health and family practice or community care settings. The program is approved by the Wisconsin State Board of Nursing. The graduate is eligible to write the national licensing exam (NCLEX-PN). Successful completion of the examination, as defined by the Board of Nursing, leads to licensure in the State of Wisconsin.

Application Process

To apply to the program, students must submit an application. A completed packet consists of the completed application form, \$30 application fee (if not previously paid), \$5.00 fee per online application, high school transcripts or GED/HSED test scores, college transcript(s) and COMPASS/ASSET test scores.

Unique Requirements for Admission

Must be satisfactorily completed or attending the courses when the application is submitted:

1. High school graduation, HSED or GED;
2. Assessment Testing (One of the following):

Test	Minimum Test Scores
COMPASS	Reading 80, Writing 70, Pre-Algebra 55, E-Write 6
ASSET	Reading 40, Writing 40, Numerical 40

3. Math competency demonstrated (within the last two years) through either satisfactory competency testing scores OR one semester of college-level math with a grade of C or better.
4. Reading competency demonstrated through satisfactory competency testing scores OR one semester of college-level Writing/English with a grade of C or better.
5. Writing competency demonstrated through satisfactory competency testing scores OR one semester of college-level Reading/English with a grade of C or better.
6. Science: Two semesters of high school science, with a C or better each semester OR one semester of college-level science course (Body Structure & Function 31-543-335 or 10-501-153 or higher level course) with a grade of C or better.



Program Number: 31-543-1

Curriculum

The courses listed below outline the requirements for graduation for students entering this program in the 2011-2012 academic year. Requirements for graduation may vary depending on the semester in which a student is admitted to the 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.

Pre-Core Nursing Courses: Credits Hrs/week
Lec-Lab

The following courses must be completed prior to acceptance in core nursing courses. Along with these listed courses, satisfactory completion of TEAS is required.

Satisfactory completion of all these requirements is due by March 1 for fall semester acceptance and September 1 for Spring semester acceptance. More information can be found on the web site.

30-543-300	Nursing Assistant *	3	3-0
31-543-356	Growth and Development * ***	2	4-0
31-543-335	Body Structure and Function * *** OR	2	4-0
10-501-153	Body Structure and Function * ***	(3)	(3-0)
31-543-320	Nursing Success	1	2-0
20-801-201	English 1* OR	3	3-0
10-801-195	Written Communication*	(3)	(3-0)
20-810-201	Fundamentals of Speech* OR	3	3-0
10-801-196	Oral/Interpersonal Communication*	(3)	(3-0)
Semester Total		14	19

Core Nursing Courses:

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 Total		9	20

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
Semester Total		10	24

*Courses must be taken prior to acceptance off the waiting list into the core program courses. Core Nursing courses may not be completed prior to acceptance into the program.

Note: A copy of [Functional Abilities](#) for nursing programs is available on the Admission Tab off the Program's web page.

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.

Additional program requirements upon acceptance: [Caregiver Background Check](#) (CBC), physical exam and completed [Health History Form](#), copy of your current "Health Care Professional" CPR certification, [Functional Abilities](#) reviewed for nursing programs, and completion of all required courses with a grade of C or better. All Health Occupations students must have a completed Health History Form by the 2nd week of the first semester of core classes. Under no circumstances are students assigned to the clinical areas without these requirements met.

*** Licensed Practical Nurses seeking to complete their Associate Degree to become an RN: Please obtain the [Nursing Completion LPN to ADN](#) information for details. Practical Nursing students planning to continue to the Associate Degree Nursing (ADN) program can make the following adjustments to the required curriculum: Intro to Psychology & Developmental Psychology instead of Growth & Development; and Anatomy & Physiology I & II instead of Body Structure & Function (10-501-153 can be used as an elective of the ADN program).

Program Courses

Pre-Core Nursing Courses

31-543-320 Nursing Success 1 credits

This course is designed to prepare students for the fundamental nonacademic skills necessary to be successful within the educational setting of the nursing programs and the skills necessary to perform as a nurse upon successful completion of a nursing program. These skills include, but are not limited to: organization, teamwork, ability to follow verbal and written instruction, stress and time management and test-taking skills.

31-543-335 Body Structure and Function 2 credits

Provides insight into basic human body structure and functions, including fundamentals needed to understand and evaluate health practices related to each system and the body as a whole. Prerequisite: one year each of high school math and science with a grade of C or better in each course, each semester.

31-543-356 Growth and Development 2 credits

Studies growth and development from conception through the older adult, based on Erickson's conceptualization of the developmental process through the entire life cycle. Implications for nursing practice in caring for middle and older age individuals in a variety of settings are explored. Prerequisites: one year each of high school math and science with a grade of C or better in each course, each semester.

Core Nursing Courses

31-543-301 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.

31-543-302 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.

31-543-303 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.

31-543-304 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.

31-543-305 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.

31-543-306 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.

31-543-307 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.

31-543-308 Nursing: Introduction to Clinical Care 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.

Career Potential:

- **Licensed Practical Nurse (LPN)**

After passing the State Board Exam (NCLEX-PN), graduates may work as licensed practical nurses, a variety of health care settings including home health agencies, hospitals and clinics, the Armed Services, extended care facilities and selected industrial and business settings.

Graduates can also qualify for advanced academic standing in the Associate Degree Nursing Program.

With additional education LPNs can go on to become registered nurses (RNs), and then find employment as:

- **Registered Nurses**

More detailed and updated information on this program may be available at:

matcmadison.edu. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

Madison Area Technical College provides equal opportunity in education and employment

Clinical Ophthalmic Assistant

Program Number: 90-516-1

Certificate

Health-Related Professions Program Cluster

Center for Health & Safety 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.
- Affect 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 a eight week summer clinical session.

MATC is seeking accreditation for this certificate from the Joint Commission on Allied Health Personnel in Ophthalmology.

Unique Requirements for Admission

1) High school graduate, HSED or GED; 2) satisfactory scores on the COMPASS or equivalent assessment test.

Program Requirements

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

Curriculum

FIRST YEAR

First Semester		Credits	Hrs/week Lec-Lab
31-516-325	Optical Dispensing 1	3	3-2
31-516-301	Ophthalmic Pre-Testing	3	3-3
31-516-305	Basic Optical Concepts	3	3-2
31-516-315	Ocular Anatomy	2	3-1
31-543-335	Body Structure** OR	2	3-0
10-501-153	Body Structure**	(3)	(3-0)
31-516-339	Human Relations OR	1	2-0
10-809-199	Psychology of Human Relations**	(3)	(3-0)
Semester Total		14	

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 & 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.

** Class may be taken prior to acceptance into program.

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



Program Courses

31-516-301 Ophthalmic Pre-Testing 3 credits
 Covers the history of optometry, relationships between optometry, ophthalmology and opticianry and various paraprofessional careers in vision care. The course involves the study of and practical experience in patient pre-testing such as case history, visual acuity, color vision, pupil evaluation and depth perception as well as the specialized testing procedures such as keratometry and blood pressure.

31-516-305 Basic Optical Concepts 3 credits
 Covers the properties of light and the function of a lens in vision correction. Included is a review of basic math needed in vision care and the physiological aspects of vision. This course begins the study of the neutralization and verification of spectacle lens powers, to include spherical, cylindrical and prism lenses.

31-516-315 Ocular Anatomy 2 credits
 Familiarizes the optometric technician with the form and function of the human eye. The foundation of the lecture material is the anatomy of the eye, but we will discuss the physiology and function of the eye as much as possible. We will also discuss the actions and uses of diagnostic pharmaceutical agents, as their function is based on interference with normal ocular physiology. This course also covers optometric terminology as well as prescription translation.

31-516-325 Optical Dispensing 1 3 credits
 Covers frame definition, parts and types of frames, measurement of frames and lenses, alignment of frames, inserting and removing lenses, introduction to dispensing of eyewear and frame repairs. This is a hybrid course that meets weekly for 2 hours classroom, 2 hours lab and 1 hour online.

31-516-326 Optical Dispensing 2 2 credits
 This course assists the student in developing a mastery of the alignment and adjustment of eyewear. It also covers the various lens materials, multifocal styles and lens tints. Prerequisites: 31-516-325 and 31-516-305.

31-516-327 Clinical Ophthalmic Procedures 2 credits
 This course prepares the technician to assist the doctor in advanced office techniques in the area of ultrasound, in-office surgical procedures, case history and scribing. Students will also study various systemic diseases and their affect on the eye. The performance of various skills is emphasized in the laboratory sessions. Elective Course for the Optometric Technician Program, required for the Clinical Ophthalmic Assistant Certificate. Prerequisites: 31-516-315, 31-516-301, 31-516-305 and 31-543-355 or 10-501-153.

31-516-330 Contact Lenses 3 credits
 Gives the student in-depth exposure to the technical aspects of clinical contact lens practice. Lecture and laboratory experiences emphasize lens verification, patient education and evaluation. Prerequisites: 31-516-301, 31-516-305 and 31-516-315.

31-516-335 Ophthalmic Specialty Testing 3 credits
 Provides the student experience and knowledge in areas of special vision care procedures: subjective refraction, visual field testing, slit lamp, Goldmann and non-contact tonometry, basic concepts of orthoptics and the treatment of eye diseases including instillation of eye medications and eye patching. Patient instruction and assistance are emphasized in laboratory sessions. Prerequisites: 31-516-301, 31-516-305 and 31-516-315.

31-516-339 Human Relations 1 credit
 Introduces students to their personal and vocational responsibilities as an optometric technician. The development of communication skills one needs as an optometric technician are introduced. The ethical and legal responsibilities of an optometric technician are defined. Time management techniques will be presented. Basic concepts of stress and how it affects behavior, and stress management are discussed. The course also covers writing a job application letter and resume as well as interview techniques. This is a hybrid course that meets weekly for 1 hour classroom and 1 hour online.

31-516-340 Patient Relations and Practice Management 2 credits
 Provides a study of front office management techniques including telephone and appointment book management, filing, recall systems, bookkeeping and insurance claim processing. This is a hybrid course that meets weekly for 2 hours classroom and 1 hour online.

31-516-345 Preclinical 2 credits
 Prepares students for clinical affiliation by having them complete vision screenings on patients from the college. Class discussions are held analyzing the results of the screening as well as the students' performance. Prerequisites: 31-516-301, 31-516-305 and enrollment in 31-516-335.

31-516-350 Clinical Experience 3 credits
 Students participate 40 hours per week for six weeks of assigned clinical experience in an optometric or clinic setting. The student is expected to achieve specific educational objectives determined for this experience. Prerequisite: satisfactory completion of all first-semester courses plus enrollment in second-semester courses.

31-516-351 Clinical Experience II 3 credits
 Students participate 34 hours per week for eight weeks of assigned clinical experience in an ophthalmic clinic setting. The student is expected to achieve specific educational objectives determined for this experience. Prerequisite: satisfactory completion of all courses (first and second semester).

Required Related Course
 31-543-335 Body Structure & Function 2 credits
 10-501-153 Body structure & Function 3 credits

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 optometrist, ophthalmologist or clinic, 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 chairside techniques of fitting contact lenses.

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

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 Rev. 03/11*

Dental Assistant

Program Number: 30-508-2

Less-Than-One-Year Diploma

Health-Related Professions Program Cluster

Center of Health & Safety 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.

Unique Requirements for Admission

- 1) High School graduation, HSED or GED;
- 2) One unit of science and math, with a grade of C or better;
- 3) Satisfactory score on COMPASS, ASSET or equivalent assessment test.
- 4) Complete the online learning readiness self-assessment.

Program Requirements

- 1) Physical exam and completed Health History Form on file prior to beginning program.
- 2) Hands-on CPR certification before beginning Dental Assistant program (two-person CPR, Infant through Adult with AED).

Curriculum

The courses listed below outline the requirements for graduation for students entering this program in the 2011-2012 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 (myMadison College) account for specific graduation requirements. Program 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 & 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.



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. 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.

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. Prerequisites: completion of, or concurrent enrollment in Dental Health Safety, 10-508-101.

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. Prerequisites: completion of, or concurrent enrollment in, Dental Health Safety, 10-508-101.

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. Prerequisites: 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, Dental Health Safety, 10-508-101, and Dental and General Anatomy, 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, Dental Health Safety, 10-508-101, Dental and General Anatomy; 10-508-304, Dental Chairside; 31-508-302, Dental Materials; 10-508-103 Dental Radiography and Dental Assistant Professionalism, 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 Assistants**
Work directly with the dentist in the treatment area.
- **Laboratory Assistants**
Perform laboratory functions as directed by the dentist.
- **Receptionists/Office Assistants**
Responsible for the operation of the business office.
- **Claims Approvers**
Work for an insurance company approving dental insurance claims.

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

- **Dental Treatment Coordinator**
Are responsible for the operation of the practice.
- **Dental Laboratory Technicians**
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.org. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

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Dental Hygienist

Program Number: 10-508-1

Associate in Applied Science Degree

Health-Related Professions Program Cluster

Center of Health & Safety 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.

Application Process

To apply for the program, students must submit an application, online or paper. A \$30 application fee (if not previously paid) plus \$5 online fee, high school transcripts, GED/HSED scores, or college transcript(s) documenting graduation admission requirements along with COMPASS/ASSET test scores.

Unique Requirements for Admission

- 1) high school graduation or GED or higher documented degree;
- 2) successful completion of two semester at the high school level or one semester at the college level with a grade of C or better in the following areas: a) geometry; b) chemistry; and c) biology
- 3) algebra competency demonstrated within the last two years through either satisfactory competency test scores or a college algebra course, with a grade of C or better; and
- 4) satisfactory scores on the COMPASS, ASSET, ACT or SAT.

