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Course Catalog 2009–2010

www.DMACC.edu
Can I find answers to the following FAQs online?
Yes, visit www.DMACC.edu

What do I need to consider if I’m planning to transfer?
Transfer Information

What majors/programs are available to me at DMACC?
Educational Programs

Who can help me decide which career suits me?
Career Resource Center

Where can I receive help in selecting my courses?
Educational Advising/Counseling Services

How much will my classes cost?
Tuition/Fees

What do I have to do to be admitted?
Admissions

Are financial aid programs available?
Financial Aid/Foundation

Is there campus housing available?
Student Services/Student Housing

Can I get a part-time or work-study job on campus?
Financial Aid/Student Employment Assistance

Is day care available for my child/children?
Child Care

If I have a learning disability, whom should I contact?
Services for Students with Disabilities

I understand DMACC offers free tutoring. How can I use this service?
Tutoring

How do I transfer credits from a different school?
Transfers to DMACC

Can I finish my high school diploma at DMACC or get a GED?
GED Testing Centers

I am new to the U.S. Is English as a second language taught at DMACC?
English as a Second Language (ESL)

Can I receive help with my course work?
Academic Achievement Center and Tutoring

Is there an easy career assessment tool to help select my DMACC program/major?
Choosing a Career Guide

For more information about services, procedures and policies at Des Moines Area Community College, pick up a copy of the Student Handbook at any Student Services office. The Handbook includes information on student rights and responsibilities, student conduct and discipline policies, parking policies, academic appeals, policies regarding tobacco, alcohol and weapons on campus and more.
PROGRAMS AVAILABLE 2009-10

ARTS AND SCIENCES AND PREPROFESSIONAL EMPHASIS

Arts & Sciences/Liberal Arts...AA/AS...All
Associate in General Studies ...AGS...All

Pre-professional Emphasis—Programs available at selected campuses

Accounting.................Law
Architecture.................Medicine
Business Administration ....Nursing
Chiropractic.................Optometry
Computer Science.........Pharmacy
Dentistry.................Physical Therapy
Education.................Physician's Assistant
Engineering...............Social Work
.................................Veterinary Medicine

VOCATIONAL AND PARAPROFESSIONAL PROGRAMS

PROGRAM \n
Biomass Operations Technology ....Certificate..........................A
Biotechnology ..................AS......A
Building Maintenance ..........Certificate..........................A,N
Building Trades..............Diploma A
Business Administration.......AA, ASA,B,C,N,U,W
Business Information Systems ..AAS....A,B*,C*,N*,U,W*
CAP-Chrysler .................AAS....A
Caterpillar Technology.......AAS....A
Chemical Dependency Counseling ..Certificate..................A,U
Civil Engineering Technology ..AAS....B
Commercial Horticulture ....AAS....B

Computer Applications ........Certificate..........................A,B,U

Computer-Aided Design Technology ....AAS, Diploma ............A

Data Entry I ....................Certificate..........................A,B,C,U

Culinary Arts .................AAS, Diploma........................A

Database Specialist ..........Certificate..........................A,W

Dental Assistant .............Diploma A

Dental Hygiene ..............AAS....A

Diemaking (See Tool & Diemaking) ..........Certificate................A

Diesel Technology ....AAS, Diploma...........................A

Dietary Manager ...............Certificate..........................A

Dietetics .....................Certificate..........................A

Production ....................Certificate..........................A

Early Childhood Education ....AS, Diploma, Certificate ............A,U*

Electrical Construction Trades...Diploma N

Electronics, Robotics & Automation ....AAS, Diploma ...........A

Environmental Science ........AA ....A,B,U

E-Commerce Design ............Certificate..........................A

Engineering ....................Certificate..........................A

Entrepreneurship ............Diploma, Certificate .................A,B*,U

Finance .......................Certificate..........................A

Fashion .......................Certificate..........................A

Fire Science Technology ....AAS....A,U*

Fitness and Sports Management ...AS ..................B
The Fluid Power AAS and Diploma program will be offered pending Iowa Department of Education approval.

PROGRAMS AVAILABLE 2009-10

CAMPUS CODES:
(A) Ankeny (B) Boone (C) Carroll (N) Newton (U) Urban/Des Moines (W) West
* Selected courses in this program are offered at this campus
AA = Associate in Arts degree AS = Associate in Science degree
AAS = Associate in Applied Science degree AGS = Associate in General Studies degree

PROGRAM ..........................................................AWARD ...........................................CAMPUS

Fluid Power Technology...AAS, Diploma.............................................A
Gerontology Specialist........Certificate..............................................A
Graphic Design..................AAS...............................................A
Graphic Sales & Customer Service.....Certificate.......................A
Graphic Technologies.............AAS, Diploma..................................A
Greenhouse Production............Certificate........................................A
Heating, AC, Refrigeration Technology....AAS, Diploma...............A
Hospitality Business..............Diploma-A
Hotel & Restaurant Management.....AAS............................................A
Human Resource Management. Certificate........................................A
Human Services..................AS, A,N*,U
Industrial Electro-Mechanical Technology....AAS..................................A,B*,C*,U
Information Processing Support......Certificate...............................A,B,C,U
Information Technology Network Admin...AAS, A,B*,C*,N*,U,W*
Interactive Media for Graphic Design ... Certificate..........................A
Interior Design Consultant..........Certificate......................................A
Interpretation & Translation.....U
Interpretation & Translation, Generalist ... Certificate........................U
Interpretation & Translation, Healthcare..Certificate...........................U
Interpretation & Translation, Judiciary....Certificate............................U
Land Surveying.................AAS B
Landscape Design...............Certificate...........................................A
Legal Assistant...........AS, Certificate............................................U
Long-Term Care Administrator....Certificate.....................................A
Machinist Technology ..........Diploma-A, N
Management ..................AA, AAS, Certificate...........A,N,B*,U*
Management Information Systems....AS...........................................A*,U
Manufacturing Technology......AAS A,N
Marketing ..................AAS, A
Medical Assistant................Diploma-A
Medical Assistant..............Diploma-A
Medical Insurance/Coding ..........Certificate.................................A
Medical Laboratory Technology......AAS............................................A
Medical Office Specialist .........AAS, Diploma....................................A
Medical Transcriptionist.........Certificate.................................A,B*,C*,U*
Microcomputers ...............Certificate............................................A,N*,U*,W*
Mortuary Science.................Advanced Standing Diploma............A
Network Security Manager.......Certificate......................................A,U

Legal Assistant ....AS ....U
Landscape Design...............Certificate...........................................A
Management ..............AA, AAS, Certificate...........A,N,B*,U*
Management Information Systems....AS...........................................A*,U
Manufacturing Technology......AAS A,N
Marketing ..................AAS, A
Medical Assistant................Diploma-A
Medical Assistant..............Diploma-A
Medical Insurance/Coding ..........Certificate.................................A
Medical Laboratory Technology......AAS............................................A
Medical Office Specialist .........AAS, Diploma....................................A
Medical Transcriptionist.........Certificate.................................A,B*,C*,U*
Microcomputers ...............Certificate............................................A,N*,U*,W*
Mortuary Science.................Advanced Standing Diploma............A
Network Security Manager.......Certificate......................................A,U

Nursing-Advanced Standing....AAS.....A,B
Nursing-Associate Degree......AAS.....A,B,C
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Office Assistant ..................Diploma-A,B,C,N*,U
Office Specialist.................Certificate.................................A,B,C,N*,U
Optometric/Ophthalmic Technician....Diploma..................................A
Pharmacy Technician ..............Diploma-A
Phlebotomy.......................Certificate...........................................A
Photography ......................Diploma-A
Printing Technologies ...........Certificate...........................................A
Respiratory Therapy...............AAS A
Retailing ..................Diploma, Certificate..........................A
Sales ..................Certificate.................................................A
Sales & Management.............Diploma-A
Secretarial Careers:
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  Medical Office Specialist ...AAS, Diploma....................................A
  Office Assistant ...........Diploma-A,B,C,N*,U
  Supervision ..................Certificate.................................A,B,N,U
  Surgical Technology .......Diploma-U
  Telecommunications Technology ....AAS, Certificate........W
  Tool & Diemaking ..........AAS, A,N*
  Turf Maintenance ..........Certificate...........................................A
  Veterinary Technology......AAS A
  Viticulture ..................Certificate...........................................A
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  Welding-Gas Metal Arc .......Certificate.................................A
  Welding-Gas Tungsten Arc ....Certificate.................................A
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Des Moines Area Community College is committed to helping you realize your educational and career dreams. Recently named one of the fastest growing community colleges in the country, DMACC provides all the courses and services you need to get started on a baccalaureate degree, or to enter the workforce after one or two years. Courses are conveniently offered day or night, weekend format, online or web-blended, or in short term blocks during Spring and summer breaks. Articulation agreements with all Iowa colleges and universities are in place if transfer is your goal; or if you are anxious to gain a skill and get into the workforce, DMACC has more than 80 career and technical programs and over 50 short term certificates from which to choose. DMACC faculty and staff work closely with Iowa businesses and industry to identify and develop programs in emerging career fields. This fall, new programs in Wind Energy, Computer Forensics, Pharmacy Technician, Optometric Technician, and Environmental science will provide students an opportunity to learn skills occupations in which there is strong employer demand. For students who wish to begin pre-professional programs, DMACC has clearly defined program tracks to begin degrees in law, engineering, education, and medicine, among others.

DMACC also has agreements with public and private universities where you can get a four-year degree without ever leaving your DMACC Campus. Or, DMACC’s agreement with Iowa State University allows you to live on campus at ISU while enrolled at DMACC full time. It’s all part of our commitment to meet your educational needs. To do so, DMACC has identified three primary goals for the next 10 years. DMACC strives to be:

• First in Quality, making sure that the programs and services to students are of the highest quality;
• First in Service, making a DMACC education accessible to all Iowans in our district; and,
• First in Affordability, providing our students a quality educational experience at tuition rates that is the most affordable within the higher education sector in central Iowa.

To meet the needs of all of our students and communities, DMACC operates six campuses in Central Iowa; two Career Academies, in Ames and Newton; and a Success Center in south Des Moines. In January, the College opened a newly constructed Health Sciences building on the Ankeny campus to provide additional classroom and laboratory space for our new and expanding health care programs. DMACC is a great place to be—and be from—as the College continues to help students, communities and businesses and achieve success. Thank you for choosing DMACC; we look forward to seeing you on campus!

Sincerely,

Robert Denson, President
PROFILE OF DMACC

History of DMACC

Des Moines Area Community College is a publicly supported two-year institution serving the Des Moines metropolitan area and surrounding counties. The College District includes all or major portions of Audubon, Boone, Carroll, Dallas, Guthrie, Jasper, Madison, Marion, Polk, Story and Warren Counties and minor parts of 11 adjacent counties. It encompasses 6,560 square miles or about 11 percent of the land area of the state. Approximately 20 percent of the state’s population resides within the district.

Des Moines Area Community College was officially created March 18, 1966, and was designated as Merged Area XI. A nine-member Board of Directors was elected and formally installed that same year.

The College was established after extensive studies had indicated the need for such an institution. Leading figures throughout the College’s District combined their talents and resources to assure proper planning for the College.

In 1968, the Board of Directors adopted Des Moines Area Community College as the official name of the institution. The first classes were held at the new Ankeny Campus location in 1968. Administrative and operational control of Boone Junior College was assumed in 1969 and Carroll Campus in Carroll, Iowa, was initiated in 1979. The Urban Campus began operation in metropolitan Des Moines in 1972, and a new facility was constructed at Seventh and Laurel in 1980. The first classes were held in the fall of 1993 at Newton as a result of the cooperative effort of Maytag Corporation, Iowa State University, the City of Newton and the DMACC Foundation. In October 2001, the state-of-the-art technology facility, West Campus, opened in West Des Moines.

Paul Lowery was the first superintendent/president of the College. Dr. Joseph A. Borgen served 20 years as the president from 1981 until his retirement in 2001. David England was the president of Des Moines Area Community College from 2001 to 2003. Robert Denson became our current president in November 2003.

Mission and Goals

It is the mission of Des Moines Area Community College to offer quality programs and courses to meet the different community interests, student abilities and personal objectives of citizens of all ages and levels of education, for the purpose of improving the quality of life, the economic conditions and the public welfare of our state.

Therefore, the Board of Directors, faculty and staff are committed to providing a variety of educational options on a nondiscriminatory, open-door basis.

DMACC exists to:

• Prepare or retrain students for employment and advancement in their chosen occupation through career education.
• Prepare or retrain students for employment and advancement through occupationally oriented associate degree programs.
• Assist students in becoming active, responsible citizens in our democratic society through a program of practical education.
• Provide effective assistance to students in exploring their interests, identifying their aptitudes and selecting the programs of study that best meet their needs and interests.
• Provide counseling and other support services that improve students’ chances for success in their educational endeavors.
• Provide learning experiences and cocurricular activities that promote personal, social, academic and vocational development of students.
• Prepare students for transfer, typically as juniors, to four-year colleges and universities.
• Provide placement services for all students seeking full-time or part-time employment.
• Provide opportunities for adults to complete their high school education.
• Provide off-campus adult and continuing education programs as needs and interests are expressed.

Nondiscrimination Policy

Des Moines Area Community College shall not discriminate on the basis of race, color, national origin, creed, religion, gender, sexual orientation, age, disability or status as a U.S. veteran. Inquiries may be directed to the EEO/AA Officer, Executive Director, Human Resources, Bldg. 1, 515-964-6301.

Student Right to Know

Institutions are required to provide students with information regarding campus security, alcohol and drug use, crime prevention, reporting of crimes, sexual assaults, Equal Employment Opportunity and Affirmative Action, college policy regarding HIV/AIDS, graduation rates and transfer data, drug-free schools and campus information. This data can be obtained at the Information Center on the Ankeny Campus and from the Provosts at all other campuses. It is also available on DMACC’s website. Des Moines Area Community College students are expected to be familiar with policies and procedures affecting their activities. Ignorance of policies and procedures will not excuse violations.