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 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 & 10-508-103

Curriculum

The courses listed below outline the requirements for graduation for students entering this program in the 2011-2012 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

	Credits	Hrs/week Lec-Lab
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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	4	3-2
20-806-274	Microbiology*	(5)	(3-2)
Semester Total		13	

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
	<u>Elective*</u>	<u>2</u>	<u>E</u>
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	<u>Introduction to Psychology*</u>	<u>3</u>	<u>3-0</u>
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	<u>Contemporary American Society*</u>	<u>(3)</u>	<u>(3-0)</u>
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	<u>Psychology of Personal Adjustment* OR</u>	<u>(3)</u>	<u>(3-0)</u>
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.



Program Courses (continued)

10-508-102 Oral Anatomy, Embryology & 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 & 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. Pre-requisite: Acceptance into program. Co-requisite: 10-508-101 & 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. Pre-requisite: Acceptance into program. Co-requisites: 10-508-102 and 10-508-103. Pre/Co-requisites: 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. Pre-requisites: 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 & 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. Pre-requisites: 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. Pre-requisites: 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-requisites: All listed Pre-Dental, first & second semester courses. Co-requisites: 10-508-112, 10-508-114, 10-508-115 and 10-508-116.

10-508-112 Dental Hygiene Process 3 5 credits
This clinical course builds on and expands the technical/clinical skills student dental hygienists developed in Dental Hygiene Process II. In consultation with the instructor, students apply independent problem-solving skills in the course of providing comprehensive care for calculus case type 1, 2, and 3 patients and perio case type 0, I, II, and III patients. This also introduces root detoxification using hand and ultrasonic instruments, a selection of dental implant prophylaxis treatment options, and administration of chemotherapeutic agents. Students also adapt care plans in order to accommodate patients with special needs. Pre-requisites: All listed Pre-Dental, first & 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-requisites: 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-requisites: All listed Pre-Dental, first & 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. Pre-requisites: All listed Pre-Dental, first & 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. Pre-requisites: 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.org. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

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Rev. 05/11

Dietary Manager

Program Number: 90-313-1

Certificate

Health-Related Professions Program Cluster

Center of Health & Safety Education

Program offered at Madison Campuses

For information call: (608) 246-6065, (608) 246-6313 or
(800) 322-6282 Ext. 6065 or 6313

About the Program

The Dietary Manager Certificate prepares students to function as Food Service Managers. The program emphasizes the relationship of foods and nutrition to health. Successful students are able to communicate information, follow procedures, adhere to standards, organize work schedules, be wise decision makers, are emotionally stable and are able to handle difficult situations. They should have an interest and should be willing to learn and keep abreast of the current literature and technology in food, nutrition and health.

Students enrolled in the program have an opportunity to apply their knowledge in practical experiences for a total of 150 hours of clinical experience. They are affiliated in health care facilities such as hospitals, long term care facilities, schools and community settings such as day care facilities and correctional institutions.

Unique Requirements for Registration

1) High school graduation or HSED or GED; 2) two years of food service employment or post-high school training in food service; 3) Current employment in food service position; 4) Intermediate computer skills and access to a computer with internet, email & printing capabilities .

To succeed in the program, a student must receive a grade of C or higher in all courses.

Graduates of the certificate may apply for the national level registration to become a Certified Dietary Manager (CDM).

Program Courses

10-313-168 Nutrition for Dietetics 3 credits
A study of nutrients, nutrient metabolism and nutrition resource materials prepares the student to analyze the nutritional needs of individuals and groups. Environmental factors affecting food availability, safety and selection are also discussed. Co requisites: 10-313-178 and 10-313-182.

10-313-178 Food Service Management 1 3 credits
Basic principles of food preparation and service are reviewed and applied in a quantity food production unit. Adjunct operational principles of menu planning, procurement, quality assurance, training, sanitation and safety are applied. Prerequisites or concurrent enrollment in 10-313-168 and 10-313-182.

Curriculum

Offered in the January – May semester

		Hrs/week	
First Semester		Credits	Lec-Lab
10-313-168	Nutrition for Dietetics #.....	3.....	3-0
10-313-178	Food Service Management 1 #.....	3.....	3-0
10-313-182	Coordinated Practice 1.....	3.....	1-8
Total.....		9 credits	

offered as online classes

Career Potential:

- Hospitals and Long-Term Care Facilities
- Mental Health and Special Needs Facilities
- Medical Clinics
- Food Service Management
- Hospitals and Long-Term Care Facilities
- School Food Service
- College Food Services
- Commercial, Employee Cafeterias
- Contractual, Catering
- Day Care (child/adult)
- Community Nutrition
- Schools

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.

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10-313-182 Coordinated Practice 1 3 credits
Through clinic experiences, students learn modern management techniques to select and train employees, maintain departmental records, purchase food and supplies, supervise meal service, plan meetings, analyze, correct problems and develop interdepartmental communication. Prerequisite or concurrent enrollment in 10-313-178



EHR Implementation Support Specialist Certificate

Program Number: 90-530-1

Certificate

Health-Related Professions Program Cluster

Center of Health & Safety Education

Program offered at Madison Campuses

For information call: (608) 246-6101 or
(800) 322-6282 Ext. 6101

About the Certificate

This certificate provides training for on-site user support for the period of time before and during implementation of Electronic Health Record (EHR) systems in clinical and public health settings. These individuals will provide support services, above and beyond what is provided by the vendor, to be sure the technology functions properly and is configured to meet the needs of the redesigned practice workflow.

This training also prepares the students to support on an ongoing basis the EHR technology deployed in clinical and public health settings. Workers in this role maintain systems in clinical and public health settings, including patching and upgrading of EHR software. They also provide one-on-one support, in a traditional "help desk" model, to individual users with questions or problems.

Unique Requirements for Admission

Information Technology professionals: An associate degree or higher in Information Technology and two years related experience.

OR

Healthcare professionals: An associate degree in a healthcare related field (exp.: RN, respiratory therapist, etc.) and two years related experience.

Note: Associate degree requirement may be waived with a 2 for 1 (2 years experience equivalent to 1 year of education) ratio of directly related experience to education.

Application Process

Please apply online at: <http://matcmadison.edu/HIT-Application>

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. Students are responsible for contacting the Center upon completion of the required classes. Certificate will be awarded after completion of all requirements is verified.

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

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Rev. 07/11

Curriculum

Courses	Credits	Hrs/week	
		Lec	Lab
10-530-101 Introduction to Health and Healthcare Information Technology....	2	2	0
10-530-130 Overview of EHR Systems	4	3	2
10-530-131 Configuring, Installing and Maintaining EHR. Systems.....	4	3	2
10-530-133 Maintenance and Support of EHR Systems.....	2	2	0
Total		12	

Note: All Electronic Health Record system certificate courses require a grade of C or better in order to receive the certificate.

Courses

10-530-101 Introduction to Health and Healthcare IT 2 credits
Introductory survey of how health care and public health are organized and services delivered in the U.S. The course is divided into three parts with the first part covering policy, relevant organizations and their interrelationships, professional roles, legal and regulatory issues, privacy laws, jobs in the health care settings and professional and ethical issues encountered. The second part introduces students to health care and computer terminology. The third part of the course provides a brief history of health care and health care technology culminating in health care reform initiatives and the HITECH Act. The concepts of meaningful use are introduced.

10-530-130 Overview of EHR Systems 4 credits
This course starts with a theory component specific to health care and public health applications, introducing basic health IT standards, health related data structures, and software applications. A laboratory component of the course then allows students to work with a simulated EHR system playing the role of a practitioners to learn a framework for how health care applications work together, get a feel for why standards are important, why a need for usability requirements and how errors can occur. Prerequisite: 10-530-101.

10-530-131 Configuring, Installing and Maintaining EHR Systems 4 credits
This is primarily a laboratory component building upon the previous knowledge looking into more depth of how EHR systems are constructed and configured for implementation, including security standards, interfaces and integration of systems, application testing, deployment, trouble shooting problems and system maintenance. A secondary component of the lab then provides a practical experience for addressing how to design and build an Electronic Health Record to meet specific needs of customers and end-users. Prerequisite: 10-530-130.

10-530-132 Standards, Supporting EHR Systems and Achieving Quality 2 credits
The final course in the certificates goes into more depth on the necessary standards for supporting and building Electronic Health Records for meeting patient care requirements, meaningful use and public reporting of health data. Then a brief introduction is provided on how these standards and practice workflow redesign can be used as instruments of quality improvement. The final component then looks at how multi-disciplinary teams must work together to build and continue to support developing Electronic Health System requirements to meet meaningful use requirements. Prerequisite: 10-530-101.

Career Potential:

- EHR Implementation Support Specialist
- EHR Technical Support Staff
- EHR Software Support Staff

Madison Area Technical College
 Health Information Technology—
EHR Technical/Software Support Staff Certificate

Effective: 2011-2012

Program Number: 90-530-2

Certificate

Health-Related Professions Program Cluster

Center of Health & Safety Education

Program offered at Madison Campuses

For information call: (608) 246-6101 or
 (800) 322-6282 Ext. 6101

About the Certificate

This certificate provides training for on-site user support for the period of time after the initial implementation of Electronic Health Record (EHR) systems in clinical and public health settings. This training prepares the students to support on an ongoing basis the EHR technology deployed in clinical and public health settings. Workers in this role maintain systems in clinical and public health settings, including patching and upgrading of EHR software. They also provide one-on-one support, in a traditional “help desk” model, to individual users with questions or problems.

Unique Requirements for Admission

Information Technology professionals: An associate degree or higher in Information Technology and 2 years related experience.

OR

Healthcare professionals: An associate degree in a healthcare related field experience (RN, respiratory therapist, etc.) and 2 years related experience.

Note: Associate degree requirement may be waived with a 2 for 1 (2 years experience equivalent to 1 year of education) ratio of directly related experience to education.

Application Process

Please apply online at: <http://matcmadison.edu/HIT-Application>

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. Students are responsible for contacting the Center upon completion of the required classes. Certificate will be awarded after completion of all requirements is verified.

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

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Rev. 07/11

Curriculum

Courses	Hrs/week	
	Credits	Lec-Lab
10-530-101 Introduction to Health and Healthcare Information Technology ...2.....	2	2-0
10-530-130 Overview of EHR Systems	4	3-2
10-530-131 Configuring, Installing and Maintaining EHR. Systems	4	3-2
10-530-133 Maintenance and Support of EHR Systems	2	2-0
Total	12	

Note: All Electronic Health Record system certificate courses require a grade of C or better in order to receive the certificate.

Courses

10-530-101 Introduction to Health and Healthcare IT 2 credits

Introductory survey of how health care and public health are organized and services delivered in the U.S. The course is divided into three parts with the first part covering policy, relevant organizations and their interrelationships, professional roles, legal and regulatory issues, privacy laws, jobs in the health care settings and professional and ethical issues encountered. The second part introduces students to health care and computer terminology. The third part of the course provides a brief history of health care and health care technology culminating in health care reform initiatives and the HITECH Act. The concepts of meaningful use are introduced.

10-530-130 Overview of EHR Systems 4 credits

This course starts with a theory component specific to health care and public health applications, introducing basic health IT standards, health related data structures, and software applications. A laboratory component of the course then allows students to work with a simulated EHR system playing the role of a practitioner. This allows the student to learn a framework for how health care applications work together, get a feel for why standards and usability requirements are important, why a need for usability requirements and how errors can occur. Prerequisite: 10-530-101.

10-530-131 Configuring, Installing and Maintaining EHR Systems 4 credits

This is an advanced course building upon the Overview of EHR Systems course looking into more depth of how EHR systems are constructed and configured for implementation, including security standards, interfaces and integration of systems, application testing, deployment, trouble shooting problems and system maintenance. A secondary component of the lab then provides a practical experience for addressing how to design and build an Electronic Health Record to meet specific needs of customers and end-users. Prerequisite: 10-530-130.

10-530-133 Maintenance and Support of EHR Systems 2 credits

The final course in the certificates goes into more depth on the necessary standards for maintenance and support of Electronic Health Record systems for meeting patient care requirements, meaningful use and public reporting of health data. Then a brief introduction is provided on how these standards and practice workflow redesign can be used as instruments of quality improvement. The final component then looks at how multi-disciplinary teams must work together to implement system modifications and meet meaningful use requirements of Electronic Health Record systems. Prerequisite: 10-530-131.

Career Potential:

- EHR Technical Support Staff
- EHR Software Support Staff



Language Interpreter for Health Services

Less-than-one-year Technical Diploma

Health-Related Professions Program Cluster

Center of Health & Safety Education

Program offered at South Campus

For information call: (608) 246-6065 or (608) 243-4029
(800) 322-6282 Ext. 6065 or 4029

About the Program

Language Interpreter for Health Services prepares students for employment as entry-level interpreters in a variety of sites including hospitals, clinics, family practice, and community agencies. The student will acquire a combination of cultural competency and interpreting skills that are necessary to bridge the divide between non-English speaking individuals and the health care system. Interpreters will assist non-English speaking clients access quality health services.

Aptitudes and interests in helping people and facility with language are helpful for this career area.

This program is offered primarily in the evening and on a part time basis.

Program outcomes for graduates include:

- Consecutive and simultaneous interpreting
- Sight translation
- Knowledge and applicability of medical terminology
- Strengthened interpersonal skills
- Knowledge and applicability of culturally and linguistically appropriate communication styles

Requirements for All Applications Submitted for the Current Academic Year:

Admissions Requirements

- 1) High school, HSED or GED completion or higher graduation;
- 2) Satisfactory COMPASS scores of: COMPASS – Reading-80, Writing-70, and Pre-Alg-45; and
- 3) Satisfactory testing of English and Spanish on the Oral Proficiency Interview (OPI) exam is required.

Program Requirements

- 1) Fluent bilingual skills in Spanish and English, as determined by testing assessments;
- 2) current Caregiver Background Check
- 3) completed Health History form

Curriculum

The courses listed below outline the requirements for graduation for students entering this program in the 2011-2012 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 (myMadisonCollege) account for specific graduation requirements. Program requirements are subject to change.

FIRST YEAR

First Semester		Credits	Hrs/week Lec-Lab
31-538-301	Introduction to Interpreting (9 wks)	1	4-0
31-538-302	Introduction to Basic Translation Skills (9 wks)	1	4-0
31-538-303	Cultural Competency & the Medical Setting (9 wks)	2	4-0
31-538-304	<u>Introduction to Interpreting in Spanish (9wks)</u>	<u>2</u>	<u>6-0</u>
Semester Total		6	

Second Semester

31-538-305	Intro to Basic Translation in Spanish (9 wks)	2	6-0
31-538-306	Introduction to Computer Basics (9 wks) OR	1	2-2
10-103-137	Word-Beginning*	(1)	(1-0)
31-538-307	US Healthcare System	2	2-0
31-538-309	Interpreting in Medical & Mental Health Setting (9 wks)	1	4-0
31-538-308	<u>Interpreting in Health Care in Spanish</u>	<u>1</u>	<u>2-0</u>
Semester Total		7	

Summer Semester

31-538-310	Ethics for Medical Track	1	4.5-0
31-538-311	Business Practices for Medical Track	1	4.5-0
31-538-312	<u>Medical Practicum</u>	<u>1</u>	<u>0-9</u>
Semester Total		3	

Language Interpreter Course Prerequisites

Students enrolling in the courses identified within this program must meet the following prerequisites: high school graduation or GED and language assessments tests.

Program Courses

<p>31-538-301 Intro to Interpreting 1 credit</p> <p>This initial interpretation course develops students' listening and memory skills and provides strategies to translate texts orally (sight) from Spanish into English or vice versa while maintaining the same style and register as the original. Development and enhancement of students' bilingual potential in both English and Spanish through the acquisition of non-technical vocabulary and comparative syntax will also be emphasized. Class is taught in English.</p>	<p>31-538-307 US Health Care System 2 credit</p> <p>This class is designed to give the student a broad understanding of the dynamics, key elements and overall principles of the health care system in the US. Particular attention is given to terms used by health services professionals and payer/provider relationships. Class is taught in English.</p>
<p>31-538-302 Intro to Basic Translation Skills 1 credit</p> <p>Principles and procedures for the translation of written materials. Includes an introduction to translation, translation preparation, translation procedures, and basics of grammar. Class is taught in English.</p>	<p>31-538-308 Interpreting in Healthcare in Spanish 1 credit</p> <p>This course develops the techniques, practice and knowledge needed to function as interpreters in a medical environment. Interpretation modes such as sight translation and consecutive interpretation as they apply to the medical setting are emphasized. Medical vocabulary/terminology in both English and Spanish will also be introduced. Class is taught in English and Spanish. Prerequisites: 31-538-301; 31-538-302; 31-538-304 and 31-538-305. Corequisite: 31-538-303</p>
<p>31-538-303 Cultural Competency & the Medical Setting 2 credits</p> <p>An orientation to some of the factors that influence people to speak, act, negotiate and make decisions. The objective is to modify personal assumptions and habits that impede success in the workplace. Additionally, students will examine cultural difference and perceptions that impact the medical environment. Students will learn how styles of thinking, value systems and political/social realities affect communication. Class is taught in English.</p>	<p>31-538-309 Interpreting in Medical & Mental Health Settings 1 credit</p> <p>This course develops the techniques, practice and knowledge needed to function as interpreters in a mental health care setting. Students will also have an opportunity to participate in service learning events in medical settings. Interpretation modes such as simultaneous interpretations, sight translation and consecutive interpretation as they apply to a medical &/or mental health care setting are emphasized. Mental health vocabulary/terminology in both English and Spanish will also be introduced. Class is taught in English and Spanish. Prerequisites: 31-538-301; 31-538-302; 31-538-303; 31-538-304 and 31-538-305</p>
<p>31-538-304 Intro to Interpreting in Spanish 2 credits</p> <p>Specific theories and practices in interpreting oral communication from English to Spanish and Spanish to English. Includes theories of interpretation, techniques of interpretation, interpretation strategies, interpretation procedures, and modes of interpretation. Class is taught in English and Spanish. Prerequisite: 31- 538-301.</p>	<p>31-538-310 Ethics for Medical Track 1 credit</p> <p>This course provides an in depth examination of the principals of the National Code of Ethics for Interpreters in Health Care and their application in the work setting. Prepares students to display professionalism and perform within legal and ethical boundaries. Class is taught in English.</p>
<p>31-538-305 Intro to Basic Translation Skills in Spanish 2 credits</p> <p>Principles and procedures for the translation of written materials. Includes an introduction to translation, translation preparation, translation procedures, basics of grammar in the target languages English and Spanish. Analysis of the Spanish language from the translator's point of view. Includes the structure of Spanish, cultural and stylistic components, paragraph and document development, mechanics and punctuation for editing, and writing resources. Class is taught in English and Spanish. Prerequisite: 31-538-302.</p>	<p>31-538-311 Business Practices for Medical Track 1 credit</p> <p>This course covers the business basics of working as a freelance medical interpreter. Gives a brief overview of marketing, insurance, tax implications, home office, organization, managing finances, legal do's & don'ts, business resources and technology as they pertain to freelance interpreting. Class is taught in English and Spanish.</p>
<p>31-538-306 Intro to Computer Basics 1 credit</p> <p>This class provides an overview of the computer for all level users. Focus will be on using software to keep your freelance interpreter business running smoothly. Class is taught in English.</p>	<p>31-538-312 Medical Practicum 1 credit</p> <p>Engaging in a specialty area internship to produce a translated product. Includes agency/individual sponsor, internship goals, portfolio project and on-site or supervised training.</p>

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

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 MATC Rev. 03/11

Mammography Certificate

Program Number: 80-526-1

Advanced Technical Certificate

Health-Related Professions Program Cluster

Center of Health & Safety Education

Program offered at Downtown Madison Campus

For information call: (608) 246-6065 or (608) 258-2478
(800) 322-6282 Ext. 6065 or 2478

About the Program

The mammographer is a registered radiologic technologist who produces radiographic images of the breast. Duties include: obtaining a thorough patient history, providing a specific explanation of the mammographic procedure, providing information and/or demonstrating the procedure of self breast examination, positioning of the patient to obtain proper projection and a quality mammographic image, making exposure factor selections, processing the image, storing and retrieving images, performing quality assurance tests and maintaining a quality control program to meet the standards of the Mammography Quality Standards Act (MQSA) and American College of Radiology (ACR).

This course provides the student with ample opportunity to meet the ARRT requirements to enable the student to write the mammography certification examination. Students will be involved in screening, diagnostic and interventional procedures. Students will review mammographic images with radiologists to gain experience in evaluating radiographic technique, breast anatomy, pathology and to gain an appreciation for the importance of good positioning techniques.

Technologists who complete the Advanced Technical Certificate in Mammography will meet the requirements of the MQSA and will be eligible to sit for the American Registry of Radiologic Technologists (ARRT) certification examination in mammography (the technologist must have been a R.T.R. for at least 12 months before one is eligible to write the mammography certification examination).

Requirements for the Advanced Technical Certificate in Mammography

1) A registered radiologic technologist; 2) a student radiographer enrolled in an accredited radiography program in their second year, second semester.

Requirements for Clinical Placement

1) A completed Caregiver Background Check (CBC) if required by clinical affiliation; refer to the Madison College Website for Health Human and Protective Services Policy; 2) a completed Personal History Form if required for clinical affiliation.

Curriculum

Courses	Credits	Hrs/week	
		Lec	Lab
10-526-185 Mammographic Instrumentation and Quality Assurance	3	3	0
10-526-186 Mammographic Positioning and Anatomy	3	3	0
10-526-187 Clinical Mammography	3	0	12
Total	9		

Courses

10-526-185 Mammographic Instrumentation and Quality Assurance

3 credits

Provides the student with the foundational concepts of mammographic equipment and quality assurance testing. This course will include types and functions, factors that govern and influence image production and recording, and quality control equipment. The student will gain the knowledge to construct a quality assurance program for a mammography program following the ACR and MQSA guidelines. Offered online only.

10-526-186 Mammographic Positioning and Anatomy

3 credits

Provides the fundamentals of mammography positioning. The course will include breast anatomy and physiology, pathology and treatment of breast disease, and interventional procedures. Course content will emphasize the importance of establishing a positive relationship with the patient, addressing their psychological needs and providing patient information related to the procedure. Offered as a combination online and traditional class.

10-526-187 Clinical Mammography

3 credits

Provides the student with the clinical experience required to become competent in performing mammographic procedures, mammographic film critique and time to perform required quality control testing. Upon course completion, the student will be competent in completing the entire examination from request and chart review, to patient screening, explaining the procedure to the patient, positioning the patient, using required accessories, setting the equipment, making a correct exposure, processing the film, completing paperwork, using the computer to store patient data and maintaining quality control.

Career Potential:

- Mammographer

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

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Rev. 03/11



Medical Assistant

Program Number: 31-509-1

One-Year Technical Diploma

Health-Related Professions Program Cluster

Center of Health & Safety 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 health care'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-nt.org).

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

Unique Requirements for Admission

- 1) High school graduate, HSED or GED;
- 2) two semesters of high school level or one semester of college level of science with grades of C or better;
- 3) Math competency (within the last two years) demonstrated through satisfactory scores on the Compass or equivalent assessment test or college-level Math.
- 4) Satisfactory testing in Reading, Writing and E-Write Compass testing or equivalent testing.

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 graduation for students entering this program in the 2011-2012 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 (myMadisonCollege) account for specific graduation requirements. Program 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 I & II	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 2.25- .75
10-103-137	Word-Beginning**	1 1.5-1.5
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	2 2-0
10-801-195	Written Communications ** ### 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 that 12 week in order to participate in the Medical Assistant Clinicals and Practicum

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

Note: A copy of the [essential functions](#) necessary to successfully complete the program of study is available on the web site.



Program Courses

31-501-308 Pharmacology for Allied Health 2 credits
 Introduces students to medication and basic pharmacology principles. Students apply basic pharmacodynamics to identify common medications and calculate dosages in preparation for medication administration. Prerequisite: All first semester courses. Corequisites: 31-509-305 and 31-509-306.

31-509-301 Medical Assistant Admin 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, communicate effectively with patients and other medical office staff. Prerequisites or Corequisites: 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 Corequisite: Medical Terminology.

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 Corequisite: All other first semester courses. Corequisites: 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 Corequisite: All other first semester courses. Corequisites: 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. Corequisites: 31-509-306 and 31-509-310.

31-509-306 Medical Assistant Clinical Procedures 2 3 credits
 Prepares students to perform phlebotomy and CLIA waived hematology, chemistry, immunology and laboratory procedures commonly performed by medical assistants in the ambulatory care setting. Prerequisite: All first semester courses. Corequisites: 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 Prof 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 Corequisites: 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. Corequisites: 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.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. 09/10

Medical Coding Specialist & Advanced Medical Coding Specialist

Program Number: 31-530-2

Program Number: 31-530-1

Less-Than-One-Year Technical Diploma &
One-Year Advanced Technical Diploma

Health-Related Professions Program Cluster

Center of Health & Safety 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: 1) ability to be precise, exact and detail-oriented; 2) ability to adhere to standards and guidelines; 3) a 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 available upon request from the program office.

Program Requirements

Admission Requirements

1) High school graduation or G.E.D. or H.S.E.D. with above average grades; 2) personal computer skills with knowledge of Windows; 3) good health as evidenced by a medical examination and proper immunizations; and 4) COMPASS or equivalent assessment test. Students are admitted in the fall and spring semesters. Part-time students are welcome. Online courses are available.

Course Prerequisites

A copy of the course prerequisites is available upon request from the division office. Academic advising is available to assist the student in registering for the appropriate courses.

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 graduation for students entering this program in the 2011-2012 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 (myMadisonCollege) account for specific graduation requirements. Program requirements are subject to change.

Basic Medical Coding Specialist Program (Less-Than-One-Year Technical Diploma)

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
10-530-181 Introduction to the Health Record	1	1	0
10-530-182 Human Diseases for the Health Professions	3	3	0
10-530-183 ICD-9-CM Coding	3	2	2
10-530-184 CPT Coding	3	2	2
10-530-185 Health Care Reimbursement	2	1	2
Total	18		

**General Anatomy and Physiology is recommended for those who plan to pursue an associate degree and/or a bachelor's degree.

Course Delivery Format

All courses in the Basic Program are offered each semester. Both the traditional face-to-face and the online delivery formats are used for courses in this program. Please contact the center office (608-246-6065) to find out which format the courses will be offered in for the upcoming semester.

Advanced Medical Coding Specialist Program (One-Year Advanced Technical Diploma Program)

Completion of the Basic Medical Coding Specialist Program plus:

Courses	Credits	Hrs/week	
		Lec	Lab
10-530-186 Advanced ICD-9-CM Coding	3	2	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	8		

Course Delivery Format

The courses in the Advanced Program are offered in the online delivery format. Optional on-campus laboratory sessions are scheduled for some courses for those who need face-to-face assistance. All courses are not offered each semester; please contact the center office (608-246-6065) to find out which courses will be offered for the upcoming semester.