DMACC Catalog

The Des Moines Area Community College Catalog is an annual publication of information regarding fees, curricula, policies and procedures. Statements set forth in the catalog are for informational purposes and should not be construed as the basis for a contract between the institution and the student. Every effort has been made to make the catalog accurate as of the date of publication; however, the catalog is not intended to be a complete statement of all procedures, policies, rules and regulations. The College reserves the right to change by appropriate action of the faculty, college administration, Board of Directors of Des Moines Area Community College or the State of Iowa, without notice to individual students, any academic or other requirement, course offerings, programs, rules, regulations or fees.
THE CAMPUSES

ANKENY CAMPUS is located on a 304-acre site six miles north of Des Moines within the city limits of Ankeny. The campus is easily accessible from both Interstates 35 and 80. A directory of campus facilities is located at each entrance.

BOONE CAMPUS is located on a 37-acre site, at the southeast edge of the city of Boone, just north of Hwy 30. Constructed in 1968, the campus was renovated and expanded in 1995 and 2005.

CARROLL CAMPUS is located on a nine-acre site at 906 North Grant Road in the city of Carroll. The Carroll Campus was started in 1979 and finished construction of a new building in 2004.

URBAN CAMPUS is located north of I-235 at 7th and Laurel in Des Moines. The campus opened two new buildings in 2003 and opened the Charles H. Betts Building in 2004.

NEWTON CAMPUS is located at 600 N. 2nd Ave. West in Newton and began operation in the fall of 1993.

WEST CAMPUS is located west of Interstate 35 at 5959 Grand Avenue in West Des Moines. The campus opened in the fall of 2001.

Credit classes have been offered on the basis of need in other locations throughout the area and in many area high schools. Community services and continuing education classes are offered in many additional communities within the College District.

ACCESS TO CAMPUS FACILITIES

The DMACC campuses are generally open to students and the public from 7:30 a.m. to 9:00 p.m., Monday through Thursday and from 7:30 a.m. to 4:30 p.m. on Friday and 7:30 a.m. to 12:30 p.m. on Saturday. Saturday hours may vary on individual campuses. The campuses are closed during other times and holidays. Visit our website: www.dmacc.edu

DES MOINES AREA COMMUNITY COLLEGE CENTERS

In addition to the six campuses that comprise Des Moines Area Community College, the College participates in the Des Moines Higher Education Collaborative at 1200 Grand Ave. in downtown Des Moines and operates two centers:

SUCCESS CENTER

The DMACC Success Center opened its doors in October of 2002. Located on Porter Avenue on Des Moines’ south side, this center provides programming for Youth-at-Risk (YAR), English as Second Language (ESL) and Adult Basic Education (ABE) populations from the metro area and surrounding communities, and college credit courses. More information is available on the website for the Success Center at www.dmacc.edu/success/. The telephone number for the Success Center is 515-287-8700.
PROFILE OF DMACC

DMACC CAREER ACADEMY, HUNZIKER CENTER

The $5 million DMACC Career Academy, Hunziker Center opened its doors August 14, 2006. The center is located at the northwest corner of Interstate 35 and U.S. Highway 30 in Ames. Through a partnership with Story County’s seven school districts, the Academy offers career and technical programs to high school students during the day. Some of the high school educational programs include state-of-the-art labs for building trades, culinary arts, information technology, health careers, automotive technology and manufacturing technology. In the afternoon and at night, a wide variety of college-credit liberal arts courses are offered through the Boone Campus. The telephone number for the DMACC Career Academy, Hunziker Center is 515-663-6700.

ACCREDITATION

Des Moines Area Community College is accredited by the North Central Association of Colleges and Schools, 30 N. LaSalle St., Suite 2400, Chicago, IL 60602-2504. The College is also approved by the Iowa State Department of Education and the Iowa Board of Regents. College transfer curricula meet the requirements of four-year colleges and universities.

Both career option and college transfer curricula carry the approval of the United States Department of Education and are approved for veterans’ benefits. The College also holds membership in the American Association of Community Colleges.

BOARD OF DIRECTORS

Fred Buie, West Des Moines .............................................................. 9
Jeff Hall, Des Moines .......................................................................... 8
Kevin Halterman, Board Vice-Chair, Indianola ............................... 4
Jim Knott, Carroll ............................................................................... 3
Cheryl Langston, Ames ....................................................................... 1
Ben Norman, Ankeny .......................................................................... 6
Joe Pugel, Board Chair, Newton ........................................................... 5
Wayne Rouse, M.D., Boone ................................................................. 2
Madelyn Tursi, Des Moines ................................................................. 7
# CAMPUS MAPS & DIRECTORIES

## Newton Campus
(641) 791-3622 or 1-800-362-2127
Campus Code #5

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Veterans Services: Refer all inquiries to:
964-6284 or 800-362-2127 Ext.# 6284, Ankeny Campus

## Urban Campus
(515) 244-4226 or 1-800-362-2127
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Veterans Services: Refer all inquiries to:
964-6284 or 800-362-2127 Ext.# 6284, Ankeny Campus

## West Campus
(515) 633-2407 or 1-800-362-2127
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Veterans Services: Refer all inquiries to:
964-6284 or 800-362-2127 Ext.# 6284, Ankeny Campus
### 2009–2010 ACADEMIC CALENDAR

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### Fall Semester 2009
- Aug. 26, 2009: Fall Semester Begins (first day of classes)
- Sept. 7, 2009: Labor Day, No Classes, Offices Closed
- Oct. 1, 2009: Application Deadline for Fall Graduates
- Oct. 20, 2009: MIDTERM
- Nov. 4, 2009: Last Day to Withdraw from Regular Term Classes
- Nov. 26–29, 2009: Thanksgiving Holiday, No Classes, Offices Closed
- Dec. 15, 2009: Last Day of Fall Semester

### Spring Semester 2010
- Jan. 11, 2010: Spring Semester Begins (first day of classes)
- Jan. 18, 2010: Martin Luther King Holiday, Offices Closed
- Feb. 1, 2010: Application Deadline for Spring/Summer Graduates
- Feb. 26, 2010: All Staff In-Service No Classes, Offices Closed
- Mar. 8, 2010: MIDTERM
- Mar. 15–21, 2010: Spring Break, No Classes, Offices Open
- Mar. 30, 2010: Last Day to Withdraw from Regular Term Classes
- May 6, 2010: Last Day of Spring Semester
- May 6, 2010: 7:00 p.m. Ankeny/Urban/Newton/West Graduation
- May 7, 2010: 10:00 a.m. Boone Graduation
- May 10, 2010: 6:00 p.m. Carroll Graduation
- May 31, 2010: Memorial Day Holiday, No Classes, Offices Closed

### Summer Semester 2010
- May 25, 2010: Summer Semester Begins (first day of classes)
- July 5, 2010: Holiday, No Classes, Offices Closed
- Aug. 5, 2010: Last Day of Summer Semester

*These withdrawal dates are for classes that are scheduled for the full semester. Classes that are shorter in length or have a different timetable may have different deadlines for withdrawals. Consult the Registration Office for specific dates.

### Key
- Semester Begins
- Midterm
- Last day to withdraw from classes*
- Holiday-College Closed
- Semester Ends
- Spring Break
ADMISSIONS

Des Moines Area Community College is dedicated to helping individuals to reach their educational and vocational goals. Admission to the College is open to all who apply and can benefit from courses and programs offered by the College. The College does reserve the right to guide the course placement of students on the basis of counseling, examination, pre-enrollment interviews and past academic achievement. Admission to the College does not guarantee acceptance into all courses or programs offered, and enrollment in some programs and courses depends on basic skill levels and/or available space.

DMACC operates under a continuous admissions process, so acceptance of applicants is granted when admissions procedures and requirements have been completed. Therefore, applicants will find it to their advantage to apply as soon as they have decided to seek admission to a program. After meeting program entrance requirements, those students who apply to a program already at enrollment capacity will be placed on standby status until an enrollment opportunity occurs.

Each program establishes the minimum entrance requirements for applicants. Proficiency in reading, writing and/or mathematics may be required for enrollment in selected courses within a program in addition to the program admission requirements.

APPLYING FOR ADMISSION

1. Complete an admission application and submit it online or at a DMACC campus nearest you. You may request a form by calling any DMACC campus. To apply online, visit the DMACC website at www.dmacc.edu. There is no fee for applying for admission to DMACC.

2. Complete any required assessment. Assessment guidelines can be found under the heading, Guidelines for Required Assessment.

3. Complete any program entry requirements for the specific program for which application has been made.

4. Submit a copy of your high school transcript or GED scores if either is needed for entry to a specific program. For admission requirements to any specific program, refer to the Program Entry Requirements in the informational material that accompanies each individual academic program. After applicants have met all admission requirements, they will be notified. DMACC accepts students on a first-come, first-served basis. If a program is filled to capacity at the time all admission requirements are met, the applicants will be placed on standby and so notified.

GUIDELINES FOR REQUIRED ASSESSMENT

DMACC requires a skills assessment of all new, full-time students. Full-time is defined as 12 credit hours or more during Fall and Spring semesters and 8 credit hours or more during the Summer semester. This assessment provides information about students’ academic skills in reading, writing and mathematics. Assessment information is used to assist with course selection and schedule planning. The assessment requirement may be met by completing any one of the following options:

1. Complete COMPASS testing at any DMACC campus. The COMPASS tests in math, reading and writing are given to students who do not qualify under options 2 or 3.

2. Submit ACT Scores. ACT scores of 19 or above in reading, math and English can be used to meet DMACC’s assessment requirement. ACT scores must be mailed to the Admissions Office. If the ACT requirement is waived, ACT scores must be mailed to the Admissions Office. If the ACT scores are more than three (3) years old, it is recommended that students complete Option 1-COMPASS testing.

3. Provide evidence of successful college experience. An official college transcript from each prior college attended must be mailed to the Admissions Office. The following criteria are used to grant assessment waivers:

   Writing—grade of C or higher in a college-level writing course.

   Reading—grade of C or higher in 6 hours of college-level academic course work such as psychology, sociology, economics, etc., and/or vocational technical course work requiring comparable reading skills.

   Math—grade of C or higher in a college-level mathematics course.

   If college experience is older than five (5) years, students are strongly encouraged to take the COMPASS test.

   Assessment is not required if students are planning to enroll part-time, but is strongly encouraged. It is especially important in the following instances:

   1. A mathematics assessment before enrolling in a math class or a course with a math prerequisite.

   2. A writing assessment before enrolling in any course that has writing expectations or requirements.

   3. A reading assessment before enrolling in a course with substantial reading assignments. COMPASS testing is provided on all DMACC campuses. Call one of the numbers listed to make a testing appointment at the campus of your choice:

      Ankeny: 515-964-6595 or 1-800-362-2127, ext. 6595
      Boone: 515-432-5096 or 1-800-362-2127, ext. 5096
      Carroll: 712-792-1755 or 1-800-622-3334
      Newton: 641-791-3622 or 1-800-362-2127, ext. 3622
      Urban: 515-248-7218 or 1-800-362-2127, ext. 7218
      West: 515-633-2408 or 1-800-362-2127, ext. 2408

ESL TEST IN COMPASS

DMACC offers English as a Second Language ESL Test in COMPASS for students whose native language is not English. All full-time and part-time students whose native language is not English are required to take and pass the ESL Test in COMPASS as a requirement for admission. This requirement may be waived in certain circumstances based on TOEFL, ACT or IELTS scores or previous college course work. Placement in ESL courses, college preparatory courses or college-level courses is based on minimum scores. Please contact the DMACC Assessment Center at the campus nearest you for more information.

Students taking the COMPASS test who need an accommodation because of disability must provide documentation of the disability to the Special Needs Coordinator prior to the test and make the necessary accommodation arrangements with the testing center in advance of the testing date.
ADMISSIONS

ADMISSION OF HIGH SCHOOL STUDENTS
DMACC offers the opportunity for high school students to enroll in credit courses. Juniors and seniors must complete steps 1 and 2 below if enrolling as a part-time student, steps 1, 2 and 3 if enrolling full-time. Freshmen and sophomores must complete all four steps and are limited to no more than two credit courses each semester.

Admission steps:
1. Submit a completed Application for Admission.
2. Submit written approval from a parent/guardian and from a high school counselor or principal on the Permission Form for High School Student.
3. Complete COMPASS testing or submit ACT scores. Course placement is mandatory based on the COMPASS or ACT scores.
4. Meet with a DMACC advisor or counselor prior to registration.

This procedure does not apply to high school age students enrolling under the Postsecondary Enrollment Options Act, Career Advantage or other special contractual agreements except that full-time students must meet the Guidelines for Required Assessment.

ADMISSION OF PRE-HIGH SCHOOL STUDENTS
In limited circumstances, DMACC may allow pre-high school students to enroll in credit courses. Completion of all the steps listed below is necessary before the College will make a decision about admitting and enrolling any person who is not at least a freshman in high school:
1. Approval of the school counselor or principal.
2. Approval of the parent or guardian.
3. COMPASS testing or submission of ACT scores. Students not meeting minimum scores for placement in college-level courses will not be allowed to enroll. Course placement based on test scores will be mandatory.
4. Any specific course or program prerequisite must be met.
5. Students are limited to no more than two credit courses per term.

ADMISSION OF HOME-SCHOoled students
Home-schooled students may apply for admission by following these guidelines:
1. Complete a DMACC Application for Admission.
2. Provide a written statement of approval from a parent or guardian on the Permission Form for High School Student.
3. Complete COMPASS testing or submit ACT scores of 19 or better in the English, Mathematics and Writing tests.
4. The student must meet with a DMACC advisor or counselor prior to registration.

Note: Course placement is mandatory based on COMPASS or ACT results.