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 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.

10-530-181 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. Pre or Co-requisites of: 10-501-101 Medical Terminology & 10-501-153 Body Structure & Function

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. Pre or Co-requisites of: 10-501-101 Medical Terminology & 10-501-153 Body Structure & Function

10-530-183 ICD-9-CM Coding 3 credits

Prepares students to assign ICD-9-CM codes supported by medical documentation with entry-level proficiency. Students apply ICD-9-CM instructional notations, conventions, rules and official coding guidelines when assigning ICD-9-CM codes to case studies and actual medical record documentation. Pre or Co-requisites of: 10-530-181 Intro to the Health Record & 10-530-182 Human diseases for the Health Profession and Co-requisite of 10-530-183 CPT Coding

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. Pre or Co-requisites of: 10-530-181 Intro to the Health Record & 10-530-182 Human diseases for the Health Profession and Co-requisite of 10-530-183 ICD-9-CM Coding

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. Pre or Co-requisites of: 10-530-183 ICD-9-CM & 10-530-184 CPT Coding

10-530-186 Advanced ICD-9-CM Coding 3 credits

Requires the student to apply and expand the knowledge gained from the basic course, ICD-9-CM 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. Pre or Co-requisite of: 10-530-185 Health care Reimbursement

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. Pre or Co-requisite of: 10-530-185 Health care Reimbursement

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. Pre or Co-requisite of: 10-530-185 Health care Reimbursement

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. Pre or Co-requisite of: 10-530-185 Health care Reimbursement

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.org. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

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Rev. 09/10

Medical Laboratory Technician

Program Number: 10-513-1

Associate in Applied Science Degree

Health-Related Professions Cluster

Center of Health and Safety 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 Board Certification exam for medical laboratory technicians, under the direction of the American Society of Clinical Pathologists and the American Society for Clinical Laboratory Science.

Unique Requirements for Admission

- 1) High school graduation, HSED or GED with a C or better average; and
- 2) Two semesters of High school courses with C or better grades in (each) chemistry and biology, (or one semester of each course at the college level with a grade of C or better); and
- 3) Algebra: Algebra competency demonstrated within the last two years through either satisfactory competency test scores OR one semester of college-level Algebra with a satisfactory grade of C or better; and
- 4) Satisfactory score on the COMPASS or equivalent assessment.

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.
- 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 graduation for students entering this program in the 2011-2012 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

First Semester	Credits	Hrs/week Lec-Lab
10-513-110 Basic Lab Skills.....	1	2
10-513-111 Phlebotomy	2	3
10-513-113 QA Lab Math.....	1	2
10-513-114 Urinalysis	2	3
20-806-206 General Anatomy and Physiology*.....	4	5
20-806-201 Gen., Organic & Biological Chemistry*	5	4-2
10-801-195 Written Communication* OR	3	3
20-801-201 English Composition 1*	(3)	(3)
Semester Total	18	

Second Semester

10-513-115 Basic Immunology Concepts.....	2	3
10-513-120 Basic Hematology.....	3	4
10-513-121 Coagulation.....	1	2
10-513-122 Introduction to Blood Bank	2	3
10-513-123 Advanced Blood Bank	2	3
10-801-198 Speech* OR	3	3
10-801-196 Oral/Interpersonal Communications* OR.....	(3)	(3)
20-810-201 Fundamentals of Speech*	(3)	(3)
20-806-273 Microbiology*	4	3-2
Semester Total	17	

Summer Session

10-809-197 Contemporary American Society* OR.....	3	3
20-809-203 Introduction to Sociology*	(3)	(3)
10-809-199 Psychology of Human Relations* OR	3	3
20-809-231 Introduction to Psychology*	(3)	(3)
Semester Total	6	

SECOND YEAR

First Semester

10-513-130 Advanced Hematology	2	3
10-513-131 Clinical Chemistry 1	3	4
10-513-132 Clinical Chemistry 2	2	3
10-513-133 Clinical Microbiology	4	7
10-513-180 Body Fluids	1	1
Elective	2	2
Semester Total	14	

Second Semester

10-513-140 Advanced Microbiology	2	2
10-513-141 Preclinical Experience	2	0-2
10-513-151 Clinical Experience 1	3	0-20
10-513-152 Clinical Experience 2	4	0-20
10-513-153 Clinical Portfolio	1	0-1
Semester Totals	12	

Notes: *Courses which can be taken prior to entering the program may be taken at college transfer level. Science-based courses (20-806-201, 20-806-273 and 20-806-206) must have been taken within five years prior to program admission to receive credit. **Elective credits may be any combination of associate degree level or college transfer courses and may be taken prior to program admission. 1) A copy of the [essential functions](#) necessary to successfully complete the program of study is available on the program's web site. 2) All program students must meet the health requirements specified on the Madison College Health History Form prior to enrolling in program courses.

Program Courses

10-513-110 Basic Lab Skills 1 credit

Explores health career options and fundamental principles and procedures of the clinical laboratory. Incorporates medical terminology, basic laboratory equipment, safety and infection control procedures, and simple laboratory tests. Prerequisites: successful completion of the following high school courses with a grade of C or better: three years of English, one year of chemistry, one year of general biology, two years of algebra or one year algebra and one year of geometry; a satisfactory score on the COMPASS test or equivalent substitute and acceptance into Clinical Lab Tech program.

10-513-111 Phlebotomy 2 credits

Provides opportunities to perform routine venipuncture, capillary puncture, and special collection procedures. Corequisite: 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. Corequisites: 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. Corequisites: 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. Corequisites: 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. Corequisites: 10-513-115, 10-513-120, 10-513-122, 10-513-123 and 20-806-273.

10-513-122 Introduction to Blood Bank 2 credits

Focuses on basic blood banking concepts and procedures including blood typing and compatibility testing. Prerequisites: 10-513-110, 10-513-111, 10-513-113 and 10-513-114. Corequisites: 10-513-115, 10-513-120, 10-513-123 and 20-806-273.

10-513-123 Advanced Blood Bank 2 credits

Covers advanced blood banking concepts and procedures including workups for adverse reaction to transfusions and disease states. Prerequisites: 10-513-110, 10-513-111, 10-513-113 and 10-513-114. Corequisites: 10-513-115, 10-513-120, 10-513-122 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. Corequisites: 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. Corequisites: 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. Corequisites: 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. Corequisites: 10-513-130, 10-513-131 and 10-513-132.

10-513-140 Advanced Microbiology 2 credits

Introduces laboratory methods used in the isolation and initial identification of acid-fast organisms, fungi, parasites and anaerobes. Prerequisite: 10-513-133.

10-513-141 Pre-Clinical Experience 2 credits

Provides opportunities to practice the principles and procedures of laboratory medicine in a clinical laboratory setting. Clinical content is reviewed and students run a mock-clinical laboratory from specimen acquisition to result reporting. Resume writing and interviewing techniques are also discussed. Prerequisites: satisfactory completion of 1st – 3rd semester Medical Laboratory Technician program courses and concurrent enrollment in 10-513-140 and 10-513-151.

10-513-151 Clinical Experience 1 3 credits

Provides opportunities to practice the principles and procedures of laboratory medicine on-site, in a clinical laboratory facility. Students will practice on state of the art instrumentation in the areas of clinical chemistry and hematology, including urinalysis and coagulation. Prerequisite: satisfactory completion of on campus pre-clinical experience. Prerequisites: Satisfactory completion of all courses and co-requisites of 10-513-141 and 10-513-152.

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. Prerequisites: Satisfactory completion of all courses and co-requisites of 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 of 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: of 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.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: 08/11

Occupational Therapy Assistant

Program Number: 10-514-1

Associate in Applied Arts Degree

Health-Related Professions Program Cluster

Center of Health & Safety Education

Program offered at the Downtown 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, P.O. Box 31220, Bethesda, MD 20824-1220, (301) 652-AOTA. Credentialing as a Certified Occupational Therapy Assistant (COTA) is separate from Madison College graduation. Certification with the National Board for Certification in Occupational Therapy (NBCOT) requires passing a nationally administered OTA competency examination. Licensure by the State of Wisconsin or other states requires passing this certification exam and complying with any other state credentialing requirements. A felony conviction may affect a graduate's ability to sit for the NBCOT certification examination or attain state licensure.

NBCOT Exam Pass Rates:

The total number of graduates who passed the National Board for Certification in Occupational Therapy (NBCOT) certification examination as first-time new graduate test takers in 2008–2010 was 40 out of 40, which is a pass rate of 100%. During that 3-year time period, the program had 42 graduates.

Unique Requirements for Admission

1) High school graduate or equivalent. 2) **Chemistry:** Two semesters of high school chemistry, which includes lab components, with a C or better each semester (Chemistry for the Community, ChemCom or similar classes are not acceptable) OR one semester of college-level chemistry course (Nature of Chemistry 10-806-102, General Chemistry 10-806-134, or a higher level course) with a grade of C or better. 3) **Algebra:** Algebra competency (within two years) demonstrated through satisfactory competency test scores OR one semester of college-level algebra with satisfactory grade of C or better (Elementary Algebra 10-834-110, or a higher level course) with a grade of C or better. 4) **Biology:** Two semesters of high school biology with a C or better each semester OR one semester of college-level biology (General Anatomy & Physiology 20-800-206 or a higher level course) with a grade of C or better. 5) Acceptable ACT, SAT, COMPASS or equivalent assessment test.

Curriculum

The courses listed below outline the requirements for graduation for students entering this program in the 2011-2012 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 (myMadisonCollege) account for specific graduation requirements. Program requirements are subject to change.

FIRST YEAR

First Semester		Credits	Hrs/week Lec-Lab
10-514-171	Introduction to Occupational Therapy	3	2-1
10-514-172	Medical and Psychosocial Conditions	3	2-1
10-514-173	Activity Analysis and Applications	2	0-2
10-801-195	Written Communication* OR	3	3-0
20-801-201	English Composition 1*	(3)	(3-0)
20-806-206	General Anatomy and Physiology* ***	4	3-2
20-809-231	Introduction to Psychology*	(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 Communications* 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*	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.

** Courses must be completed within 18 months after completion of all other Occupational therapy courses.

*** 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.

Program Requirements

1) Caregiver Background Check (CBC); refer to Health & Safety 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 division office.

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. Corequisites: 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. Corequisites: 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. Corequisites: 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. Corequisites: 10-514-175, 10-514-176 and 10-514-178.

10-514-175 Psychosocial Practice 3 credits
Examines the role of the OTA in the service delivery to individuals affected by mental health conditions. Provides opportunity for development of skills related to psychosocial assessment and interventions. Prerequisites: 10-514-171, 10-514-172, 10-514-173 and 20-806-206. Corequisites: 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. Corequisites: 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 and 10-514-178. Corequisites: 10-514-179, 10-514-182, 10-514-183 and 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. Corequisites: 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. Corequisites: 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. Corequisites: 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. Corequisites: 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. Corequisites: 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. Corequisites: 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. Corequisites: 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.org. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

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Rev. 03/11

Optometric Technician

Program Number: 31-516-2

One-Year Technical Diploma

Health-Related Professions Program Cluster

Center of Health & Safety 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.

Unique Requirements for Admission

1) High school graduate, HSED or GED; 2) satisfactory scores on the COMPASS or equivalent assessment test.

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 graduation for students entering this program in the 2011-2012 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
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
31-543-335 Body Structure** OR	2	3	0
10-501-153 Body Structure**	(3)	(3)	0
31-516-339 Human Relations OR	1	2	0
10-809-199 <u>Psychology of Human Relations**</u>	(3)	(3)	0
Semester Total	14		
Second Semester			
31-516-326 Optical Dispensing 2	2	2	2
31-516-327 Clinical Ophthalmic Procedures.....	2	0	4
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 <u>Clinical Experience*</u>	3	0	40
Semester Total	17		

* Clinical experience lasts six weeks and begins on week 15 of the second semester of study.

** Class may be taken prior to acceptance into program.

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



Program Courses

31-516-301 Ophthalmic Pre-Testing 3 credits

Covers the history of optometry, relationships between optometry, ophthalmology and opticianry and various paraprofessional careers in vision care. The course involves the study of and practical experience in patient pre-testing such as case history, visual acuity, color vision, pupil evaluation and depth perception as well as the specialized testing procedures such as keratometry and blood pressure.

31-516-305 Basic Optical Concepts 3 credits

Covers the properties of light and the function of a lens in vision correction. Included is a review of basic math needed in vision care and the physiological aspects of vision. This course begins the study of the neutralization and verification of spectacle lens powers, to include spherical, cylindrical and prism lenses.

31-516-315 Ocular Anatomy 2 credits

Familiarizes the optometric technician with the form and function of the human eye. The foundation of the lecture material is the anatomy of the eye, but we will discuss the physiology and function of the eye as much as possible. We will also discuss the actions and uses of diagnostic pharmaceutical agents, as their function is based on interference with normal ocular physiology. This course also covers optometric terminology as well as prescription translation.

31-516-325 Optical Dispensing 1 3 credits

Covers frame definition, parts and types of frames, measurement of frames and lenses, alignment of frames, inserting and removing lenses, introduction to dispensing of eyewear and frame repairs.

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. Prerequisites: 31-516-315, 31-516-301, 31-516-305, Body Structure & Function

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 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.

Required Related Course

31-543-335 Body Structure & Function 2 credits
10-501-153 Body Structure & Function 3 credits

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 optometrist, ophthalmologist or clinic, 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 chairside 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.

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Rev. 09/10

Phlebotomy

Program Number: 90-513-1

Certificate

Health-Related Professions Cluster

Center of Health and Safety Education

Program offered at Fort Atkinson, Reedsburg and Truax Campuses

For information call: (608) 246-6065, (608) 246-6459 or (800) 322-6282 Ext. 6065 or 6459

About the Program

The phlebotomy training certificate at Madison College consists of two 2-credit courses. Students are required to take both courses. Completion of Phlebotomy training is a career pathway to the Clinical Laboratory Technician program.

Important Information related to the Certificate

Students can anticipate spending at least 6 hours per week above and beyond scheduled class time to study the course material and complete required assignments.

Students are placed in clinical rotations during daytime hours only due to limited instructional personnel during evening and night hours.

Students must have the transportation means to travel outside the immediate Madison area for clinical rotation sites if required.

Certificate Requirements

High school graduation, HSED, GED, or higher documented degree with C or better average. You will be required to provide proof in the form of an official transcripts or other official documents, prior to registration for the classes.

Acceptable score on the COMPASS assessment of Pre-Alg 55, Reading 80 & Writing 70. (See the Frequently Asked Questions section of this document for information about COMPASS testing.)

Computer literacy and keyboarding skills

Curriculum

FIRST YEAR		Hrs/week	
First Semester		Credits	Lec-Lab
10-513-100	Introduction to Phlebotomy.....	2	1-2
10-513-154	Phlebotomy Techniques.....	2	0-4
Semester Total		4	

Program Courses

10-513-100 Introduction to Phlebotomy 2 credits
 Key topics addressed in Introduction to Phlebotomy include safety and infection control, basic laboratory skills (pipetting, laboratory glassware, microscopy, weight measurements, and metric conversion), basic laboratory tests (waived testing and point of care testing), laboratory specimen requirements, specimen handling and processing, special topics related to the healthcare setting (e.g., professionalism, ethics, patient confidentiality, and legal issues), and medical terminology. In addition, students are introduced to the health care setting and the role of the phlebotomist. This course is a prerequisite for Phlebotomy Techniques. Students must achieve a grade of C or better before they will be allowed to proceed to Phlebotomy Techniques.

10-513-154 Phlebotomy Techniques 2 credits
 In Phlebotomy Techniques, students develop the skills required to perform successful blood collection techniques, including venipuncture and capillary puncture. The highlight of this course is a 45-hour clinical experience that provides students the opportunity to apply the skills they learned in the classroom. The clinical experience occurs during daytime hours. The exact time of the clinical experience varies, depending on which clinical site a student is given. Students must be available to complete their clinical experience during the scheduled daytime hours.



Health History Form

Students must meet the requirements specified on the Madison College [Health History form](#) (PDF). This can be found on our website: matcmadison.edu, click A-Z index, click H for Health forms, click the "Health History Form (pdf)" link. A completed form must be on file at Madison College by the first week of class. Failure to comply with this policy will result in immediate dismissal from the certificate. Because of the nature of the clinical experiences, it is strongly recommended that students be immunized against hepatitis B. Students who do not receive the vaccine will be required to sign a waiver indicating their decisions to decline the vaccine.

Caregiver Background Check

As required by Wisconsin law, any student who has access to patients during a clinical experience must undergo a Caregiver Background Check. Based upon the information disclosed by the student or revealed by the background check, additional research, including a request for information related to out-of state residence, may need to be conducted. Any additional costs incurred by conducting this research will be the responsibility of the student. As required by law, all information obtained by the background check process must be released to the student's clinical sites. The discovery of a criminal history may bar a student from participating in the clinical training and gaining employment as a phlebotomist. The Background Information Disclosure form can be found at: <http://www.dhs.wisconsin.gov/forms/F8/F82064.pdf>.

If you have questions regarding how a criminal history will affect your participation in this class career please contact: (800) 322-6282, ext. 6459 or (608) 246-6459.

Health Insurance Coverage

Due to the inherent risk of exposure to harmful agents, students in the phlebotomy training certificate are required to have health insurance. A low cost insurance plan covering accident and illness is available to students through Madison College at the student's expense.

Cost

The total cost for the certificate for Wisconsin residents, including tuition, books, and laboratory fee, is approximately \$1,000 for the 11/12 school year. The breakdown of the cost is as follows:

Resident tuition and general fees for 4 credits at Madison College:

- Approximately \$780
- Books: Approximately \$150
- Laboratory fee: \$60
- Name tag: \$8

Additional expenses that may be incurred by the student include:

- Costs related to the physical exam required for completion of the Health History form
- Transportation and parking for clinical sites
- Costs related to health insurance coverage during clinical training

Frequently Asked Questions

What skills and abilities are needed to be successful as a phlebotomist?

- Ability to work and communicate with others
- Ability to work effectively as a member of a team
- Ability to work under pressure and to follow directions accurately and precisely
- Capacity for calm and reasoned judgment
- Knowledge and skills to interact with diverse patient populations
- Fine motor skills to manipulate needles and blood drawing equipment.

What is the COMPASS test and how do I take it?

The COMPASS test is a placement test for students planning on taking degree credit classes at Madison College. The results of the COMPASS test will be used to determine if you possess the requisite basic knowledge and skills required to be successful in the phlebotomy training certificate.

Additional information about the COMPASS test is available online at matcmadison.edu or you may call (608)246-5220.

What other information will I need upon registering into the courses?

- Madison College Health History form (found on website)
- Name Badge order form for Health Students (found on website)
- Laboratory dress code requirements and fees
- Background Information Disclosure form
- Student Information form
- Information on health insurance coverage

Upon receiving this information, you should read it carefully and comply with any special program requirements and deadlines. Failure to do so will result in dismissal from the certificate.

Will Madison College offer assistance in finding a job?

Students in the Phlebotomy Training certificate can utilize the job placement services of the Madison College Placement Office to gain knowledge of available jobs. Information about these services will be given to you in class.

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

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Rev. 07/11

Physical Therapist Assistant

Program Number: 10-524-1

Associate in Applied Science Degree

Health-Related Professions Program Cluster

Center of Health & Safety 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.

Accreditation/Credentialing

Madison Area Technical College has been granted Candidate for Accreditation status by the Commission on Accreditation in Physical Therapy Education (CAPTE) of the American Physical Therapy Association (1111 North Fairfax Street, Alexandria, VA 22314; phone 703-706-3245; email: accreditation@apta.org). Candidacy is not an accreditation status nor does it assure eventual accreditation. Candidate for Accreditation is a pre-accreditation status of affiliation with the Commission on Accreditation in Physical Therapy Education that indicates the program is progressing towards accreditation.

Application Process

To apply for the program, students must submit an application, online or paper. A \$30 application fee (if not previously paid) plus \$5 online fee, high school transcripts or GED/HSED scores, all college transcript(s) and COMPASS/ASSET test scores.

Unique Requirements for Admission

The applicant will be expected to have better than average grades. An acceptable COMPASS, ACT, SAT, or ASSET test is required. Applicants must have successfully completed with a grade of C or better, two high school semesters or one college semester of chemistry and biology and have Algebra competency demonstrated with satisfactory testing within 2 years prior to applying.

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.

Curriculum

The courses listed below outline the requirements for graduation for students entering this program in the 2011-2012 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

Spring Semester

	Credits	Hrs/week Lec-Lab
10-806-177 General Anatomy and Physiology ** OR	4	5-4
20-806-206 General Anatomy and Physiology **	(4)	(5-4)
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
Semester Total	16	

Summer Semester

10-809-166 Intro to Ethics: Theory & App* OR	3	3-0
20-809-266 Ethics in Medicine *	(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)
Semester Total	9	

Fall Semester

10-801-198 Speech * OR	3	3-0
10-801-196 Oral/Interpersonal Communications* OR	(3)	(3-0)
20-810-201 Fund of Speech * OR	(3)	(3-0)
20-810-205 Interpersonal & Small Group Comm	(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
Semester Total	17	

SECOND YEAR

Spring Semester

10-524-144 PTA Princ of Neuro Rehab (14 weeks)	4	2.16-5
10-524-145 PTA Princ of Musculo Rehab (14 weeks)	4	2.16-5
10-524-146 PTA Cardio & Integ Mgmt (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#
Semester Total	13	

Summer Semester

10-524-148 PTA Clinical Practice 2 (4 weeks)	3	0-40#
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
Semester Total	15	

* Courses which may be taken prior to entering the program. May also be taken at the College-Transfer level. Must have C's or better to transfer. A copy of the essential functions necessary to successfully complete the program of study & a copy of the program's mission statement and strategic plan is available from the website.

Full-time Clinical Work Experience

** 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.

Note: Students are placed in English or mathematics courses based on their scores on the



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 & 20-806-206. Co-requisites: 10-524-139 & 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 & 20-806-206. Co-requisites: 10-524-138 & 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 & 20-806-206. Co-requisites: 10-524-138 & 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 & 10-524-140. Co-requisites: 10-524-142 & 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, 10-5224-139 & 10-524-140. Co-requisites: 10-524-141 & 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, 10-5224-139 & 10-524-140. Co-requisites: 10-524-141 & 10-524-142.

10-524-144 PTA Princ of Neuro 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 & 10-524-143. Co-requisites: 10-524-145, 10-524-146 & 10-524-147.

10-524-145 PTA Princ of Musculo 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 & 10-524-143. Co-requisites: 10-524-144, 10-524-146 & 10-524-147.

10-524-146 PTA Cardio & Integ Mgmt 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 & 10-524-143. Co-requisites: 10-524-144, 10-524-145 & 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 & 10-524-143. Co-requisites: 10-524-144, 10-524-145 & 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 & 10-524-147. Co-requisites: 10-524-149, 10-524-150 & 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 & 10-524-147. Co-requisites: 10-524-148, 10-524-150 & 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 & 10-524-147. Co-requisites: 10-524-148, 10-524-149 & 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 & 10-524-147. Co-requisites: 10-524-148, 10-524-149 & 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.org. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

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Rev. 01/11

Polysomnography

Program Number: 80-515-1

Advanced Technical Certificate

Health-Related Professions Program Cluster

Center of Health & Safety 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 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; electrooculography (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.

Unique Requirements for Admission

Must be a graduate of one of the following accredited programs: Respiratory Therapist, Registered Nurse, Practical Nurse, Paramedic or have a minimum of an Associate of Applied Science degree with evidence of Human Anatomy classes. Must have current two-person, infant through adult CPR certification and a current Physical examination prior to classes beginning. This program curriculum has been designated by the Board of Registered Polysomnographic Technologist (BRPT) as an alternative educational pathway for purposed of establishing registry eligibility.

Career Potential:

- Sleep Researcher
- Polysomnography (Sleep) Technician

Curriculum

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.org. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

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Rev. 09/10



Radiography

Associate in Applied Science Degree

Health-Related Professions Program Cluster

Center of Health & Safety Education

Program offered at Downtown Madison 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.

Application Process

To apply for the program, students must submit a complete application packet. A completed packet consists of the completed application form, \$30 application fee (if not previously paid), \$5.00 online fee, high school transcripts or GED/ HSED test scores, college transcript(s) and COMPASS, ASSET, ACT or SAT test scores.

Unique Requirements for Admission

- 1) high school graduation or equivalent;
- 2) successful completion of two semester at the high school level or one semester at the college level with a grade of C or better in the following areas: a) geometry and b) chemistry or physics;
- 3) algebra competency demonstrated within the last two years through either satisfactory competency test scores or a college algebra course, with a grade of C or better; and
- 4) satisfactory scores on the COMPASS, ASSET, ACT or SAT.

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.

Program Number: 10-526-1

Curriculum

The courses listed below outline the requirements for graduation for students entering this program in the 2011-2012 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 (myMadisonCollege) account for specific graduation requirements. Program requirements are subject to change.

FIRST YEAR		Credits	Hrs/week Lec-Lab
Pre-Radiography course:			
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 Composition 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 Communications * 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 & 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 C's or better to transfer. A copy of the essential functions necessary to successfully complete the program of study & a copy of the program's mission statement and strategic plan is available from the website.



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. Prerequisites: General A&P, Radiography prerequisite 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 prerequisite 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 prerequisite 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. Prerequisites: All first semester classes 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. Prerequisites: All fourth semester classes 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 & third semester classes and 10-526-193. Concurrent enrollment in: 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. Prerequisites: All first, second & third semester classes and 10-526-193. Concurrent enrollment in: 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 classes 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 classes and concurrent enrollment in: 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. Prerequisites: All first & second semester classes.

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 & second semester classes and 10-526-193. Corequisites: 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 & second semester classes and 10-526-193. Concurrent enrollment in: 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 classes and 10-526-193. Concurrent enrollment in: 10-526-194, 10-526-195 and 10-526-199.

10-526-197 Radiation Protection & Biology 3 credits
 Prepares radiography students to protect themselves and others from exposure to radioactivity. Students examine the characteristics of radiation and how radiation affects cell biology. Students apply standards and guidelines for radiation exposure. Prerequisites: All first, second & third semester classes and 10-526-193. Concurrent enrollment in: 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. Prerequisites: All previously listed classes.

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 & second semester classes and 10-526-193. Corequisites: 10-526-194, 10-526-195 and 10-526-196.

Career Potential:

- Radiographer

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

- Bone Densitometrist
- CT Technologist
- MRI Technologist
- Mammographer
- Special Procedures Technologist
- Radiation Therapy Technologist
- Nuclear Medicine Technologist
- Ultrasound (Sonographer)
- Equipment Sales Representative
- Educator

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

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Rev. 03/11

Respiratory Therapist

Program Number: 10-515-1

Associate in Applied Science Degree

Health-Related Professions Program Cluster

Center of Health & Safety 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](http://www.coarc.com) (CoARC) <http://www.coarc.com>; 1248 Harwood Road; Bedford, Texas 76021-4244; (817) 283-2835

As an advanced-level respiratory therapist program, graduates are eligible to become Registered Respiratory Therapists. (RRT)

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.