ADMISSION OF GUEST STUDENTS (SUMMER ONLY)
Students who have been accepted for admission at another college or university whose primary enrollment is at another college may enroll as a “guest student” at DMACC. Guest student status allows an individual to enroll as a full-time student for Summer semesters only without meeting the assessment requirements.

Guest students complete a DMACC Application for Admission and supply proof of enrollment such as an acceptance letter or a valid student ID from their primary school of attendance. Guest students who decide to enroll for a Fall or Spring semester must meet DMACC admission and assessment requirements.

Note: Guest students are not eligible for financial aid.

ADMISSION OF INTERNATIONAL STUDENTS
International students are persons in the United States who have a nonimmigrant visa including an F-1 visa. Specific requirements must be met before being admitted to Des Moines Area Community College.

No admission decision will be made until the International Student Office receives all required documents.

Deadlines for New International Students
All Applications for Admission and supporting documents must be received NO LATER THAN 60 days prior to the first day of the semester.

Semester    Deadline
Fall 2009   June 30, 2009
Spring 2010 November 12, 2009

If the paperwork is received after the deadline, DMACC will process the application for the next semester.

Example: For students who apply to attend school for the Fall semester and the documentation arrives after June 30, DMACC will process the application for the Spring semester.

Deadlines for International Transfer Students

Semester    Deadline
Fall 2009   July 11, 2009
Spring 2010 November 12, 2009
Summer 2010 March 27, 2010

INTERNATIONAL STUDENT APPLICANTS
New Full-Time International Student Applicants
New full-time international students need to obtain a Certificate of Eligibility form I-20 to receive a student visa through the U.S. Consul or Embassy in their country. The I-20 indicates that all admission requirements have been met to enter the College. This document is issued through SEVIS, the Student Exchange Visitor Information System. The U.S. Consulates make the final decision regarding whether students will be allowed to enter the United States to study.

VISIT US ONLINE: www.dmacc.edu
ADMISSIONS

All International Students must report to DMACC on or before the date stated in the I-20 forms. Late-arriving students will not be allowed to register for class.

International students requesting admission and issuance of an I-20 must provide:

1. A completed and signed DMACC International Application for Admission. Do not apply online.
2. A completed International Student Information Form.
3. A Financial Resource Statement verifying the ability of the student or the student’s sponsor to meet all educational and living expenses for one year while attending DMACC. This must be signed and sealed by a notary public or accompanied by a letter or bank statement dated within six months of the application. Financial support of approximately $16,000 (USD) is needed per year. Students who are issued an F-1 visa to study in the United States are not permitted to work off-campus unless they receive authorization from the government. There are very few opportunities to work on campus.
4. A payment of a $100 processing fee. This may be sent in the form of a bank draft or an international postal money order. Payment must be made before an I-20 will be issued.
5. An official transcript that provides evidence of graduation from a secondary school and transcripts from all postsecondary institutions attended. Photocopies may be accepted if they are properly notarized as true copies. Transcripts must be translated into English. Students who wish to transfer credits from a college or university from outside the United States to apply toward degree requirements at Des Moines Area Community College must have transcripts reviewed by a commercial service. The review must be completed at the subject analysis or catalog level. Students are responsible for the additional fees. Contact the International Student Office for further information.

The College issues an I-20 Certificate of Eligibility form after students complete the steps above (1–5) and qualify for admission.

The following items must be provided upon the student’s arrival at DMACC to complete the admission process:

6. Official evidence of English proficiency. All full-time and part-time students whose native language is NOT English are required to take and pass the ESL Test in COMPASS as a requirement for admission. This test is available at the assessment centers located on each DMACC campus. This requirement may be waived by providing any of the following:
   a. TOEFL (Test of English as a Foreign Language) score of 173 on the computer test, 500 on the paper test, or 61 on the iBT internet-based version (45 if speaking not completed) in order to enroll in credit courses. The code for DMACC is #6177.
   b. Official transcripts from an accredited United States college or university showing successful completion (‘C’ or better grade) of a college-level writing course and 6 hours of college-level academic course work requiring reading.
   c. ACT score of 19 or higher in Reading and Writing. The ACT code for DMACC is 1272.
   d. IELTS (International English Language Testing System) score of 5.0.
7. Deposit of $4,000 to cover direct educational expenses for the first semester of enrollment. This must be paid before course registration. Part of this deposit may be used to meet the cost of the required medical insurance discussed below.
8. Proof of medical insurance. Students who purchased their own medical insurance must provide proof of insurance within the first 15 days of the semester. If no proof of insurance is provided, insurance will be provided and a fee of approximately $850 per year will be assessed to the student.
9. Completion of the “Guidelines for Required Assessment” and any additional entry requirements for the program of study.

Transfer International Student Applicants

Students who apply to Des Moines Area Community College as a transfer student from a college or university within the United States must provide the same items as new students listed as 1–9 above. In addition, transfer students must submit:

10. A transfer release signed by the Designated School Official (DSO) or Alternate Responsible Officer (ARS) from their most recent school of attendance.
11. A completed DMACC International Student Transfer Form, completed by the current school’s International Student Advisor.
12. Copies of passport including the VISA pages, I-94 forms and all previously issued I-20 forms.

New Part-Time International Student Applicants

Students who are enrolled full-time at another college or university within the United States and wish to enroll part-time at DMACC must provide items 1, 6 and 12 from above, plus a copy of their student ID card from the primary school. Always apply as Liberal Arts.

All other types of applicants should contact the International Student Office.

RESIDENCY

Students may be considered for Iowa residency for purposes of determining in-state tuition if they are permanently domiciled in Iowa and have resided in the state for a period of not less than ninety (90) days prior to the start of the academic term. When residency is in question, the burden of proof of domicile is on the student. The student must apply for reclassification from nonresident to resident status prior to the start of the term for which the change is requested.

To apply for reclassification from nonresident to resident status, students must complete a “Request for Determination of Residency Status” form and submit it along with two (2) additional documents evidencing Iowa residency.
Examples of acceptable documents include:

- Iowa driver’s license
- Iowa vehicle registration card
- Iowa voter registration card
- Iowa state income tax form
- Written and notarized documentation from an employer that you are employed in Iowa
- Proof of Iowa Homestead Credit on property taxes
- Other indicators of Iowa residency, such as rent receipts, utility bills, bank statements, etc.

No two documents may come from the same source. Requests for change in residency must be submitted prior to the start of the semester for which students are registering.

Reclassification of residency is not retroactive. Noncitizens must submit proof of legal immigration status by submitting a copy of their Permanent Resident Card or I-94 page from their passport showing approved resident status by the U.S. Citizenship & Immigration Service (USCIS). International students cannot establish residency while studying in this country on a temporary visa.

Residency questions and documents should be submitted to the Registrar on the Ankeny Campus.

READEMISSION

In general, students who are in good standing and have not enrolled for one or more consecutive semesters do not need to apply for readmission to the College. Prior to registration, students must verify the accuracy of their existing information. It is recommended that students visit with a counselor/advisor to review their academic records.

Students accepted to a limited enrollment or selective admission program and who did not start when planned or withdrew for one or more semesters must contact the department chairperson to request enrollment as a “Restart” student.

Students who have been suspended due to failure to meet the College’s academic standards must meet the requirement for readmission as found in the Academic Standards section of the catalog before reenrolling.

Students who have been suspended for a disciplinary reason may not reenroll until they have met all requirements imposed at the time of suspension.

TRANSFERRING CREDIT TO DMACC

Evaluation of Previous Training and Education

Students must request that a transcript bearing the official seal and signature of the official in charge of the records be sent directly to the DMACC Admissions Office by each college or university previously attended. Transcripts that have been in the student’s possession will not be considered official documents. Transcripts must be sent from each previously attended institution even though all previous records may be summarized on one transcript. DMACC will accept credit from an institution only when submitted by the institution where the credit was earned.

Students submitting an official transcript in a language other than English must also submit and pay for an English translation of this transcript. Contact the International Student Office for more details. Upon receipt, the Admissions Office will forward official transcripts to the Credentials Office for evaluation.

A maximum of 43 semester credit hours of transfer credit is applicable toward associate degree requirements. The total grade point average GPA of credits transferred to DMACC must equal 2.0 or higher. Some programs may require a minimum grade of “C” in each course that fulfills a degree requirement. Since the student’s DMACC grade point average is calculated from course work taken at DMACC only, grades earned at other colleges or universities will not be used in the computation of the student’s GPA at DMACC.

Upon completion of the transfer credit evaluation, students can access their DMACC transcript using the web information system to view transfer award.

The acceptance and use of transfer credit is subject to limitations in accordance with the educational procedures of the College.

CREDIT FOR EDUCATIONAL EXPERIENCE IN THE ARMED FORCES

Credit earned through educational experiences in the armed forces can be validated and accepted by the College. Credit is accepted based on statewide policies at Iowa colleges and universities and based on its applicability toward meeting the requirements in the student’s program of study. An American Council on Education (ACE) publication, “Guide to the Evaluations of Educational Experiences in the Armed Services,” is generally used in making these determinations.

Credit is awarded only for significant learning experiences as recommended by the ACE guide. No credit will be awarded based on the Military Occupational Specialties (MOS) evaluation program.

Credit may be awarded for course work completed via correspondence, classroom study and/or examination through the United States Armed Forces Institute. Credit may also be granted on the basis of scores earned on the Subject Standardized Test of the Defense Activity for Non-Traditional Educational Support (DANTES). Copies of transcripts showing such work will be evaluated by the Credentials Office.

CAMPUS TOURS

Prospective students are invited to visit any or all of the DMACC campuses during “Discover DMACC Day.” Individual tours may be arranged by calling 1-800-362-2127 and selecting the campus of your choice, via the website at www.dmacc.edu and clicking on the “visit DMACC” link, or by calling the individual campus at:

- Ankeny Campus 515-965-7100
- Boone Campus 515-432-5025
- Carroll Campus 712-792-8332
- Newton Campus 641-791-3622
- Urban Campus 515-248-7236
- West Campus 515-633-2408

Students may register for courses during the times and dates listed in the schedule of classes published prior to the beginning of each semester. Registration is not complete until students have paid their tuition and fees or when payment has been officially authorized by the Financial Aid Office or Business Office. Students with past-due obligations to the College will not be permitted to register for classes until the obligations are resolved. Students may register by calling 1-800-362-2127, ext. 7100 or via the web at www.dmacc.edu /discover.htm.

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**REGISTRATION**

**REGISTRATION PROCEDURES**

**New, Full-time Students**
All new full-time students (12 credits or more each fall and spring semester or 8 or more credits summer term) should plan to attend orientation. New students who have been accepted for admission will be notified when to report for orientation and registration. Counselors and advisors will be available to assist with registration.

To help students make a successful transition to college, DMACC offers The College Experience course, SDV108. The course uses short lectures, demonstrations, guest speakers and practical exercises to help students understand the entire college experience from classroom expectations to learning resources. SDV108 is strongly recommended for students who fit these guidelines:
- Enrolled in a liberal arts, preprofessional or general education program and
- Enrolled full-time and
- Have no previous college experience

**New, Part-time Students**
New part-time students (11 or fewer credits Fall and Spring semesters, 7 or fewer credits Summer term) are encouraged to participate in orientation/registration, but are not required to do so. Registration during the time and dates published in the schedule of classes can be completed in person, by telephone, fax or via the internet.

**Continuing Students**
These students may register in person, by telephone, fax or via the internet in accordance with the times and dates published in the schedule of classes or via the internet.

**ADDING A COURSE**
Students may add a credit course through the first five days of the full-length semester. Students who add courses during this time period are advised that classes have already begun and missed classes are the same as any absence. Course adds can be made in person, by phone, fax or via the internet. Students are not permitted to attend a course unless officially registered for the course.

**DROPPING A COURSE**
Students may drop a credit course through the 50th class day of the Fall and Spring semesters and the 30th class day of the Summer term. The last day to drop a course that does not run the full length of the Fall, Spring and Summer semesters depends on the beginning and ending dates of the course; the applicable date is published in the DMACC Credit Schedule and is also available by contacting the Registration Office on any campus. Courses dropped during the first week of the semester will not show on the students’ transcripts.

Deadlines for dropping courses are different than refund deadlines. Information about refund deadlines is published in the DMACC Credit Schedule and is also available by contacting the Registration Office on any campus.

Students who have withdrawn from a course will not be permitted to continue attending the course.

Students who have a “hold” on their records due to unpaid financial obligations will be permitted to withdraw from credit courses, but will not be permitted to obtain transcripts, and graduation awards will not be conferred. In addition, students who have indebtedness may be prohibited from enrolling in courses as long as the indebtedness remains. Unpaid debts may be referred to a collection agency and/or a credit bureau. Students should contact the Student Accounts Office to resolve their debt.

Students may be administratively dropped from courses for nonattendance. Information on this procedure is contained in the Academic Information section of this catalog under “Attendance and Enrollment.”

**Dropping or Adding Courses After the Deadlines**
Students who miss the deadline for dropping a course, receiving a refund of tuition and fees, or adding a course may file an appeal asking that the deadline in question be waived. In order to appeal, students complete a Petition for Policy Waiver and submit it to their campus Student Services Office. Students must have exceptional extenuating circumstances that precluded compliance with the deadlines. Documentation must be submitted in support of the petition. Students must meet with an ombudsperson before submitting a petition. Petitions must be submitted no later than midterm of the semester immediately following the semester of enrollment. The Petition for Policy Waiver Committee reviews the petitions and notifies students of the final disposition of petitions in writing.

**NONCREDIT COURSE REGISTRATION, ADDS AND DROPS**
Registration during the time and dates published in the Continuing Education schedule of classes can be accomplished in person, by telephone, mail, fax or via the internet. Payment is due at the time of registration.
EDUCATIONAL EXPENSE/STUDENT ACCOUNTS

TUITION AND FEE CHARGES
The DMACC Board of Directors establishes tuition and fee charges. Tuition is charged on a per-credit basis. Additional supplemental fees are described below under “other fees.” Nonresident tuition, not including fees, is twice the amount of resident student tuition. See the chart on the following page of tuition and fees. The DMACC Board of Directors has the authority to change tuition and fees after the charges are published in this catalog.