Unique Requirements for Admission

- 1) High school graduation or GED/HSED or higher documented degree; 2) Two semester of high school level or one semester of college-level Chemistry courses with grades of C or better;
- 3) Algebra competency demonstrated within the last two years through either satisfactory competency test scores OR one semester of college-level Algebra with a satisfactory grade of C or better (i.e., Elementary Algebra 10-834-110 or College Math 10-804-107; and 4) ACT, SAT, COMPASS, ASSET or equivalent assessment test

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 beginning the clinical affiliation; and 4) Essential functions for the Respiratory Care Practitioner Program.

Curriculum

The courses listed below outline the requirements for graduation for students entering this program in the 2011-2012 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

First Semester	Credits	Hrs/week 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 <u>General Org. & Bio Chemistry</u>	(5)	(4-2)
Semester Total	17	

Second Semester

20-806-273 Microbiology* OR	4	2-2
20-806-274 Microbiology*	(5)	(3-2)
10-515-171 Respiratory Therapeutics 1 (9 wk).....	3	4-4
10-515-172 Respiratory Therapeutics 2 (9 wk).....	3	4-4
10-515-173 Respiratory Pharmacology	3	3-0
10-515-174 <u>Respiratory/Cardiac Physiology</u>	3	3-0
Semester Total	16	

Interim

10-515-175 <u>Respiratory Clinical 1</u>	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 & Small Group Comm* OR.....	(3)	(3-0)
10-801-196 Oral/Interpersonal Communication* OR.....	(3)	(3-0)
20-801-202 <u>English Composition 2*</u>	(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 wk)	3	0-18
10-515-179 Respiratory Clinical 3 (9 wk)	3	0-18
10-809-197 Contemporary American Society* OR	3	3-0
20-809-203 <u>Introduction to Sociology*</u>	(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 wk)	3	0-18
10-515-183 Respiratory Clinical 5 (9 wk)	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 <u>Introduction to Psychology*</u>	(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 & 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 web site.



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. Prerequisites: Acceptance into the Respiratory Therapist program. Corequisites: 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. Corequisites: 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; Corequisites: 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. Corequisites: 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. Corequisites: 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. Corequisites: 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. Corequisites: 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. Corequisites: 10-515-177, 10-515-178 and 10-515-179.

10-515-177 Respiratory Life Support Technology 4 credits
Focuses on adult respiratory critical care including management of mechanical ventilation and artificial airways. Prerequisite: 10-515-175. Corequisites: 10-515-176, 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 this clinical, 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. Corequisites: 10-515-176, 10-515-177 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 this clinical, 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. Corequisites: 10-515-176, 10-515-177 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, diseases, noninvasive and invasive therapeutic interventions. Prerequisite: 10-515-176. Corequisites: 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. Corequisites: 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 this clinical, 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. Corequisites: 10-515-180, 10-515-181 and 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. Corequisites: 10-515-180, 10-515-181 and 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; Corequisites: 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:

- Respiratory Care Practitioner
- 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.org. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

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Rev. 05/11

Restorative and Rehabilitation Therapy Aide

Program Number: 90-524-1

Certificate

Health-Related Professions Program Cluster

Center of Health & Safety Education

Program offered at Madison Campuses

For information call: (608) 246-6065 or (608) 258-2479
(800) 322-6282 ext. 6065 or 2479

About the Restorative and Rehabilitation Therapy Aide Program

The 60 hour, 2 credits, Restorative & Rehabilitation Therapy Aide training provides Certified Nursing Assistants with additional skills and insights in the therapeutic area. It assists with career exploration in a variety of therapeutic settings. Training includes classroom and lab skills procedure in therapeutic interventions and approaches to care. Therapeutic site tours and presentation by different types of therapists at a variety of area health care facilities. Site visits will include an Acute Care Rehabilitation setting, Sports Medicine, Long Term Care, Restorative care setting and Speech Therapy. This is short-term training offered at the Madison campus.

Program Requirements and Courses

- 1) Certified Nursing Assistant in good standing on the Wisconsin Nurse Aide Registry; and
- 2) Completion or concurrent enrollment in Body Structure and Function.

10-524-124 Restorative and Rehabilitation Therapy Aide 2 credits

The 60 hour, 2 credits, Restorative and Rehabilitation Therapy Aide training prepares Certified Nursing Assistants for employment as aides in restorative and rehabilitation therapy settings. Rehabilitation therapy aides work in the therapy department under the supervision of the therapist in hospitals, long term care and clinic settings. Restorative aides work under the supervision of the registered nurse. Training includes classroom, instruction in therapeutic interventions and approaches to care, lab skills practice and site tours of a variety of therapy settings..

Curriculum

Course	Credits	Hrs/week Lec-Lab
10-524-124 Restorative and Rehabilitation Therapy Aide.....	2	0-4
Required Prerequisite		
30-543-300 Nursing Assistant class and Wis Registry.....	3	3-0
31-543-335 Body Structure OR.....	2	3-0
10-501-153 Body Structure OR.....	(3)	(3-0)

A copy of the [essential functions](#) necessary to successfully complete the program of study is available from the program's web site.

Learning modules

- Introduction to Therapeutic Health Care
- The Role of the Restorative and Rehabilitation Therapy Aide
- Safety of the Therapeutic Process
- Interpersonal Relations in the Therapeutic Process
- Therapeutic Approaches to Activities of Daily Living
- Therapeutic Procedures
- Reporting and Documenting Therapeutic Interventions
- Office Procedures
- Therapeutic Approaches to Health Conditions
- Professionalism

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

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Rev. 09/10



Surgical Technologist

Program Number: 31-512-1

One-Year Technical Diploma

Health-Related Professions Program Cluster

Center of Health & Safety Education

Program offered at Madison Campuses

For information call: (608) 246-6065, (608) 246-6280 or
(800) 322-6282 Ext. 6065 or 6280

About the Program

The Surgical Technologist Program is accredited by the Commission on Accreditation of Allied Health Education Programs (CAAHEP) in cooperation with the Accreditation Review Committee (ARC) on Education in Surgical Technology. ARC is sponsored by the Association of Surgical Technologists, the American College of Surgeons and the American Hospital Association.

Graduates of the program are prepared to function as members of a surgical team. Surgical technologists are allied health professionals who are an integral part of the team of medical practitioners providing surgical care to patients in a variety of settings. The surgical technologist works under medical supervision to facilitate the safe and effective conduct of invasive surgical procedures. This individual works under the supervision of a surgeon to ensure that the operating room environment is safe, that equipment functions properly, and that the operative procedure is conducted under conditions that maximize patient safety. A surgical technologist possesses expertise in the theory and application of sterile and aseptic technique and combines the knowledge of human anatomy, surgical procedures, and implementation of tools and technologies to facilitate a physician's performance of invasive therapeutic and diagnostic procedures.

Opportunities may exist to accept a limited number of transfer students into the fall and spring semesters of the program. Individuals interested in this option should call the Center office and schedule an appointment to discuss their particular situation.

Application Process

To apply to the program, students must submit a complete application packet including application, all transcripts and testing scores. Please see the [Admission Information & Next Steps](#) link for more specific details.

Curriculum

The courses listed below outline the requirements for graduation for students entering this program in the 2011-2012 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.

		Credits	Hrs/week Lec-Lab
Pre-Surgical Technologist courses:			
10-501-153	Body Structure* OR (no longer allowed Fall 2012)	3	3-0
20-806-206	General Anatomy & Physiology* OR	(4)	5-4
10-806-177	General Anatomy & Physiology* OR	(4)	
20-806-208	Anatomy & Physiology I & II*	(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*	3	3-0
	Semester Total	9	

First Semester

31-512-327	ST Introduction to Surgical Technology (1 st 9 wks)	4	8-0
31-512-328	ST Fundamentals 1 (1 st 9 wks)	4	8-0
31-512-329	ST Fundamentals 2 (2 nd 9 wks)	2	4-0
31-512-330	ST Clinical 1 (2 nd 9 wks)	3	0-16
31-512-317	Functional Microbiology**	1	2.5-0
	(Functional Microbiology will become a "Pre-Surgical Tech" course starting Fall 2012)		
	Semester Total	14	

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 on a space available basis. 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.



Unique Requirements for Admission

- 1) High school graduation, HSED or GED; and
- 2) Satisfactory scores on the COMPASS, ASSET test or comparable substitute; and
- 3) Chemistry: Two semesters of high school chemistry with a lab component with a grade of C or better each semester; or a four-credit college-level chemistry course with a lab component (10-806-134, General Chemistry or a higher level course), with a grade of C or better; and
- 4) Algebra competency demonstrated (within the last two years) through either satisfactory competency test scores or a college algebra course, with a grade of C or better.

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.

Program Courses

Note: For the following courses, see course catalog or Madison College Website:

10-501-153	Body Structure	3 credits
20-806-206	General Anatomy & Physiology	4 credits
20-806-207 & 208	Anatomy & Physiology I & II	8 credits
10-801-196	Oral/Interpersonal Communication	3 credits
10-510-101	Medical Terminology	3 credits

31-512-317 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. Prerequisites: Medical Terminology (10-501-101) AND Pre-/Co-requisites: Body Structure & Function (10-501-153) or General A&P (20-806-206) or A&P I and II (20-806-207 & 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.

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 may require additional education.

More detailed and updated information on this program may be available at: malcmadison.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. 06/11

Therapeutic Massage

Program Number: 30-537-1

Less-Than-One-Year Program

Health-Related Professions Program Cluster

Center of Health & Safety 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 apply to take the National Certification Exam for Therapeutic Massage and to apply to the Wisconsin Department of Regulation and Licensing for state licensure.

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.

Unique Requirements for Admission

1) High school graduation or GED equivalency, 2) one-year high school biology or one semester of college human anatomy and 3) COMPASS or equivalent assessment test.

Curriculum

The courses listed below outline the requirements for graduation for students entering this program in the 2011-2012 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.

		Credits	Hrs/week Lec-Lab
First Semester			
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.



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 30-537-337 (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.

Career Potential:

- **Nationally Certified Massage Therapist**
- **Wisconsin Licensed Certified Massage Therapist**

After passing the National Certification Exam for Therapeutic Massage and applying to the Wisconsin Department of Regulation and Licensing, graduates may work as Wisconsin Licensed Massage Therapists in massage clinics, health clubs, chiropractic offices, hospitals, beauty salons, day spas, or in private practice.

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.

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Rev. 01/11

Early Childhood Education

Program Number: 10-307-1

Associate in Applied Science Degree

Education Program Cluster

Center for 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.

Unique Requirements for Admission

High school diploma with a GPA of 2.0 or GED or satisfactory completion of 12 college credits. In addition, 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. A COMPASS Reading score of 80 or higher is required for all first semester Early Childhood Program courses.

Unique Requirements for Graduation

Students must achieve at least a 2.0 (C) grade in all program core courses and an overall 2.0 (C) grade point average.

Curriculum

The courses listed below outline the requirements for graduation for students entering this program in the 2011-2012 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 (myMadisonCollege) account for specific graduation requirements. Program requirements are subject to change.

FIRST YEAR		Credits	Hrs/week Lec-Lab
First Semester			
10-307-148	ECE: Foundations of Early Childhood Education**	3	3-0
10-307-151	ECE: Infant and Toddler Development**	3	3-0
10-307-166	ECE: Curriculum Planning**	3	2-2
10-307-167	ECE: Health, Safety, and Nutrition **	3	3-0
10-307-174	ECE: Practicum 1**	3	1.5-8
10-801-195	Written Communication OR	3	3-0
20-801-201	English 1*	(3)	(3-0)
Semester Total		18	

Second Semester			
10-307-178	ECE: Art, Music, and LanguageΔ	3	2-2
10-307-179	ECE: Child DevelopmentΔ	3	3-0
10-307-188	ECE: Guiding Children's BehaviorΔ	3	2-2
10-307-192	ECE: Practicum 2**	3	3-8
10-801-198	Speech OR	3	3-0
20-810-201	Fundamentals of Speech Composition*	(3)	(3-0)
10-809-172	Race, Ethnic & Diversity Studies OR	3	3-0
20-809-217	Race, Class and Gender*	(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
10-801-197	Technical Reporting 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 80 or higher is required for all first semester Early Childhood Program courses.

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.



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 80 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 80 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 80 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. Prerequisite: COMPASS Reading score of 80 or higher.

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 80 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 Teachers**
Work in full-day and part-day childcare 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.
- **Infant or Toddler Caregivers**
Care for children under two years of age.
- **In-home Providers/Nannies**
Provide care in the child's home.
- **Early Childhood Special Needs/ Educational Assistants**
Work in public school early childhood programs, and public school four-year-olds' programs.
- **Directors/ Administrators**
Are responsible for managing day care centers and planning and implementing program.

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: 3/11

Emergency Medical Technician

Basic • Intermediate Technician • Intermediate EMT Program Numbers: 30-531-3/30-531-6/30-531-4

Less-Than-One-Year Diploma

Emergency Medical Services Program Cluster

Center for Human & Protective Services

Program offered at the West Campus; various locations

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

Unique Requirements for Admission to All MADISON COLLEGE EMT Entry-level Programs

Students must be at least 18 years old and have a current health care provider CPR card. Students must complete a Criminal History Check as required by the state for licensure and clinical sites. Upon acceptance, a physical examination is required. See the specific EMT program for any additional program requirements. For EMT course information and application/registration material, go to: <http://matcmadison.edu/program-info/emergency-medical-technician-basic> and click on the Admissions tab.

Emergency Medical Technician–Basic (EMT-B) 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. Prerequisites: CPR certification at 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.

Program Course

30-531-301 Emergency Medical Technician Basic 4 credits
Follows the US Department of Transportation EMT–Basic course curriculum. Patient contact experience required. This course meets requirements for certification with the National Registry of Emergency Medical Technicians and educational requirements for EMT licensure in Wisconsin. Prerequisites: CPR certification at 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.

Curriculum

The courses listed below outline the requirements for graduation for students entering this program in the 2011-2012 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.

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
Emergency Medical Technician–Basic (EMT-B)			
30-531-301 Emergency Medical Technician-Basic OR	4		4-4
10-531-101 Emergency Medical Technican-Basic	(4)		(4-4)
Emergency Medical Technician–Intermediate Tech (EMT-Int Tech)			
30-531-360 Emergency Medical Technician-Intermediate Tech	3		3-3
Emergency Medical Technician–Intermediate (EMT-I)			
30-531-351 Advanced Emergency Care 1	4		4-4
30-531-352 Advanced Emergency Care 2	4		4-4
30-531-353 EMT-I Internship	4		0-16



**Emergency Medical Technician–
Intermediate Technician (EMT-Int Tech)
Less-Than-One-Year Diploma**

This course builds on the EMT-Basic curriculum. Students learn advanced patient assessment, communication skills and beginning advanced life support interventions. This course meets the educational requirements for 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.

Program Course

30-531-360 EMT Intermediate Technician 3 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.

**Emergency Medical Technician–
Intermediate (EMT-I)
Less-Than-One-Year Diploma**

This course builds on the EMT-Basic and Intermediate Technician curriculum. Students learn advanced patient assessment, communication skills and advanced life support interventions. This course meets requirements for certification with the National Registry of Emergency Medical Technicians and educational requirements for licensure in Wisconsin. Prerequisite: a valid Wisconsin EMT-Basic license. The Department of Health and Family Services may set other requirements.

Program Courses

30-531-351 Advanced Emergency Care 1 4 credits
Students learn advanced patient assessment, communication skills and intermediate advanced life support interventions. Prerequisite: a valid Wisconsin EMT–Basic license.

30-531-352 Advanced Emergency Care 2 4 credits
Students continue to learn advanced patient assessment, communication skills and intermediate advanced life support interventions. Prerequisite: Advanced Emergency Care 1, 30-531-351.

30-531-353 Emergency Medical Technician–
Intermediate Internship 4 credits
Upon successful completion of Advanced Emergency Care 1, 30-531-351, and Advanced Emergency Care 2, 30-531-352, students participate in a field internship. Students apply knowledge and skills to pre-hospital patient situations, supervised by clinical instructors, on ambulance calls.

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.org. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

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Rev: 4/11

Paramedic

Program Number: 30-531-2

Less-Than-One-Year Diploma

Emergency Medical Services Program Cluster

Center for Human and Protective Services

Program offered at the West Campus, various locations

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.

Unique Requirements for Admission

You must be at least 18 years of age, have a valid Wisconsin license as an EMT-Basic, EMT-Intermediate Technician or EMT-Intermediate and have successfully completed the program admission testing process. A COMPASS Reading score of 80 or higher, Writing score of 31 or higher, Pre-algebra score of 43 or higher are required for admission to the EMT Paramedic Program. A grade of C or better in a college level English and Math will also satisfy this requirement. Proof of this must be provided. Students must complete a Criminal History Check as required by the state for licensure and clinical sites. Upon acceptance, a physical examination is required.

Curriculum

The courses listed below outline the requirements for graduation for students entering this program in the 2011-2012 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.

		Hrs/week	
		Credits	Lec-Lab
First Semester			
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	

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. Corequisites: 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. Corequisites: 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. Corequisites: 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. Corequisites: 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. Corequisites: 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. Corequisites: 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. Corequisites: 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. Corequisites: 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. Corequisites: 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 Standard 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. Corequisite: 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.org. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

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Rev: 07/11

Human Services Associate

Program Number: 10-520-3

Associate in Applied Science Degree

Human Services Program Cluster

Center for 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.

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 accredited by the State of Wisconsin Department of Regulation and Licensing as a training program for Substance Abuse Counselors. The Human Services Associate program is also accredited by the National Counsel on Standards in Human Services Education

Unique Requirements for Admission

High school diploma or GED/HSED with a grade point average of 2.0 or equivalent or satisfactory completion of 12 college credits. 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.

Prior to taking 10-520-139 Human Services Agency Experience 1, students will be required to complete a Wisconsin Criminal History Background Check (CHBC) prior to placement in a human services agency. Information obtained from the CHC may affect the ability to secure a fieldwork placement and the ability to find employment after graduation.

Unique Requirements for Graduation

Students must achieve at least a 2.0 (C) grade in all program core courses and an overall 2.0 (C) grade point average.

Curriculum

The courses listed below outline the requirements for graduation for students entering this program in the 2011-2012 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 (myMadisonCollege) account for specific graduation requirements. Program requirements are subject to change.

FIRST YEAR

First Semester		Credits	Hrs/week Lec-Lab
10-520-105	Introduction to Human Services Δ	3	3-0
10-520-106	Orientation to Human Services Populations Δ	3	3-0
10-520-117	Interviewing Δ †	3	3-0
10-520-135	Issues in Alcohol and Other Drug Abuse Δ †	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 Skills Δ †	3	3-0
10-520-130	Social Change Skills Δ	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 1 Δ **	4	0-16
10-520-157	Human Services Counseling Skills† Δ	3	3-0
10-520-188	Human Services Experience Conference 1 Δ **	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)
<u>Elective</u>		<u>3</u>	<u>E</u>
Semester Total		16	

Second Semester

10-520-120	Community Service Agencies Δ **	3	3-0
10-520-140	Human Services Agency Experience 2 Δ **	5	0-20
10-520-189	Human Services Experience Conference 2 Δ **	3	3-0
10-809-172	Race, Ethnic & Diversity Studies OR	3	3-0
20-809-217	Race, Class, Gender*	(3)	(3-0)
<u>Elective</u>		<u>3</u>	<u>E</u>
Semester Total		17	

*College transfer equivalent courses.

Δ Prerequisites required; consult department office.

**Corequisites: courses must be taken at the same time.

†AODA Certification Courses

Note: Students are placed in English or mathematics courses based on their scores on the COMPASS test or on completion of the appropriate prerequisite/s. A COMPASS Reading score of 80 or higher and an e-Write score of 6 or higher with a Writing score of 46-68 or an e-Write score of 5 with a Writing score of 69-99 are required for the following first semester courses: Intro to Human Services, 10-520-105; Orientation to Human Services Populations, 10-520-106; and Interviewing, 10-520-117.



Program Courses

Human Services Associate Course Prerequisites

Students enrolling in the courses identified within this program must meet the following requirements: High school diploma or GED/HSED with a grade point average of 2.0 or equivalent. A COMPASS Reading score of 80 or higher and an e-Write score of 6 or higher with a Writing score of 46-68 or an e-Write score of 5 with a Writing score of 69-99 are required for the following first semester courses: Intro 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. Prerequisites: 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. Prerequisites: Human Services Associate course prerequisites.

10-520-116 Group Work Skills 3 credits
Covers skills needed to organize, facilitate and participate in groups. Through reading and experiential exercises, students learn about group process, stages of group development, leadership styles, their own behavior in a group and the types of groups used in human services work. 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. Prerequisites: 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. Prerequisite: 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. Prerequisites: Human Services Associate course prerequisites.

10-520-136 Counseling Alcoholics and Other Drug Abusers 3 credits

Trains students in basic listening and responding skills, familiarizes students with the 12 core functions performed by AODA counselors (screening, intake, orientation, assessment, treatment planning, counseling, case management, crisis intervention, client education, referral, reports, record keeping and consultation) and provides a structured learning environment in which students can develop skills in these core functions.

10-520-139 Human Services Agency Experience 1 4 credits

Students develop skills as human services workers by working directly or indirectly with clients in community agencies 16 hours per week. An agency supervisor and a faculty member closely supervise students. The human services staff makes field placement assignments. Prerequisites: 10-520-105, 10-520-116, 10-520-117 and concurrent enrollment in 10-520-188.

10-520-140 Human Services Agency Experience 2 5 credits

Students continue their on-the-job training in community agencies for 20 hours per week. By the end of the course, students have the skills of an entry-level human services worker. Prerequisites: 10-520-139 and 10-520-188, and concurrent enrollment in 10-520-120 and 10-520-189.

10-520-157 Human Services Counseling Skills 3 credits

Introduces basic concepts of ego counseling, Rogerian counseling, transactional analysis, rational-emotive therapy, reality therapy, narrative therapy and solution focused therapy. Covers how counseling theories identify and define problems, explain personality development and treat problem situations. Prerequisites: 10-520-116 and 10-520-117.

10-520-188 Human Services Experience Conference 1 3 credits

A small-group seminar designed as a companion/supportive course to the agency experience. Relates theory and principles of practice to agency field-study experience. Students learn to develop supportive relationships with clients and apply the values of confidentiality and client self-determination. They learn how their values and personal experiences affect their work with clients. Prerequisites: 10-520-105, 10-520-116, 10-520-117 and concurrent enrollment in 10-520-139.

10-520-189 Human Services Experience Conference 2 3 credits

Students develop skills specific to their fieldwork placement and complete a major project for their fieldwork agency. Taken concurrently with 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

10-520-150 Alcohol and other Drug Abuse – Special Populations† 3 credits

6 elective credits are required for the program and can be any six associate degree or college transfer credits of your choice.

Career Potential:

- Case Aide
- Case Manager
- Community Support Worker
- Counselor
- Income Maintenance Worker
- Information and Referral Specialist
- Intake Worker
- Outreach Worker
- Prevention Worker
- Resident Manager
- Social Services Assistant
- Volunteer Coordinator

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

- Alcohol and Other Drug Abuse Counselors
- Program Directors
- Social Workers
- Supervisors

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

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Rev: 3/11

Criminal Justice—Law Enforcement

Program Number: 10-504-1

Associate in Applied Science Degree

Protective Services Program Cluster

Center for Human and Protective Services

Program offered at the West 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.

Unique Requirements for Admission

High school diploma, HSED or GED with a minimum grade point average of 2.0 or equivalent, or satisfactory completion of 12 college credits. Students should also have basic computer skills.

Unique Requirements for Graduation

Students must achieve at least a 2.0 (C) grade in all program core courses and an overall 2.0 (C) grade point average.

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.

Curriculum

The courses listed below outline the requirements for graduation for students entering this program in the 2011-2012 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 (myMadisonCollege) for specific graduation requirements. Program requirements are subject to change.

FIRST YEAR

First Semester		Credits	Hrs/week 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 InvestigationΔ	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	Race, Ethnic and Diversity Studies OR	3	3-0
20-809-217	Race, Class, Gender*	(3)	(3-0)
	Elective	3	E
Semester Total		18	

*College transfer equivalent courses.

ΔPrerequisites 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 prerequisites.



Madison Area Technical College

Criminal Justice—Law Enforcement

Program Courses

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. Prerequisites: 10-504-900 and 10-504-170.

10-504-900 Introduction to Criminal Justice 3 credits

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. Prerequisite: Criminal Justice course prerequisites.

10-504-901 Constitutional Law 3 credits

Introduces the student to the legal process, procedure and forum in which guilt or innocence is determined. Explores the history and development of criminal evidence law and the necessity for having legal evidence. Prerequisite: 10-504-902.

10-504-902 Criminal Law 3 credits

Provides an in-depth view of criminal law. Familiarizes students with the basic criminal justice process and procedures. Analyzes the substantive criminal law, its scope and definition, classification and the elements constituting the more common crimes. Prerequisites: 10-504-900 and 10-504-170.

10-504-903 Professional Communications 3 credits

This course familiarizes the student with the tactical skills utilized by Criminal Justice Professionals to handle situations without physical force. It explores dialog skills, and strategies for overcoming barriers through effective problem solving. The course familiarizes students with interpersonal techniques for various professional contacts, conflict resolution and court proceedings. Prerequisite: 10-504-901.

10-504-904 Juvenile Law 3 credits

Study of juvenile justice system which emphasizes factors and causes that explain delinquent behavior and the juvenile as a victim of child abuse and neglect. The course examines the philosophy and workings of the juvenile court and Wisconsin's Children's (Chapter 48) and Juvenile Codes (Chapter 938) beginning with the police and ending with the disposition of a child in need of protective services (C.H.I.P.S.) or a delinquent juvenile. Also examines sensitive crimes (Chapter 948). Prerequisites: 10-504-900 and 10-504-170.

10-504-905 Report Writing 3 credits

In this course, students will 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. Understanding who will be using these reports and the multitude of audiences and reason they will be using the law enforcement report is an essential skill. Essential to all law enforcement personnel is to take effective field notes and translate pertinent information from these notes into official detailed police reports. Prerequisites: 10-504-902, 10-801-195 and 10-801-196.

10-504-906 Criminal Investigation 3 credits

In this course, students learn how to recognize, process and preserve physical evidence. Students learn of law enforcement's response to a victim of crime including the dynamics of victimization and victim's rights, and integrate professional communication with law enforcement's responsibilities to victims. Students also learn the statutory elements of each of the sensitive crimes and the dynamics, impacts and investigative strategies unique to them. Prerequisites: 10-504-902 and 10-504-121.