OTHER FEES
Additional fees, including, but not limited to, supplemental course fees, lab fees, music fees, TV class and internet fees are also Board approved. These fees are market-driven.

DMACC ONECARD/STUDENT ID
All currently enrolled credit students will receive the DMACC OneCard from Higher One. This new student photo ID card not only serves as a picture ID confirming college enrollment and on-campus privileges such as using the library, but when used in tandem with the OneAccount, the OneCard also has all the purchasing power of the debit MasterCard® network. The DMACC OneCard also provides students a choice in receiving any financial refunds from DMACC, allowing them to get their money quicker and easier with new electronic options.

• The DMACC OneCard will be mailed to you by Higher One at your current mailing address on file with DMACC. Please verify that your address is correct on the DMACC Web Info System at www.dmacc.edu/WEBINST.asp.
• Student photos will be taken on all campuses. Please have your photo taken at one of DMACC’s campus photo sites.
• The DMACC OneCard should be activated at www.dmacconecard.com.
• Lost cards will be replaced for a fee of $20 assessed to your DMACC student account.
• Students must register their OneCard with the DMACC Libraries in order to have access to library resources. Please contact your campus library for more information.

INDEBTEDNESS POLICY
Students who have a balance due to the College should contact Student Accounts to resolve their debt. Unpaid debts may be referred to a collection agency and/or a credit bureau. DMACC uses the State of Iowa Offset Program that allows us to collect funds from tax refunds or other payments made by the State. Students with unpaid financial obligations may have a “hold” put on their record. The hold may permit students to withdraw from credit courses provided the withdrawal deadline is met, but will prohibit students from enrolling in courses, obtaining or sending transcripts, and graduating.

PAYMENT POLICY
Payment for credit class enrollment must be made by the published due date. If fees are paid by a third party or employer, it is the student’s responsibility to make sure the documentation is provided to Student Accounts prior to the payment due date. Financial Aid may hold your enrollment if all of the proper documents have not been provided to that office. A payment plan is available online with Nelnet Business Solutions (formerly FACTS). Please refer to the current Credit Course Schedule for payment due dates and payment plan options.

Important: Credit classes enrollment MAY be canceled if payment or payment arrangements are not made by the payment due date. STUDENTS are responsible for dropping classes if they DO NOT plan to attend. Please refer to the current Credit Course Schedule for payment due dates, payment plan options and the refund policy each term.

Payment for Non-Credit Continuing Education classes is required when registering.

PAYMENT BY CHECK
When you provide a check as payment, you authorize DMACC to use information from your check to process a one-time Electronic Funds Transfer (EFT) or draft drawn from your account, or to process the payment as a check transaction. When DMACC uses information from your check to make an EFT, funds may be withdrawn from your account as soon as the same day you make your payment, and you will not receive your check back from your financial institution.

If your payment is returned unpaid, you authorize the collection of your payment and a return fee of $30 by EFT(s) or draft(s) drawn from your account.

Billing Policy
DMACC students will receive their DMACC bills electronically via the students’ DMACC email addresses and any other email addresses provided. Statements may also be viewed at any time on the DMACC WebInfo System. Students can also add or change their other email address on the WebInfo System.

DEPOSITS
International students are required to pay a $4,000 deposit prior to admission to the College. This is coordinated through the International Student Office.
Students must notify the Business Office when they have deposited money available to pay tuition. At the student’s request, additional deposit money may be released for the purchase of books at the college bookstore. Students are encouraged to deposit money prior to each semester of enrollment. Call the International Student Office at the Ankeny Campus for information.

REGISTRATION PLUS+
Students who qualify by registering early may make a nonrefundable deposit of $200 as one of the options under the registrationplus+ program. Making this deposit will postpone the due date for the payment of tuition by as much as one month.

CAMPUS BOOKSTORE PURCHASES
Bookstores are located at each DMACC campus. Students should purchase books at the campus they will be attending. Online class books are available ONLY at the Ankeny Campus bookstore. Financial aid credits may be used at the bookstore after the authorized aid has been released to accounts.

VISIT US ONLINE: www.dmacc.edu 19
EDUCATIONAL EXPENSE/STUDENT ACCOUNTS

REFUNDS

Important considerations before dropping classes:
1. Students should consider consulting with an advisor or counselor.
2. Students should consider insurance issues affected by dropping classes.
3. Students should consider a possible reduction of financial aid. See the Financial Aid Recipients section of this catalog.

Student refunds are computed by using:
1. The date the Student Registration Office receives a formal drop form from the student.
2. The date the Student Registration Office receives a phone call or fax from the student requesting a class drop or
3. The date the student initiates a drop via the internet.

NOTE: Student refunds will be disbursed by Higher One according to student preference or a refund adjustment to their previous MasterCard/VISA or Discover payment.

REFUND SCHEDULE
(normal/full-length term classes only)
First Week of term ......................................100%
Second Week of term .................................100%
After Second Week of term.............. No Refund

Important:
1. Refunds for classes other than the normal full-term length will be prorated. A complete copy of the refund policy for all semesters is available at all campuses in the Business/Student Accounts Offices.

EDUCATION TAX CREDITS

Federal income tax credits are available to persons who pay higher education costs. The amount of credit is determined by the amount of qualified tuition and related expenses paid for a student and the amount of the tax filer’s adjusted gross income. For more information concerning how to qualify for these credits, call the IRS Help Line at 1-800-829-1040 or call 1-800-829-3676 and ask for IRS publication 970, Tax Benefits for Higher Education. Details are also available on the internet at www.irs.gov/individuals/students/index.html.
## EDUCATIONAL EXPENSE

### STUDENT TUITION RATE FOR CREDIT OFFERINGS

<table>
<thead>
<tr>
<th>Description</th>
<th>Rate</th>
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</thead>
<tbody>
<tr>
<td>Full- or Part-Time Enrollment (per credit) Resident</td>
<td>$115.00</td>
</tr>
<tr>
<td>Full- or Part-Time Enrollment (per credit) Nonresident</td>
<td>$230.00</td>
</tr>
<tr>
<td>Audit (per credit) Resident</td>
<td>$115.00</td>
</tr>
<tr>
<td>Audit (per credit) Nonresident</td>
<td>$230.00</td>
</tr>
<tr>
<td>Career Supplemental Noncredit Courses (per contact hour)</td>
<td>Market Rate</td>
</tr>
<tr>
<td>Continuing and General Adult Ed–Local Schools (per contact hour)</td>
<td>Market Rate</td>
</tr>
<tr>
<td>Adult High School Diploma–Course Fee</td>
<td>$100.00</td>
</tr>
<tr>
<td>Correspondence Course Fee</td>
<td>$100.00</td>
</tr>
</tbody>
</table>

Nonresident tuition is 200% of resident rate.

### FEES

<table>
<thead>
<tr>
<th>Description</th>
<th>Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Music Fee (piano/instrumental per course)</td>
<td>Market Rate</td>
</tr>
<tr>
<td>Correspondence Course Fee</td>
<td>$15.00/per course</td>
</tr>
<tr>
<td>TV Course Fee (per course)</td>
<td>$30.00/course</td>
</tr>
<tr>
<td>Lab Fees for Advanced Technology Center and Computer</td>
<td></td>
</tr>
<tr>
<td>Application Courses (per course)</td>
<td>Market Rate</td>
</tr>
<tr>
<td>International Student Processing Fee</td>
<td>$100.00</td>
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<tr>
<td>GED–Testing/Diploma</td>
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<tr>
<td>GED–Instructional Materials Fee</td>
<td>$50.00</td>
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<td>NLN Testing (per test)</td>
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<tr>
<td>Online Course Fee (per credit hour)</td>
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<tr>
<td>Web-Blended Course Fee (per credit hour)</td>
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<td>Late Registration Fee</td>
<td>$25.00</td>
</tr>
<tr>
<td>Reregistration Fee for Nonpayment</td>
<td>$25.00</td>
</tr>
<tr>
<td>Tobacco Free Violation</td>
<td>$50.00</td>
</tr>
<tr>
<td>Materials, Supplies, Lab Fees for Selected Courses (per course)</td>
<td>Market Rate</td>
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<tr>
<td>Deferred Payment Fee</td>
<td>$25.00</td>
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<tr>
<td>Returned Check Fee</td>
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### TRANSCRIPT FEES

<table>
<thead>
<tr>
<th>Description</th>
<th>Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regular Request (sent within two business days)</td>
<td>No Charge</td>
</tr>
<tr>
<td>Same-Day Service Request</td>
<td>$5.00</td>
</tr>
<tr>
<td>FAX Requests</td>
<td>$5.00</td>
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</table>

### TRAFFIC FINES

<table>
<thead>
<tr>
<th>Description</th>
<th>Rate</th>
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</thead>
<tbody>
<tr>
<td>Parking in Handicapped Stall</td>
<td>$100.00</td>
</tr>
<tr>
<td>Illegal Parking</td>
<td>$10.00</td>
</tr>
<tr>
<td>Improper Permit Displayed or No Permit Displayed</td>
<td>$10.00</td>
</tr>
<tr>
<td>Parking in Unauthorized Area</td>
<td>$25.00</td>
</tr>
<tr>
<td>Moving Violation</td>
<td>$50.00</td>
</tr>
<tr>
<td>Littering, Reckless Driving, Driving in Unauthorized Area</td>
<td>$50.00</td>
</tr>
</tbody>
</table>

Des Moines Area Community College reserves the right to change tuition, fees and fines.
FINANCIAL AID

Des Moines Area Community College Reserves the right to change tuition, fees and fines.

HOW TO APPLY FOR FINANCIAL AID AT DMACC

Financial aid at DMACC is need-based. The College believes that the financing of an undergraduate education is a partnership between the student and College, and the student should pay to the extent they are capable.

Students apply for financial aid at DMACC by filing a Free Application for Federal Student Aid (FAFSA). Eligibility for funds is based on a federal formula and each student’s financial situation, as well as DMACC’s cost of attendance. The following topics provide basic information concerning the financial aid awarding process at DMACC.

Budget Allowances

In addition to tuition and fees, allowances are made for room and board, personal expenses, books and supplies, child care and transportation in determining financial need.

Cost of Attendance

Estimated costs for a full-time undergraduate student, based on the 2008–2009 budget, are as follows:

<table>
<thead>
<tr>
<th></th>
<th>Iowa Resident</th>
<th>Nonresident</th>
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</thead>
<tbody>
<tr>
<td>Tuition and Fees</td>
<td>$3,300</td>
<td>$6,600</td>
</tr>
<tr>
<td>Books and Supplies</td>
<td>$1,100</td>
<td>$1,100</td>
</tr>
<tr>
<td>Room and Board</td>
<td>$5,302</td>
<td>$5,302</td>
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<tr>
<td>Personal/Misc.</td>
<td>$1,646</td>
<td>$1,646</td>
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<tr>
<td>Transportation</td>
<td>$2,184</td>
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</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$13,532</strong></td>
<td><strong>$16,832</strong></td>
</tr>
</tbody>
</table>

Current cost of attendance can be found at www.DMACC.edu/financial.

FREE APPLICATION FOR FEDERAL STUDENT AID (FAFSA)

One application is all it takes. FAFSA worksheets are available at all campuses. Students must access the Free Application for Federal Student Aid (FAFSA) on the Web at www.fafsa.ed.gov. Students may access the Web by using computers available in the Student Financial Aid Office located in Building 1 on the Ankeny Campus. Students may apply on the Web at www.fafsa.ed.

WHEN TO APPLY

It is necessary to file a FAFSA each year. Priority consideration will be given to students who apply by April 1 prior to the Fall term.
1. Complete the FAFSA as soon after January 1 as possible.
2. Make sure the appropriate signatures are on all forms.
3. Review all data before submitting the FAFSA. Check the student’s Social Security number and birth date. ESTIMATED tax data may be used, but it is preferred that tax returns be completed before filing the FAFSA, when possible.
4. Submit the FAFSA online.
5. When filing the FAFSA by using the Internet, it may be necessary to print the signature page and mail it to:

   Federal Student Aid Programs
   P.O. Box 4008, Mt. Vernon, IL 62864-8608

FINANCIAL AID UPDATES ON THE WEB

Once students have enrolled at DMACC and applied for financial aid, they may check on the status of their financial aid by reviewing DMACC’s student website at www.dmacc.edu. Students will need their DMACC student PIN numbers.

TO OBTAIN A DMACC PIN

To request a PIN number, or if the student has forgotten their PIN number, contact:
1-800-362-2127, ext. 6800, or 515-964-6800 or email to: info-sys@dmacc.edu.

Helpful hints section:

1. Keep together copies of all forms, letters, award notices and financial aid-related documents.
2. Include student’s name and Social Security number on all correspondence.
3. The student will be contacted by the DMACC Financial Aid Office if additional documents, such as tax returns, are needed.

TYPES OF AID (GRANTS & SCHOLARSHIPS)

Federal Pell Grants

These grants are awarded based on financial need and are available if the student has filed a FAFSA, shows financial need and does not have a bachelor’s degree. Students should contact the DMACC Financial Aid Office concerning their eligibility.

Federal Academic Competitiveness Grant

Grant assistance for students who have completed rigorous high school coursework. First-year students are eligible for $750 and second-year students are eligible for $1,300.

Students who are Federal Pell Grant eligible, are enrolled full-time, have completed rigorous high school coursework and completed high school after January 1, 2006, for the first year or January 1, 2005, for the second year. Second-year students must also meet the GPA requirement of 3.0 and have a total of 24 credit hours.

Federal Supplemental Educational Opportunity Grants (SEOG)

SEOG is available for undergraduate students who have completed and filed a FAFSA, are enrolled at least half-time and show exceptional financial need. The maximum amount is $500 for a full-time student.