10-504-907 Community Policing Strategies 3 credits

Identifies principles, techniques and behaviors that promote community service and effective interaction with a multi-cultural, multiethnic society. Also identifies principles and techniques of decision making and problem-oriented policing. Explores the principles and techniques of crime prevention. Prerequisite: completion of first-year courses.

10-504-908 Traffic Theory 3 credits

Students learn knowledge, skills and attitudes necessary for effective traffic law enforcement and accident investigation. Student learning goals will include demonstrating knowledge of goals, methods and statutes pertaining to traffic law enforcement; preparing and issuing traffic law citations, ranging from verbal warning to arrest; demonstrating correct procedures for investigating the offense of operating a motor vehicle while under the influence of alcohol or controlled substances; demonstrating knowledge of traffic control techniques, day and night; and demonstrating knowledge of principles and methods of traffic accident investigation. Prerequisites: 10-504-902 and 10-504-121.

Recommended Elective

10-504-145 Investigative Photography 3 credits

6 elective credits are required for the program and can be any six associate degree or college transfer credits of your choice.

Program Number: 10-504-1

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.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: 3/11

Criminal Justice— Law Enforcement Academy

Program Number: 30-504-1

Less-Than-One-Year Diploma

Protective Services Program Cluster

Center for Human and Protective Services

Program offered at the West 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

Unique Requirements for Admission

Students seeking admission to the Law Enforcement Academy must possess either

- 1) a two-year associate degree from a Wisconsin technical college with a grade point average of 2.0 or higher or its accredited equivalent from another state or
- 2) a minimum of 60 fully accredited college-level credits with a grade point average of 2.0 or higher.

Students applying must provide proof of a valid driver's license with a good driving record and a Crime Information Bureau Identification Records Request. Students must also pass an interview with a score of 76% or higher. Students accepted into the Law Enforcement Academy must obtain a medical/physical examination, drug test, and submit the Physician's Medical Screening Advisory Report for Basic Law Enforcement Officer Training.

For specific information and application materials, applicants should call 246-5297.

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 graduation for students entering this program in the 2011-2012 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.

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.



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.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: 10/10

Digital Forensics Certificate

Program Number: 90-504-1

Certificate

Protective Services Program Cluster

Center for Human and Protective Services

Program offered at West Campus

For information call: (608) 245-5882 or
(800) 322-6282 Ext. 5882

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.

Required Knowledge

Applicants must have a good working knowledge of computers. This can be self taught or through training and education.

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. Students are responsible for contacting the Department upon completion of the required classes. Certificate will be awarded after completion of all requirements is verified.

Curriculum

Courses	Credits	Hrs/week	
		Lec	Lab
10-504-185 Introduction to Computer Forensics	3	3	0
10-504-186 Introduction to Internet & Network Concepts.....	3	3	0
10-504-189 Introduction to Video Evidence.....	3	3	0
10-504-196 Ethics	1	3	0
10-504-187 Legal Issues and Computer Forensics.....	3	3	0
10-504-195 Small Devices	3	3	0
10-504-188 Advanced Computer Forensics/Practicum	3	3	0
Total	19		

Application Requirements

- Cannot have any abuse of technology in their background
- Criminal history cannot have any convictions for computer crimes
- Must have a 2.0 GPA
- Must complete an application for certificate
- Final entrance into certificate is by department consent

How to Apply (Fall 2011 applicants)

- Call Garilyn Trutttschel 608-245-5882 (Program Director) for application packet or email at gtrutttschel@matcmadison.edu

Starting September 1, 2011 for Fall 2012 applicants Certificate Application Process

To apply, see: *Apply Online* (on the Madison College website). [Create an ApplyWeb account](#) and follow the [instructions](#) to complete the [Online Certificate Application](#) before the [application deadline](#). Submit the \$15 non-refundable fee (payable by credit card, debit card or electronic check) with your application. Applicants may submit more than one certificate application per term using the Online Certificate Application; the same fees apply for each additional application.

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

10-504-185 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.

10-504-186 Introduction to Internet & Networking Concepts 3 credits

Internet related investigations, terminology and management of evidence gathered from online sources. Internet service provider overview. Hacking investigations, chat room, email, website, phishing online auction sites, Instant messaging, newsgroups and Bulletin boards, internet related fraud methods, BotNets, viruses, worms, etc... This course would include an overview of how various computer networks work, how to read log files, IP addressing schemes, IP telephony, overview of various file sharing networks commonly found in forensic investigations. Basic overview of network intrusion detection and response and reporting. Overview of Netanalysis, Kazaalyzer, and other standard forensic tools.

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.

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, ECPA, HIPPA, FERPA, 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, 10-504-186 and 10-504-187.

10-504-188 Advanced Computer Forensics Concepts//Practicum 3 credits

Overview of advanced computer forensics topics such as encryption, password cracking tools, data hiding techniques, steganography, anti-forensic tools and their effect on investigations, forensic problem solving (reconstruction of web pages from web cache, reverse engineering of P2P networks, images, etc.) INFO2 (Recycle Bin) Files, In depth discussion of file carving & Windows artifacts, hidden partitions, thumbs.db files, advanced MAC (modified, accessed, created) time discussion, metadata. Microsoft Vista & Bitlocker, X Box Forensics, Digital Deception. This course will also cover an overview of how Cell Phone networks, Cell Phones, Personal Data Assistants, and other portable devices work. This course would be a culmination of skills from previous courses. Students would be expected to take a case study from beginning to end of investigation and court process. The students would receive a case study problem, and would have to write incident reports, collect evidence, acquire digital evidence, perform forensic examination of several types of digital evidence, write reports regarding the forensic exams, participate in trial prep, and courtroom testimony. Prerequisites: 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

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

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Rev: 07/11

Fire Protection Technician Fire Service Certification

Program Number: 10-503-2/30-503-2

Protective Services Program Cluster

Center for Human and Protective Services

Program offered at Madison Campuses

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.

Unique Requirements for Admission

High school diploma, HSED or GED with a grade point average of 2.0 or equivalent or satisfactory completion of 12 college credits. Students should also 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-Basic 10-531-101 course. CPR certification at a professional level is also required for EMT Basic.

Students may want to consider taking the course Intro to Protective Services 10-503-101 prior to entering the Fire Protection Technician program. This course would satisfy the elective requirement for the program.

Unique Requirements for Graduation

Students must achieve at least a 2.0 (C) grade in all program core courses and an overall 2.0 (C) grade point average.

Curriculum

Fire Protection Technician

FIRST YEAR

First Semester		Credits	Hrs/week Lec-Lab
10-503-139	Principles of Emergency Services.....	3	3-0
10-503-143	Building Construction.....	3	3-0
10-531-101	Emergency Medical Technician-BasicΔ.....	4	4-0
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)
10-809-199	Psychology of Human Relations OR.....	3	3-0
20-809-231	Introduction to Psychology*.....	(3)	(3-0)
Semester Total		19	

Second Semester

10-503-141	Firefighter 2/Hazardous Materials Operations AND . 1.....	1	1-0
10-503-142	Fire Fighting Principles OR.....	4	4-0
10-503-100	Fire Recruit AcademyΔ.....	(5)	(6-6)
10-503-144	OSHA for the Fire ServiceΔ.....	3	3-0
10-801-196	Oral/Interpersonal Communication OR.....	3	3-0
20-810-201	Fundamentals of Speech Composition*.....	(3)	(3-0)
10-806-134	General Chemistry.....	4	3-2
10-807-151	Physical Education-Fire Safety Technician.....	1	1-1
Semester Total		16	

SECOND YEAR

First Semester

10-503-151	Fire PreventionΔ.....	4	4-0
10-503-152	Hazardous Materials TechnicianΔ.....	4	4-0
10-503-157	Fire InvestigationΔ.....	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

10-503-147	Fire Protection SystemsΔ.....	4	4-0
10-503-148	Fire Administration 1Δ.....	3	3-0
10-503-155	Fire Protection HydraulicsΔ.....	4	5-0
10-503-156	Strategies, Tactics & Incident ManagementΔ.....	4	4-0
Elective.....		3	E
Semester Total		18	

*College transfer equivalent courses.

ΔPrerequisites 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	6-6
10-503-100	Fire Recruit AcademyΔ.....	(5)	(6-6)
30-531-301	Emergency Medical Technician-BasicΔ OR.....	4	4-4
10-531-101	Emergency Medical Technician-BasicΔ.....	(4)	(4-4)
Total		9	



Program Courses

Fire Protection Technician

Associate in Applied Science Degree

10-503-139 Principles of Emergency Services 3 credits

Provides an overview to fire protection; career opportunities in the fire protection and related fields; philosophy and history of fire protection/service; fire loss analysis; organization and function of public and private fire protection services; fire departments as part of local government; laws and regulations affecting the fire service; and fire service nomenclature.

10-503-141 Firefighter 2/Hazardous Materials Operations 1 credit

This course meets the NFPA requirements for firefighters. Provides the first responders with the awareness and knowledge to identify hazardous materials and to safely respond to hazardous materials (hazmat) emergencies

10-503-142 Fire Fighting Principles 4 credits

Describes basic fire behavior, and techniques used to control structural and related fire emergencies, and life safety practices. Students perform all practical evolutions necessary to control and extinguish fires and otherwise meet all requirements for Firefighter 1 certification with the State of Wisconsin.

10-503-143 Building Construction 3 credits

Covers the basic principles of construction and specific classifications of construction as they relate to fire prevention, fire resistance, fire and smoke containment, and performance under fire conditions. Specific building styles, including high-rise and multi-family dwelling units, are also studied.

10-503-144 OSHA for the Fire Service 3 credits

This course introduces the basic concepts of occupational health and safety as it relates to emergency service organizations. Topics include risk evaluation and control procedures for fire stations, training sites, 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. Prerequisites: 10-503-139 and 10-503-143.

10-503-147 Fire Protection Systems 4 credits

Provides information relating to the features of design and operation of fire detection and suppression systems. Prerequisites: 10-503-151, 10-503-152 and 10-503-157

10-503-148 Fire Administration 1 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: 10-503-151, 10-503-152 and 10-503-157

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. Prerequisites: 10-503-139, 10-503-143 and 10-503-144.

10-503-152 Hazardous Materials Technician 4 credits

Examines characteristics relating to hazardous materials including problems of recognition and mitigation. Prepares students for Hazardous Materials Technician level. Prerequisites: 10-503-139, 10-503-143 and 10-503-144.

10-503-155 Fire Protection Hydraulics 4 credits

Provides a foundation of knowledge in order to understand the principles of the use of water in fire protection. Meets all the requirements for Driver Operator-Pumper certification with the State of Wisconsin. Prerequisites: 10-503-151, 10-503-152 and 10-503-157.

10-503-156 Strategies, Tactics & 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 and 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: 10-503-139, 10-503-143 and 10-503-144.

Recommended Elective

10-503-101 Intro to Protective Services 3 credits

This protective services course is intended to present an overview of the career fields in Emergency Medical Services, Fire and Law Enforcement. Topics covered include CPR, Legal Context, Incident Command System, Defense and Arrest Tactics, Physical Fitness and Nutrition, Ethics and Professionalism.

***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 fire fighting training prepares students for the State of Wisconsin Firefighter 1 and Firefighter 2 certification examinations. Completion of the EMT Basic Course also will provide the student with a diploma in Fire Service Certification. Prerequisite: A COMPASS Reading score of 80 or higher..

Note: The Fire Recruit Academy is accredited by the International Fire Service Accreditation Congress.

10-531-101 Emergency Medical Technician Basic 4 credits

Follows the U.S. Department of Transportation EMT-Basic course curriculum. Patient contact experience is required. This course meets requirements for certification with the National Registry of Emergency Medical Technicians and educational requirements for EMT licensure in Wisconsin. Prerequisites: CPR certification at professional level and a COMPASS Reading score of 80 or higher. Students must be at least 18 years old.

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.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: 3/11

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

Curriculum

Requirements

15 Credits

World Language..... 3-8

Additionally, non-credit enrichment courses in French, Spanish, Chinese, German, Arabic, etc. may count as one credit each.

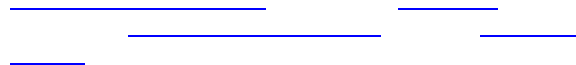
Study Abroad 3-12

Every student must have one education abroad experience/course or courses taken in a semester-abroad experience.

Internationalized Courses..... 0-9

Complete up to 9 credits of course work to bring the certificate total to 15 credits.

Certificate Application Process



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.

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. 09/11



Courses

		Hrs/week	
		Credits	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	Intro to Mandarin Chinese 1	3	3-0
20-802-231	Intro to Mandarin Chinese 2	3	3-0
20-802-240	Intro to Modern Arabic 1	3	3-0
20-804-241	Intro 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

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

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

Internationalized Courses cont'd

806 Natural Science

20-806-280	Environmental Issues	4	4-0
20-806-290	Renewable Energy in the Developing World	3	3-0

807 Physical Education

20-807-260	Martial Arts Fundamentals	1	2-0
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809 Social and Behavioral Science

20-809-214	Introduction to International Economics	3	3-0
20-809-220	American Foreign Policy	3	3-0
20-809-223	International Relations	3	3-0
20-809-228	Environmental Economics	3	3-0
20-809-243	Introduction to Comparative Politics	3	3-0
20-809-244	Russian Politics: An Introduction to Political Area Studies	3	3-0
20-809-245	Latin American Politics: An Introduction to Political Area Studies	3	3-0
20-809-246	Introduction to African Politics	3	3-0
20-809-247	Introduction to East Asian Politics	3	3-0
20-809-251	Sociology of Middle East and North Africa	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 & 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
10-109-182	Global Studies Seminar	3	3-0
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 & 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