Iowa Vocational-Technical Tuition Grants (IVTTG)

IVTTG Grants are available for students enrolled in vocational-technical programs. The Iowa College Student Aid Commission through notification by DMACC makes IVTTG awards. The maximum annual award is $1,200.

Iowa Grant

These grants are available to undergraduate students enrolled at least half-time who have applied for financial aid and show exceptional need. The maximum amount offered is $1,000 per academic year.
FINANCIAL AID

TEACH Grant
The College Cost Reduction and Access Act (the CCRAA), Pub. L. 110-84, created the Teacher Education Assistance for College and Higher Education (TEACH) Grant Program. This program is effective beginning with the 2008–2009 Award Year and provides up to $4,000 a year in grant assistance to students who plan on becoming a teacher and meet certain specified requirements. If a student who receives a TEACH Grant does not complete the required teaching, the grant must be repaid as a Direct Unsubsidized Loan under the William D. Ford Federal Direct Loan Program.

State of Iowa Scholarship Program
This program was established by the Iowa Legislature to provide recognition and monetary awards to Iowa’s top high school students. To be considered a state scholar, a student must: (1) meet the state’s requirements and be a designated State of Iowa Scholar, (2) be entering as a freshman at DMACC and (3) plan to enroll full-time. Students should see their high school counselor for assistance. The maximum amount is $400 for the freshman year only.

Miscellaneous Scholarships
Scholarships available from off-campus sources are posted on the Financial Aid bulletin boards on each DMACC campus.

APPLYING FOR DMACC AND OUTSIDE SCHOLARSHIPS AND GRANTS

DMACC Scholarships and Grants
The DMACC Foundation provides funds for DMACC students as scholarships and grants. Every year, the DMACC Foundation receives generous gifts from individuals, corporations and foundations. Fundraising efforts combined with earnings from the Foundation investments provide student scholarships to hundreds of students annually. These awards are awarded through a competitive application process. Most awards are based on both financial need and academic achievement, with a few based solely on academic achievement. A full listing of Foundation scholarship awards available college-wide can be found on the Foundation’s website: www.dmacc.edu/foundation.

DMACC Foundation Scholarship Program
Criteria and Conditions for DMACC Foundation Awards
- Completed DMACC Admissions Application must be on file—OR—applicant must be enrolled as a current DMACC student.
- Minimum of a 2.0 cumulative GPA for most recent coursework. Applicants with no recorded grade within the last 10 years will be exempt from this requirement.
- If awarded a scholarship, the applicant will be required to complete at least six DMACC credits and maintain at least a 2.0 GPA during the semester(s) of award.

Some awards may have higher requirements, which will be communicated at the time of award notification, if applicable.

HOW DMACC AWARDS ARE PAID
Unless otherwise stated, all awards will be applied directly to a student’s DMACC account and may be used for tuition and/or book charges at DMACC for the semester for which the award is given. Some awards are renewable for the following terms. If a recipient fails to maintain his/her original enrollment criteria or drops out before the term ends, he/she may be required to repay the DMACC Foundation.

DMACC Foundation’s Scholarship Application Process
By applying once with the general online application, eligible applicants could be chosen to receive one of more than 65 available scholarships at our six campuses. The application may be found after January 10 each year at: www.dmacc.edu/foundation/scholarships.asp. The application deadline is March 1 for the subsequent academic year. Applicants will be notified of their award status by mail, no later than June 1.

Application Components Include:
- Online form detailing personal, academic and financial information.
- One-page essay describing the applicant’s educational and career goals, volunteer involvement, achievements and financial need. Applicants should explain how they would personally benefit from receiving scholarship support, and how they value a college education.
- Grade verification.

Application Scoring will be Based on:
- 50% Essay
- 25% Financial Need
- 25% Cumulative Grade point Average

Outside Scholarships and Grants Websites
FASTWEB: www.fastweb.com
CollegeQuest: www.collegequest.com
CASHE: www.cashe.com

Tips for Applying for Outside Scholarships and Grants
- Focus on scholarships/grants with criteria that closely match the student.
- Send a self-addressed stamped envelope when requesting applications and information about scholarships/grants.
- Be aware of deadlines.

EMPLOYMENT

Federal College Work-Study Program (CWSP)
The College Work-Study Program is for students who show financial need. To be eligible, a student must be enrolled and show financial need. The College Work-Study Program offers part-time jobs on- and off-campus. Students should contact the DMACC Student Employment Assistance Office for available positions.

Community Service
Students who are College Work-Study eligible may be employed as tutors for children in reading and math. As tutors, students may work in a child care center, a school, an afterschool program or a library. Community Service opportunities are listed in the Employment Assistance Offices on all DMACC campuses.

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FINANCIAL AID

STUDY ABROAD
A student in a study abroad program is eligible for aid if the program is approved for credit by an eligible school and the student is enrolled as a regular student at the eligible school. DMACC will accept the study abroad coursework for credit. The coursework does not have to be required for the student’s degree program. DMACC must have a contractual agreement with the foreign school or a single written arrangement with a study-abroad organization to represent agreement between DMACC and one or more foreign schools. A financial aid advisor will assist you with obtaining financial aid for study abroad. Visit the Financial Aid Office on the Ankeny Campus or call 515-964-6283.

ENTRANCE COUNSELING
All first-time borrowers at DMACC are required to attend an entrance counseling session. Students may use the internet Entrance Counseling-tutorial at www.dl.ed.gov or visit the Financial Aid Office.

EXIT COUNSELING
Students leaving or graduating from DMACC must complete the Exit Counseling requirement. It is important for students to know the amount of their loans, as well as repayment options and requirements and loan cancellation provisions. Students may use the www.disservicer.ed.gov to complete the Exit Counseling requirement or visit any DMACC campus for Exit Counseling.

IOWA NATIONAL GUARD
The Iowa National Guard Educational Assistance Program may pay up to 100 percent of an eligible student’s tuition (not additional class fees) Fall and Spring semesters at DMACC. Eligible students must be active members of the Iowa Army or Air National Guard. Individuals must apply for this grant through their Guard unit commander each spring for the coming academic year. TAG notifies the Iowa College Student Aid Commission (ICSAC) of approved application. That agency notifies DMACC of the student’s eligibility and authorizes payment of the funds to DMACC.

DISLOTTED WORKERS
Adults whose jobs are being eliminated through downsizing or business closing should contact the Dislocated Worker Center in their county.

VETERANS EDUCATIONAL BENEFITS
The DMACC Veterans Services Office assists students in applying for veterans’ educational benefits, acts as a liaison between the student and the federal Department of Veterans Affairs (DVA) and serves as a resource to other DMACC departments and services. Students who could be eligible for veterans educational benefits through the VA are: former full-time-active-duty U.S. military veterans, current members of the Iowa National Guard, current members of U.S. military reserve units, participants in the VA vocational rehabilitation program, and surviving dependents and spouses of service-related disabled or deceased veterans. Application for veterans’ benefits should be completed when applying for admission to DMACC. Forms are available from the Veterans’ Office on the Ankeny Campus. The application process for new claims takes a minimum of eight weeks to complete by the DVA. Therefore, appropriate paperwork should be completed as early as possible.

DMACC is an SOC—Service members Opportunity College—and career and degree programs are approved by the DVA for VA benefits. Monthly pay rates are set by Congress and the DVA. They vary according to students’ benefits categories and are based on credit hour enrollment for each term. Further details may be obtained at the Office of Student Financial Aid/Veterans Services, Ankeny Campus, 515-964-6284, or toll-free number 1-800-362-2127 or on the Web at www.dmacc.edu/veterans.

ALTERNATIVE LOANS
Alternative loans provide low-interest loans to students and families who would not otherwise receive adequate amounts of student aid. Students may obtain additional information by calling the Financial Aid Office.

requirements for continued financial aid eligibility

SATISFACTORY ACADEMIC PROGRESS (SAP)
Federal regulations require that students maintain satisfactory academic progress in the program of study they are pursuing in order to receive financial aid. At DMACC, students must earn and maintain a minimum cumulative grade point average of 2.00. Students must also earn a minimum number of credits per semester to continue receiving aid. Financial aid includes all federal and state grants, college work-study and loans, including the Federal Direct Student Loans. Academic records will be reviewed every semester.
FINANCIAL AID

FINANCIAL AID ACADEMIC PROGRESS STANDARDS

Financial Aid Academic Progress Standards are established to encourage students to successfully complete courses and progress satisfactorily toward program completion. Students shall maintain the following academic standards to continue receiving financial aid:

1. Qualitative Measurement:
   a. During the first term a student is enrolled and receiving financial aid at DMACC, he/she must earn a minimum grade point average of 2.00.
   b. Subsequent terms will require the student to earn a cumulative GPA of at least 2.00.
   c. Acceptable grades to maintain a cumulative 2.00 GPA are: A (superior), B (above average), C (average), P (pass), T (credit by testing).
   d. If a student receives an I (incomplete), W (withdraw or dropped), X (repeats), or F (failing), he/she may receive financial aid as long as the student completes the required minimum hours for each calendar year and maintains a cumulative 2.00 GPA.
   e. Summer credits earned will be included when totaling minimum credits completed for each calendar year.

2. Quantitative Measurement:
   a. If receiving aid as a full-time student (registered for 12 or more credits), a minimum of 8 credits must be earned each regular semester (16 credits per calendar year).
   b. If receiving aid as a 3/4-time student (registered for 9, 10 or 11 credits), a minimum of 6 credits must be earned each regular semester (12 credits per calendar year).
   c. If receiving aid as a 1/2-time student (registered for 6, 7 or 8 credits), a minimum of 4 credits must be earned each regular semester (8 credits per calendar year).
   d. Minimum credits not earned will result in deficit credits. The number of deficit credits must be eliminated the next term of enrollment.
   e. During the first term a student is enrolled, minimum of 6 credits must be earned (registered for 9, 10 or 11 credits), a minimum of 4 credits must be earned each regular semester (12 credits per calendar year).

3. Warning Status
   Students will be placed on Warning Status if either the qualitative or quantitative criteria are not met. During the next term of enrollment, the student must increase his/her grade point average to a cumulative 2.00 GPA if the qualitative measurement was not met or not go deficit. If the student does not earn the minimum required credits, he/she must earn the deficit credits the next term that he/she is enrolled in addition to the minimum credits required by the next term while maintaining GPA. (Example: If a full-time student is deficient by 4 hours Fall semester, a total of 4 + 8 credits with an appropriate GPA must be maintained Spring semester.)

4. Cancellation of Eligibility
   The second consecutive term a student fails to meet one or more of the minimum progress standards, he/she will have his/her eligibility for financial aid cancelled.

5. Regaining Eligibility
   To regain eligibility for financial aid, the student will be required to regain cumulative 2.00 GPA at his/her own expense. If the student did not earn the minimum credits for which he/she received aid, the student must earn the number of deficit credits, as indicated in point 3 above, at his/her own expense. If the student is reenrolling after an absence of one or more terms and has had financial aid cancelled, the minimum qualitative and quantitative standards to regain eligibility must be met. If he/she feels extenuating circumstances prevented these standards from being maintained, an appeal may be made in writing to the Financial Aid Appeal Committee.

6. Transfer Students
   Students transferring to DMACC may have credits accepted at DMACC, but accepted credits will not be figured into the cumulative GPA. Students will be held responsible only for academic progress made at DMACC.

7. Appeals of Cancellation of Eligibility
   A student may submit a written appeal documenting extenuating circumstances that prevented him/her from meeting minimum standards. Appeal forms will be mailed with the cancellation letters. The deadline for a written appeal will be indicated on the appeal form included with the letter of cancellation. Additional forms are available at the Financial Aid Office, Ankeny Campus, and the Business Offices at the Boone, Carroll, Newton, Urban and West Campuses.

A student may be required to meet with an academic counselor before aid is finalized. Following the Appeal Committee’s meeting, students may call the Financial Aid Office concerning the Committee’s decision. In addition, a written summary of the Committee’s decision will be mailed to the individual student.

8. Duration of Eligibility
   Students who have earned two (2) Associate Degrees at DMACC will need to seek the advice of an academic counselor before receiving further financial aid.

Students who have earned 150 percent of the number of credits required to graduate in their program will need to seek the advice of an academic counselor before receiving further financial aid.

6. Transfer Students
   Students transferring to DMACC may have credits accepted at DMACC, but accepted credits will not be figured into the cumulative GPA. Students will be held responsible only for academic progress made at DMACC.

NOTE: The student’s program of study may require more credit hours than the minimums stated by this policy.

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FINANCIAL AID

REPEATING CLASSES
Financial Aid will monitor students with excessive retakes and this may result in a financial aid warning or cancellation.

When students retake a class that has a grade higher than an “F,” the credits are reduced in the semester the original class was taken. This could result in the student being short credits.

Example:
A part-time student enrolled in 7 credits gets a “D” in a 4-credit class and a B+ in a 3-credit class. In the Fall and maintains a GPA of 2.00. His status is satisfactory. If he retakes the 4-credit class in the Spring, those 4 Fall semester credits will be removed and his status will be deficit one credit and would be on warning, even if the Spring semester credits and grades were satisfactory. The credits you earn for a class you have already passed will not be counted toward the number of credits required in the Quantitative Measurement required in the Satisfactory Academic Progress.

A retake of a class that has been passed will not make up deficit credits because it only replaces the grade for credits you have earned.

NEVER-ATTENDING PROCESS
(10th day–NA)

Prior to the 10th day of class, instructors can view their class lists online and must identify students who have never attended their class. Students will receive an email indicating the classes that were reported. If they have been reported as never-attending, the student is dropped from enrollment, and the student’s financial aid is adjusted accordingly. If a balance is due, a letter is sent to the student, indicating the amount and a due date. If an error was made, the student may obtain a signature from the instructor and submit the signed email to the Registrar’s office to reenroll.

QUIT-ATTENDING PROCESS
(Midterm–QA)

Instructors are asked to report students who have quit attending. An email is sent to the student showing what classes have been reported as QA. The student must obtain the instructor’s signature and submit the signed email to the Financial Aid Office. If all instructors report a student as QA, a Return of Title IV calculation is completed. The student is dropped from his classes and receives a letter telling him of any amount he may owe to the College or Department of Education and the methods of repayment. Those students who are reported in some but not all of their classes as QA should consider dropping those courses in order to avoid receiving a failing grade.

LEAVE OF ABSENCE
A leave of absence may be granted to a student who leaves DMACC for military reasons or for jury duty. Only one leave per academic year will be allowed. The student must return by the end of the leave of absence or the student is treated as a withdrawal.

FINANCIAL AID RECIPIENTS
If any amount of tuition is paid with funds from a Title IV Program and the student withdraws during the established refund period, the Title IV program funds will be adjusted and any unearned aid will be returned in the following order: Loans: Federal Unsubsidized, Federal Subsidized and Federal Plus. Grants: Federal Pell Grant, Federal Supplemental Educational Opportunity Grant and Other Title IV programs. Under federal law, DMACC must return the funds as soon as possible, but no later than 45 days after DMACC determines the student’s withdrawal date.

RETURN OF FINANCIAL AID
Title IV Funds
A student’s financial aid is based on the number of classes the student is enrolled in and the number of days the student is enrolled in classes. When a student initiates a withdrawal from one or more classes, the amount of financial aid the student is eligible to receive is affected.

The Return of Title IV funds to the federal government is based on a calculation that determines how much aid the student is eligible to receive and how much the student is no longer eligible for, because he/she is no longer enrolled in school. This calculation is applicable until the student has completed more than 60 percent of the semester.

Once the student has completed more than 60 percent of the semester, all financial aid is considered earned.

For example:
If a student completed 10 percent of the semester, the student will have earned 10 percent of the financial assistance awarded for the semester. Any aid above and beyond the 10 percent is considered unearned and must be returned to the federal government.

Who Is Responsible for Returning the Unearned Funds?
As prescribed by federal law, DMACC is required to return the lesser of:

- The unearned amount of the financial aid; or
- An amount equal to the student’s total institutional charges for the semester, multiplied by the percentage of unearned aid.

As prescribed by federal law, the amount the student must return is:

- The unearned amount of Title IV assistance minus any funds DMACC returned.

If the student is required to repay unearned loan funds, these funds will be repaid in accordance with the terms of the promissory note. That is, through scheduled payments to the holder of the loan over a period of time.

If the student is required to repay unearned Pell and/or SEOG Grant funds, the law provides that the student is only required to return grant funds if the final grant overpayment amount exceeds 50 percent of the total grant assistance the student received for the payment period.

Any unearned grant money must be repaid by either by making arrangements with DMACC or with the U.S. Department of Education.

Example:
Bill Dollar is a returning student from Des Moines who was disappointed to have to withdraw from DMACC during the semester, particularly since he is doing very well in the 12 credit hours he is taking. Bill has to withdraw for personal reasons.

Bill was awarded the following financial aid, which was credited to his student account:

| Federal Direct Student Loan | $1,733 |
| Federal Pell Grant | 998 |
| Federal SEOG | 250 |

Total Financial Aid Awarded | $2,981
Bill completed only 11 days of classes or 10 percent of the semester. Bill's tuition and fee charges for the full semester are $1,320.00. (2009–2010 tuition rate was not available in time for Financial Aid staff to recalculate this example before printing. Please visit www.dmacc.edu for current tuition and financial aid information.)

To determine how much money must be returned by DMACC and Bill, the financial aid staff must first determine how much financial aid Bill did not earn. Since Bill only attended 10 percent of the semester, he only earned 10 percent of his financial aid. Therefore, the unearned percent of his financial aid is 90 percent.

Total Unearned Aid $2,682.90

Amount Bill Must Repay ........................$474.95

Auditing Courses

Students may enroll in most courses on an audit basis with instructor approval. Audit enrollment may be denied in select courses based on prerequisite knowledge or skills, high demand or other criteria. For example, a course with a practicum or clinical experience may not be appropriate for audit participation.

The same amount of tuition is due for audited courses as students pay to take the courses for credit. Audited courses appear on students' transcripts as students pay to take the courses for audit.

Instructors may exclude students who are not authorized to audit courses from participation in portions of the course, such as special projects. Enrollment on an audit basis does not qualify for financial aid or insurance purposes.

Academic Integrity

Academic integrity, doing one’s own work in course assignments and in tests, is one of the most important values in higher education. Receiving credit for plagiarizing or cheating violates that value. It is unacceptable for students to submit another person’s work as their own.

If students quote, summarize, paraphrase or use an author’s idea, they must acknowledge the source; otherwise they are plagiarizing. Allowing others to accept credit for work not their own in tests or in written and oral reports is also cheating. Students who plagiarize or cheat will be held accountable by their instructor and are subject to the sanctions outlined in the Academic Misconduct Procedure.

Title IV Grant Overpayment

If a student is required to repay an unearned grant (overpayment), the student will remain eligible for Title IV aid up to 45 days after the student has been notified of the overpayment. The student may resolve the overpayment by repaying the overpayment in full to DMACC, by making satisfactory repayment arrangements with DMACC, or by making satisfactory repayment arrangements with the U.S. Department of Education.

Amount of Unearned Aid $2,682.90

Multiply Percent of Unearned Aid x .90

Amount to Be Repaid $1,188.00

Bill is required to return the remaining unearned amount.

Total Unearned Aid $2,682.90

Subtract Percent of Unearned Aid $1,188.00

Amount Bill Must Repay $1,494.90

Amount and Order of Repayment

In the example, both DMACC and Bill must return loan funds. After completing the calculations and following the repayment guidelines, it was determined that DMACC should repay $1,188.00 to Bill's loan. Bill will be required to repay $545.00 to the Federal Direct Student Loan Program, through a repayment plan in accordance with the terms of his promissory note. In addition, based on the calculations, $949.90 of Bill's Pell Grant was unearned. As DMACC has already paid the total amount it owes to the loan program, Bill is responsible for paying back 50% of the Pell Grant.

Unearned Pell Grant $949.90 x .50

Amount Bill Must Repay $474.95

Visits us online: www.dmacc.edu
The deadline for changing a course from credit to audit is the same as the deadline for dropping a course. The completion of a Drop/Add form with the instructor’s signature is required. If a course has been placed on audit, it cannot be changed back to credit unless the semester has not begun and the late registration period has not passed for the course.

**GRADE REPORTS**

Final grade reports are available approximately one to two weeks after the end of a term. Students may view their grades on the Web. Progress grade reports are issued prior to midterm and the deadline for dropping classes. This report notifies students who are not progressing satisfactorily (receiving F, D-, D, D+ or C- grades) of services available to help them improve their academic performance. Students who have been reported as quit attending class are also notified.

**GRADING SYSTEM**

**Grading Scale**

The grading scale and designations for DMACC coursework are listed below. Please note that it is the option of each faculty member whether or not to incorporate the plus/minus values into their grading scale. The course syllabus should specify the grading scale.

<table>
<thead>
<tr>
<th>Letter Grade</th>
<th>Numerical Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
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<tr>
<td>A-</td>
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<tr>
<td>B+</td>
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<tr>
<td>D-</td>
<td>.67</td>
</tr>
<tr>
<td>F</td>
<td>.00</td>
</tr>
</tbody>
</table>

**Other Grade Designations:**

- W: Withdrawn/Dropped
- I: Incomplete
- N: Audit
- P: Pass
- T: Testing
- L: Life Experience

**COMPUTING GPA**

The method of computing grade point average (GPA) is as follows:

a. Multiply hours of credit in each course by the appropriate numerical value of the grade to find the quality points.

b. Total the quality points earned.

c. Divide the total quality points earned by the total number of semester hours taken (excluding courses in which a “W,” “I,” “N,” “P,” “T” or “L” was received).

**Example:**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
<th>Grade</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Composition I</td>
<td>3</td>
<td>X</td>
<td>B+</td>
</tr>
<tr>
<td>Fund. of Oral Communication</td>
<td>3</td>
<td>X</td>
<td>A</td>
</tr>
<tr>
<td>Finite Mathematics</td>
<td>4</td>
<td>X</td>
<td>C-</td>
</tr>
<tr>
<td>Intro to Computer Literacy</td>
<td>3</td>
<td>X</td>
<td>C+</td>
</tr>
<tr>
<td>Elementary Spanish I</td>
<td>5</td>
<td>X</td>
<td>D+</td>
</tr>
<tr>
<td>TOTAL</td>
<td>18</td>
<td></td>
<td>42.31</td>
</tr>
</tbody>
</table>

Divide 42.31 points by 18 semester hours = 2.350

**REPEAT COURSEWORK**

Students may repeat a course previously taken at DMACC if the course is currently being offered.

Students who fail a required course may repeat and pass that course at Des Moines Area Community College in order to fulfill graduation requirements. The repeated course must be the exact course that was taken earlier in order for the repeat procedure to apply. This privilege does not pertain to courses failed while in attendance at other colleges and universities. If a student transfers a course and then completes the equivalent course at DMACC, the DMACC course will remain on the transcript and will be included in grade point average calculation. The transfer credit will be forfeited. Des Moines Area Community College cannot make changes in the grades issued by other institutions. When a course is repeated, only the hours and the grade point value of the last grade earned will be included in calculating the grade point average. Earlier grades recorded for the repeated course will remain on the transcript record, but will be excluded from the GPA calculation. Withdrawing from a course that is being repeated and receiving a grade of “W” does not constitute a course repeat.

**GPA calculation**

<table>
<thead>
<tr>
<th>Semester Hours</th>
<th>Quality Grade</th>
<th>Quality Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>X</td>
<td>B+ (3.33) = 9.99</td>
</tr>
<tr>
<td>3</td>
<td>X</td>
<td>A (4.00) = 12.00</td>
</tr>
<tr>
<td>4</td>
<td>X</td>
<td>C- (1.67) = 6.68</td>
</tr>
<tr>
<td>3</td>
<td>X</td>
<td>C+ (2.33) = 6.99</td>
</tr>
<tr>
<td>5</td>
<td>X</td>
<td>D+ (1.33) = 6.65</td>
</tr>
<tr>
<td>TOTAL</td>
<td>18 semester hours</td>
<td>42.31</td>
</tr>
</tbody>
</table>

**Repeat Symbols**

- I: Grade value included in the GPA calculation
- E: Grade value excluded in the GPA calculation

The repeat symbol will be noted in the far right column on the transcript record next to the respective course.

**Example:**

- FL 06-07 PSY 111 D 3.00 E
- SP 07-08 PSY 111 A 3.00 I

**GRADE APPEALS**

Students should first attempt to resolve questions about grades with their instructors. If students wish to proceed further, they should follow the steps outlined in The Appeal of the Final Grade procedure. A copy of this procedure is available in any DMACC Student Service office. Students begin the process by meeting with an ombudsperson on their campus.

**Repeat, Incomplete and Failing Mark Policies**

Students unable to complete some portion of assigned course work during the regular term may sign a contract with an instructor approving an “I” (Incomplete) grade. In such cases, the students must complete the course by the mid-term date of the following term. Incomplete grades are generally not approved by instructors unless there is an extenuating circumstance such as serious injury or illness. An extension of time to complete the work for the course may be granted by the instructor until the end of the term. “Incomplete” grades automatically change to “F” grades if the course work is not satisfactorily completed within the time period specified.

Students who fail a required course may repeat and pass that course at Des Moines Area Community College in order to fulfill graduation requirements. Whenever a course is repeated, only the latter grade is included in the computation of the grade point average. Both grades will appear on the transcript. The earlier grade will be followed by the symbol (E) because that grade is excluded from the grade point average (GPA). The new grade will be followed by the symbol (I) to designate that it is included in the GPA. Withdrawing from a course that is being repeated and receiving a grade of “W” does not constitute a course repeat.
OTHER CREDIT OPTIONS AND SPECIAL OFFERINGS

Advanced Placement (AP)
This program allows students, while still in high school, to take examinations for credit at the college-level. DMACC awards credit for advanced placement through the Advanced Placement Program in art, computer science, English, foreign languages, history, mathematics, music and sciences. AP credit will be applied to the student’s permanent record as test (T) credit after a minimum of 12 semester hours of credit have been successfully completed at DMACC.

Advanced Standing Credit
A maximum of 30 semester hours of credit may be earned through proficiency examinations, military credit, national standardized tests and employment experience. Advanced Standing credit with the exception of transfer credit will be included on the student’s permanent record after 12 semester hours of credit have been successfully completed at the College. Credit will not be granted if students have successfully completed college courses representing the same content.

Alternative Methods for Obtaining Credit
Students may obtain college credit for competencies gained through formal training, work experience or certain approved examinations. Some alternative methods available include:

- Converting DMACC continuing education coursework to credit.
- Converting DMACC corporate training to credit.
- Earning credit for experiential learning through portfolio development or skills demonstration.
- Earning credit through the assessment of work experience.
- Converting certification or licensure from a state or national examination to credit.

Students should first examine the competencies for courses to determine which course or courses provide instruction in the subject area. Course competencies are available on the internet via the DMACC homepage. “Student Application for Alternative Credit” forms are available in the Dean’s or Provost’s office. Students then contact the dean or department chairperson in that subject matter area, who will determine if there is a possibility of obtaining credit and the method of assessment that may be available and appropriate for that course. Students may be required to complete a challenge test, develop a portfolio and/or provide documentation. There is a charge for awarding alternative credit. Credit for employment experience is limited to courses that meet program requirements for internship, career courses, practicum, clinical experiences, field experiences and seminars related to these types of courses. Any credit awarded through alternative means will be posted to the transcript with marks of “T” or “L.” These marks are not included in the grade point average.

Challenge Tests (DMACC Local Department Examinations)
Students who have met the entrance requirements of the College and who are matriculating in a program of study leading to a degree, diploma or certificate may take locally constructed departmental examinations for credit in certain specified areas for which they and the department feel they have the necessary preparation.

- Students may challenge-test a course only once. This can occur at any time prior to formal registration in that course or, if the students are enrolled in the course, by the designated drop date for the course.
- If the examination is requested prior to formal registration in a class, a nonrefundable fee equal to one-half the tuition for that course shall be charged. If the examination is unsuccessful, that fee may NOT be applied if student subsequently formally registers for that course.
- A course that is a prerequisite to a course that has been successfully completed cannot be challenged.
- A challenge test cannot be used as a course repeat.
- Credit earned by challenge testing is entered on students’ permanent records only when students have earned 12 credit hours at DMACC. A “T” mark is used and is not included when computing grade point average.

Students interested in taking a Challenge exam should contact the appropriate academic department for specific information on tests available and fees for testing.

Credit for Educational Experience in the Armed Forces
Educational experiences in the armed forces can be validated and accepted for credit by the College. Credit is granted based on statewide policies at Iowa colleges and universities and based on the applicability of the educational experiences toward meeting the requirements in the student’s program of study. An American Council on Education (ACE) publication, “Guide to the Evaluations of Educational Experiences in the Armed Services,” is generally used in making these determinations. Credit is awarded only for significant learning experiences as recommended by the ACE guides. No credit will be awarded based on the Military Occupational Specialties (MOS) evaluation program.

Credit may be awarded for course work completed via correspondence, classroom study and/or examination through the United States Armed Forces Institute. Credit may also be granted on the basis of scores earned on the Subject Standardized Test of the Defense Activity for Non-Traditional Educational Support (DANTES). Official copies of transcripts showing such work are required for credit evaluation by the Office of Credentials.

College-level Examination Program (CLEP)
Des Moines Area Community College will award credit based on scores obtained on the General examinations and Subject examinations. CLEP credit will not be granted if it duplicates credit for a course already taken.

A minimum of 12 semester credit hours must be successfully completed at DMACC before the CLEP credit will be applied to the student’s permanent record.

CLEP testing is available on the Ankeny Campus. Contact the Ankeny Campus Assessment Center for more information.

Cross-Enrollment
Under a special agreement, a limited number of students may enroll, tuition-free, in one course at Drake University, Grand View University or Iowa State University Fall or Spring semester, provided they are taking at least 12 semester hours at DMACC, have earned 12 semester credits (including transfer credit) and have a cumulative 2.00 GPA. This credit will be added to the DMACC transcript according to transfer credit guidelines. This agreement does not apply to Summer session.

For more information on Cross-Enrollment, contact the DMACC Registration Office at 515-964-6800.
ACADEMIC INFORMATION

High School Articulated Courses
DMACC has entered into joint enrollment agreements with some of the high schools in the district. Specific courses are offered in the high schools under curriculum guidelines jointly approved by DMACC and the high school. Credit earned through these agreements is recorded as transfer (TFR) credit.

Articulated credit is recorded on the student’s permanent record after the student has applied for admission, earned 12 credits at DMACC and paid the required fee for each course being articulated.

Independent Study
Independent study provides an opportunity for the above-average student to do independent research in areas not covered in the regular curriculum or to explore in greater depth a topic covered in a course. Each independent study project must be arranged in advance through a supervising faculty member. The standard tuition charge will be made. Independent study may not be used to earn credit for any courses listed in the College catalog or substitute for any required or option courses in a program. Each independent study may be for one to four credits. A maximum of four hours of elective credit in any one term and eight hours in total may be earned through independent study. Students may register for course work in independent study at any time during the term.

International Travel/Study Courses
DMACC faculty in a range of disciplines have traveled extensively, lived or studied in countries around the globe. Wishing to share their interest in and expertise of a particular country or region of the world, these faculty members arrange international travel and travel/study opportunities for students. Since the tours are educational travel, students may receive academic credit on designated trips. These international travel/study programs permit students to spend one or two weeks exploring a country, with additional time spent at home reading, writing and reflecting about the country they have experienced. Most travel/study courses are independent study credits issued under a global studies (GLOS) acronym. For information on the Study Abroad in England program or international travel/study courses, please contact the Global Studies chairperson at 515-965-7032.

Postsecondary Enrollment Options Act
Eligible high school students may be accepted for admission to DMACC under Iowa’s Postsecondary Enrollment Options Act.

Approval by the high school is mandatory before high school students may be accepted under this program. If the students are approved and accepted, the high school will pay up to $250 per course of the cost of the tuition, fees, books, materials and supplies. Students enrolled under this program take DMACC courses and credit is earned as DMACC credit.

For more information, contact the DMACC Registration Office at 515-964-6800.

Semester Abroad
DMACC offers students an opportunity to take selected classes in English, speech, history and humanities during a Spring semester Study Abroad in London program. The program is offered by DMACC as part of the Iowa Community College International Association’s Study Abroad Consortium. Students from all 15 of Iowa’s community colleges spend 10 weeks in London studying with an Iowa community college instructor. A British professor at the University of London teaches British Life and Culture, a mandatory course in the curriculum. Classes are held on the University of London campus. Students reside with families in local homes. In addition to lectures and class discussions, students are able to take advantage of an expanded classroom as they tour museums and historic monuments and attend live theatre performances in London and the surrounding area. Students are expected to enroll for 12 credits, which may include some independent study work. Program arrangements are made by the American Institute for Foreign Study, which specializes in study abroad programs for colleges and universities. Financial aid is available for study abroad.

SATISFACTORY ACADEMIC PROGRESS
The following applies only to credit enrollment at DMACC.

Passing grades are required in all courses outlined in the program of study. The cumulative grade point average of 2.00 in all course work applicable to the degree, diploma or certificate of specialization is required for satisfactory completion or progress.

Students who have attempted 12 or more credits with grades of A, A-, B+, B, B-, C+, C, C-, D+, D, D-, F or P at Des Moines Area Community College are subject to the following academic progress standards:

1. Satisfactory academic progress is indicated by a cumulative grade point average (GPA) of 2.00 or higher.

2. Guidelines for placing a student on “ACADEMIC PROBATION”:
   a. A student whose cumulative GPA falls below 2.00 at the end of any term will be placed on ACADEMIC PROBATION for the next term of enrollment.
   b. Students on ACADEMIC PROBATION who are assigned more than one grade of C- or less at progress report time will be restricted from registering for future credit coursework until they have developed an Educational Achievement Plan with a counselor, advisor and/or program chairperson and obtained the appropriate signatures for approval.
   c. A student on ACADEMIC PROBATION will return to a status of “good academic standing” when his/her cumulative GPA is raised to 2.00 or higher.
   d. A student on ACADEMIC PROBATION will continue on probationary status if his/her term GPA for the term following his/her placement on probation is 2.00 or higher but the cumulative GPA remains below 2.00. This same rule will apply for the next term of enrollment.
   e. The College will not award a Certificate of Specialization, Diploma or Degree to a student who has a GPA below 2.00 in his/her chosen program of study. Only grades for coursework applicable to the chosen program of study will be calculated in the program GPA.

3. Guidelines for placing a student on “CONDITIONAL ENROLLMENT”:
   a. A student on probation who earns a term GPA of less than 2.00 will be placed on CONDITIONAL ENROLLMENT for the next term of enrollment.
   b. If the student is registered for the following term and is placed on CONDITIONAL ENROLLMENT for that term, he/she will be required to meet with a counselor/advisor no later than the first day of the CONDITIONAL ENROLLMENT term to review his/her course selections. Failure to comply will result in canceled classes.
ACADEMIC INFORMATION

6. A student placed on ACADEMIC SUSPENSION may appeal. Students wishing to appeal should contact the Director of Student Development, Ankeny Campus, 515-964-6222.

STUDENT RECORDS-CONFIDENTIALITY

Student Records-Confidentiality-Family Educational Rights and Privacy Act (FERPA)

Des Moines Area Community College complies with the laws of the State of Iowa and the United States in the maintenance of, access to and release of student records. All procedures conform to the Family Educational Rights and Privacy Act (FERPA), sometimes referred to as the Buckley Amendment.

At its discretion, DMACC may provide certain information designated as “Directory Information” to the public unless students have requested that their Directory Information not be released. Directory Information is defined as: student name, address, telephone number, date and place of birth, major field of study, dates of attendance, degrees and awards received, most recent educational institution attended, participation by the student in officially recognized activities, weight and height of members of athletic teams, email address, and photograph.

With the exception of the Directory Information items listed above, all student records are considered to be confidential and are only open to designated school officials with a legitimate educational interest in the records and others as designated in the College’s FERPA procedure. Except as provided for within the Act, personally identifiable information about a student will not be released without the student’s written permission.

Under FERPA, students also have certain rights to inspect and review their education records, request amendment of their records, consent to disclosure of personally identifiable information contained in education records, and file a complaint with the U.S. Department of Education concerning an alleged failure to comply with FERPA.

To obtain copies of the procedure and more detailed information, contact the Registrar’s Office on the Ankeny Campus or refer to the DMACC Student Handbook.

TRANSFER CREDIT

A maximum of 43 semester credit hours of transfer credit is applicable toward associate degree requirements. For diploma and certificate programs, a max of 2/3 of the program credits may transfer into DMACC (1/3 of the credits must be earned at DMACC.) The total grade point average of credits transferred to DMACC must equal 2.00 or higher. Some programs, e.g., Health Service programs and Accounting Specialist, may require a minimum grade of “C” in specific courses that fulfill a degree requirement. Grades earned at other colleges or universities will not be used in the computation of students’ grade point averages at DMACC. Refer to the Admission section on the Evaluation of Previous Training and Education for more details on transcript processing and transfer credits.

TRANSCRIPT REQUESTS

Des Moines Area Community College will send or issue a transcript when students or former students submit a signed, written request or submit a request via the Web Information System.

Students can email or FAX requests to the Office of Academic Records. Transcript request forms are available at each campus, but a letter requesting a transcript will be honored.

Transcript requests should include the student’s name, Social Security number or DMACC I.D., telephone number, dates of attendance and the address to which the transcript should be mailed.

Except during peak periods, transcripts are sent within two working days after the receipt of the request. During peak periods, transcript requests are processed in the order they are received. There is no fee for transcripts unless special services are requested. In order for the transcript to be official, it must be sent directly to the receiving institution. Any copies of transcripts that are issued to students are considered to be unofficial. Transcripts will not be issued for students who have unpaid financial obligations to Des Moines Area Community College.

Students who have access to the DMACC Web Info System can view unofficial copies of their transcripts on the internet.

VISIT US ONLINE: www.DMACC.edu
ACADEMIC INFORMATION/PROGRAM REQUIREMENTS & GRADUATION

TRANSFERRING FROM DMACC TO ANOTHER INSTITUTION

• Students considering transfer to another college or university should contact an admissions or transfer counselor at that institution early in the planning process.

• The transferability of Des Moines Area Community College courses to other colleges and universities is determined by the receiving institution.

• Official college or university transcripts and high school transcripts are required during the application process. Students should request these documents from all prior schools be sent directly to the transfer institution.

• A financial aid transcript may be required from each college or university attended in order to receive aid at the transfer institution.

• Students should keep a copy of all the catalogs of colleges attended. These may be needed when discussing transfer credit.

Copies should be kept of all documents completed, as well as a record of names and phone numbers of people contacted at the transfer institution. This will help if there is a need to clarify information in the future.

Applications for most major Iowa colleges and universities and information on colleges and universities throughout the United States are available in the Career Resource Center in Building 1, Ankeny Campus.

PROGRAM REQUIREMENTS AND GRADUATION

PROGRAMS OF STUDY

Instruction is offered in a variety of courses and programs to meet the diverse needs of DMACC students. Students may engage in areas of study that emphasize:

Liberal Arts

• General Education curriculum is designed for students intending to transfer to a four-year institution. Students may also take these courses for enrichment or with the intent of concluding their education with an associate degree.

• Paraprofessional curriculum prepares students for employment in a variety of public service fields. Students may also transfer to a four-year institution.

• Preprofessional curriculum provides the recommended courses for the first two years of study in various professions.

Vocational Education

• Vocational/Technical programs are designed to teach the essential skills and operational theory needed to ensure occupational competency. Vocational/Technical programs are designed to fulfill the employment needs of the community.

Continuing Education

• Continuing Education is designed for vocational training, professional advancement, personal enrichment, physical fitness or just the pleasure of learning. Classes, workshops and seminars are designed for those to whom academic credit is not required. These courses have no tests, grades or homework.

Pre-College Programs of Study

• College Preparatory courses are designed to aid students whose educational background requires strengthening to achieve success in regular college-level courses.

• Adult Basic Education (ABE) is designed to provide individualized instruction to adults who need development or review of basic reading, language or mathematical skills. ABE services are provided to adults who are seeking high school completion, vocational advancement, further training, English as a Second Language and general improvement of everyday living skills. Classes are offered in many locations throughout the College District.

• The Adult High School Diploma program is designed for adult students seeking a high school diploma. Courses required of all students enrolled in the program are:
  • Two credits in American History
  • One credit in American Government
  • Three credits in Mathematics
  • Two credits in Science
  • Six credits in English
  • 18 credits of elective courses shall be completed to meet a minimum requirement of 32 credits.

• Paraprofessional curriculum prepares students for employment in a variety of public service fields. Students may also transfer to a four-year institution.

• Preprofessional curriculum provides the recommended courses for the first two years of study in various professions.

Vocational Education

• Vocational/Technical programs are designed to teach the essential skills and operational theory needed to ensure occupational competency. Vocational/Technical programs are designed to fulfill the employment needs of the community.

• Iowa High School Equivalency diploma is awarded by the State of Iowa through the Iowa Department of Education. Eligible adults may earn this Diploma by achieving passing scores on the General Education Development (G.E.D.) test administered by the College.

TRANSFER INFORMATION

DMACC offers the first two years of most baccalaureate degree programs. Students can attend DMACC for their first two years and earn an Associate in Arts (AA) or Associate in Science (AS) degree.

Articulation agreements and major transfer plans have been developed to assist students in transferring. Four-year colleges and universities vary in the required number and nature of preprofessional and general education courses that should be completed at DMACC.

The information included in the AA degree will change as four-year colleges/universities change their degree requirements, so students should contact the admissions office at the four-year institution they expect to attend as soon as possible after beginning at DMACC. Because other colleges can change their requirements, articulation agreements and transfer plans cannot be considered an agreement or contract between students and DMACC or its staff.

Transfer plans are available for some vocational programs to selected colleges and DMACC partners with other institutions. For example, DMACC is working with Grand View University on a business administration program that will be offered with accelerated courses in the evening.

The advisors and counselors at each DMACC campus are available to work with students in planning their programs and assisting them in making decisions for a successful transfer. The following information is available for students:

• Transfer Plans for different majors at various colleges/universities

• General articulation agreements between DMACC and colleges/universities

• College/university catalogs

• Admission applications for some colleges/universities

• Dates of visits from college/university admission representatives

• Transfer scholarship information

Admissions Partnership Program (APP)

Students interested in transferring to Iowa State University are encouraged to participate in the Admissions Partnership Program (APP).
PROGRAM REQUIREMENTS & GRADUATION

APP will help students experience a smooth transition between DMACC and ISU. Staff from the selected college will facilitate this transfer by:

1. Assigning students to both DMACC and ISU advisors to help select appropriate coursework.
2. Inviting students to participate in ISU programs and activities appropriate to their major.
3. Assisting students with their transition to ISU.

For more detailed information and program requirements, contact any DMACC counselor or advisor.

COURSE SUBSTITUTIONS

On a limited basis, students may request course substitutions in their programs of study. Course substitution is defined as “the replacement of one course with another.” Course substitutions will be allowed only:

• In clearly warranted situations, such as a scheduling conflict beyond the student’s control.
• When the student clearly demonstrates knowledge/competency in the subject area for which the substitution is requested and when such knowledge/competency is accurately assessed through measures such as testing, documentation of prior course work, or certification.
• When the substituted course reflects similar or complementary content/skills.
• As a reasonable accommodation for a student with a disability. (See the procedure titled Reasonable Accommodations for Applicants for Admission and Students with Disabilities.)

Noncore courses may not be substituted for courses designated as core requirements for a particular academic award. Adjunct courses may not be used to meet degree requirements other than electives. In programs exceeding twenty-four (24) semester credit hours, no more than one-eighth (1/8) of the total number of credits may be substituted. In programs of fewer than twenty-four (24) semester credit hours, only one (1) course of up to four (4) semester credit hours may be substituted.

Students who wish to request a course substitution should contact the program chairperson in their area of study.

GRADUATION REQUIREMENTS

Students must satisfy the requirements in effect at the time of enrollment in their program or the requirements in effect at the time of graduation.

If program requirements are not satisfied within five years of the first term of enrollment in their program of study, students can no longer use those requirements effective at the time they initially enrolled in their program and must complete the program requirements effective at the time of their graduation.

All requirements of the chosen program must be satisfied, although adjustments may be made where program curriculum has changed and courses are no longer available. It is the responsibility of the students to know and to observe the requirements of their curriculum and the rules governing academic work.

If students have an unpaid debt to the College, graduation awards will not be conferred.

Degree Audit

Students may visit the credentials/graduation office or mail requests to receive reports of their progress toward completion of requirements for their programs of study. Students are encouraged to request a Degree Audit at least one semester prior to their planned graduation date to assist with planning their final semester. Some programs’ degree audit reports are available via DMACC’s web information system.

Application for Graduation

Candidates for graduation must complete applications for graduation in order to receive their academic awards. Students who do not complete requirements for graduation in the term for which they applied must submit new applications. Students who plan to participate in one of the annual commencement ceremonies indicate their intent on the application for graduation. There is no graduation fee. Students who plan to receive more than one associate degree, diploma or certificate need to complete graduation applications for each program.

Candidates for graduation should submit their applications to the credentials/graduation office at the Ankeny Campus or the Student Services Office at the other DMACC campuses by the following dates:

- Fall .................. October 1
- Spring ............... February 2
- Summer .............. June 1

(If students plan to participate in the annual commencement ceremonies)

General Education

General Education integrates curricula in all degree and diploma programs at DMACC. It focuses on the knowledge and skills necessary for the understanding and effective application of many fields that include written/oral communications, pure/applied science, mathematics, social/behavioral sciences and humanities. The essential importance of general education remains a central principle in curriculum development at Des Moines Area Community College. Students will acquire skills for lifelong learning by:

Commencement Ceremonies

Students who graduate at the end of Fall, Spring or Summer terms are invited to participate in the annual commencement ceremonies in May. Participation in commencement ceremonies is free. Ankeny, Newton, Urban and West Campuses have a combined commencement ceremony. The Boone and Carroll Campuses have individual ceremonies.

Diplomas and Academic Awards

Diplomas are mailed to students approximately three to four weeks after final grades are posted. Students seeking degree verification may request a copy of their transcripts showing the degree and date awarded from the Transcript Office. Transcripts may be ordered prior to the end of the term to be sent once grades and graduation status are finalized. There is no charge for transcripts unless special services are requested.

GRADUATION HONORS

Phi Theta Kappa

Phi Theta Kappa is a national scholastic honor society for students at two-year colleges. There are chapters on all DMACC campuses. Membership may be conferred upon students who have completed at least 12 semester hours of course work with a 3.5 grade point average in courses that apply toward a two-year associate degree program. In addition, potential members must have high moral character and desirable qualities of citizenship and leadership. Interested students should contact the Phi Theta Kappa advisor at their campus for details about their campus chapter.

Graduation with Program Honors

Candidates for graduation who earn a cumulative grade point average of at least 3.50 in course work applicable to their program of study will graduate with program honors.

GENERAL EDUCATION

General Education integrates curricula in all degree and diploma programs at DMACC. It focuses on the knowledge and skills necessary for the understanding and effective application of many fields that include written/oral communications, pure/applied science, mathematics, social/behavioral sciences and humanities. The essential importance of general education remains a central principle in curriculum development at Des Moines Area Community College. Students will acquire skills for lifelong learning by:

VISIT US ONLINE: www.dmacc.edu 33
1. Understanding and demonstrating effective communication.
   a. Write organized, clear and grammatically correct English, appropriate to purpose and audience.
   b. Read a document and demonstrate an understanding of its content, such as drawing inferences and distinguishing between major ideas and supporting detail and between fact and opinion.
   c. Present an organized oral message, appropriate to purpose and audience, using correctly spoken English.
   d. Listen attentively, respectfully and sensitively to a message and demonstrate an understanding of the message.
   e. Work collaboratively.
   f. Use technical communication effectively.

2. Understanding and demonstrating logical and critical thinking.
   a. Develop reasoned and thorough arguments.
   b. Analyze the arguments of others, distinguishing fact from opinion and identifying assumptions and inferences.
   c. Recognize and value the existence of different points of view.
   d. Analyze the conditions of a given problem and design solutions to it.
   e. Develop research techniques and acquire knowledge of bibliographic citation.

3. Developing an understanding of fundamental scientific principles and their application.
   a. Demonstrate an understanding of basic scientific principles.
   b. Apply scientific principles to analyze and solve problems in nature, culture and society.
   c. Make informed decisions, as citizens, on matters of public policy related to science.

4. Developing an understanding of fundamental mathematical principles and their application.
   a. Obtain correct mathematical results with or without technological assistance.
   b. Develop logical thinking skills that permit the selection of models appropriate to problems.
   c. Express models numerically, graphically and symbolically.
   d. Identify, interpret and manipulate relevant data.

5. Developing an understanding of human society and cross-cultural variation and perspective.
   a. Demonstrate an understanding of social and behavioral sciences and their application to the study of cultural diversity.
   b. Demonstrate an understanding of social and behavioral sciences and their application to the study of global cultures.

6. Developing a knowledge of and appreciation for the human condition as expressed in works of human imagination and thought.
   a. Demonstrate a fundamental knowledge of history, philosophy, literature or the arts.
   b. Demonstrate an understanding of the impact of human expression on culture and of culture on human expression.
   c. Recognize the significance of historical context to culture and human expression.

DEGREES AWARDED
DMACC awards the Associate in Arts (AA), Associate in Science (AS), Associate in Applied Science (AAS) and Associate in General Studies (AGS) degrees plus Diplomas, an Advanced Standing Diploma and Certificates of Specialization. Course availability varies by campus.

Degrees
The requirements for the AA, AS, AAS, AGS degree, the Diploma, the Advanced Standing Diploma and the Certificate listed below represent the minimum content required in any program offering these degrees at Des Moines Area Community College. Specific programs may and often do require additional course work. Students must refer to the programs of study, which are approved by the State Department of Education and published in this catalog. For specific programs, see the program section for course requirements.

Associate in Arts Degree (AA)
To receive an AA degree, students must:
1. Maintain a 2.00 grade point average on all work applicable for the AA degree.

2. Earn at Des Moines Area Community College a minimum of 1/3 of the semester credit hours applicable to the degree being pursued. No more than 43 transfer semester credit hours may be applied toward the degree.

3. Complete the final 10 semester credit hours at DMACC (or petition to the Registrar for, and receive, an exception).

Complete a minimum of 64 semester credit hours.

4. Include at least 48 semester credit hours of core courses.
   • Communications .......................... 9 credits
   • Social & Behavioral Sciences ........ 9 credits
   • Math & Sciences ......................... 9 credits
   • Humanities .............................. 9 credits
   • Distributed Requirements ............ 12 credits

5. Include at least 16 semester credit hours of elective credit.
   a. Students may include no more than 16 semester credit hours of vocational/technical credit.
   b. Students may have up to 8 semester credit hours of independent study courses; a limit of 4 semester credit hours of independent study may be earned in any single semester.

For specific programs, see program section for program requirements and course listing.

Associate in Science Degree (AS)
To receive an AS degree, students must:
1. Maintain a 2.00 grade point average on all work applicable for the AS degree.

2. Earn at Des Moines Area Community College a minimum of 1/3 of the semester credit hours applicable to the degree being pursued. No more than 43 transfer semester credit hours may be applied toward the degree.

3. Complete the final 10 semester credit hours at DMACC (or petition to the Registrar for, and receive, an exception).

4. Complete a minimum of 64 semester credit hours.

5. Include at least 28 semester credit hours of core courses.
   • Communications .......................... 9 credits
   • Social & Behavioral Sciences ........ 6 credits
   • Math & Sciences ......................... 6 credits
   • Humanities .............................. 6 credits
   • Distributed Requirements ............ 3 credits
   • Technical Elective ........................ 4 credits
6. Include at least 36 semester credit hours of elective credit.
   a. Students may include 16 semester credit hours of vocational/technical credit.
   b. Students may have up to 8 semester credit hours of independent study courses; up to 4 semester credit hours of independent study may be earned in any single semester.

For specific programs, see program section for program requirements and course listing.

**Associate in General Studies Degree (AGS)**

To receive an AGS degree, students must:
1. Maintain a 2.00 grade point average on all work applicable for the AGS degree.
2. Earn at Des Moines Area Community College a minimum of 1/3 of the semester credit hours applicable to the degree being pursued at DMACC. No more than 43 transfer semester credit hours may be applied toward the degree.
3. Complete the final 10 semester credit hours at DMACC (or petition to the Registrar for, and receive, an exception).
4. Complete all required courses in a particular program of study. (Minimum of 64 semester credit hours.)
5. Satisfy the following AGS degree requirements:
   a. Communications—3 credits
      ENG 105, ENG 106, ENG 108, COM 703, ADM 157
   b. Social & Behavioral Sciences/ 
      Humanities—3 credits
      AGB 101
      ANT 100, 105
      ART 101, 184, 186
      ASL 151, 181, 251, 291
      DRA 101
      ECN 120, 130
      FLA 141, 142, 241, 242
      FLC 141, 142, 241, 242
      FLF 151, 152, 241, 242
      FLG 141, 142, 241, 242
      FLI 141, 142, 241, 242
      FLS 151, 152, 241, 242, 181, 281
      GEO 111, 125, 124
      HIS 112, 113, 150, 153, 257
      HUM 120, 116, 121
      LIT 101, 142, 110, 111, 185, 166, 188, 193, 130, 190
      MGT 145
      MUS 100, 102, 202
      PHI 101, 110, 105
      POL 111, 112, 121, 125, 171
      PSY 102, 111, 121, 241, 251, 261
      REL 101
      SOC 110, 115, 120, 200
   c. Mathematics or Sciences—3 credits
      ENV 115, 116, 145
      BUS 211 or MAT 157, BUS 112
      CHM 105, 122, 132, 165, 175, 263, 273
      ETE 106, 108
      MAT 110, 114, 116, 121, 141
      MAT 157 or BUS 211
      MAT 162, 166, 130, 129, 211, 217, 219, 227, 772, 773
      PHY 106, 160, 161, 213, 223, 710
   d. Distributed Requirement—3 credits
      Choose one course from a, b or c above or
      SPC 101, 126 or ELT 368.

**Diploma**

To receive a diploma, students must:
1. Maintain a 2.00 grade point average on all work applicable for the diploma.
2. Earn at DMACC a minimum of 1/3 of the semester credit hours applicable to the degree being pursued.
3. Complete the final 10 semester credit hours at DMACC (or petition to the Registrar for, and receive, an exception).
4. Complete all required courses in a particular program of study. (Minimum of 30 semester credit hours.)
5. Complete the following AGS general degree requirements:
   - One Communications course
   - One Social & Behavioral Sciences or Humanities course
   - One Math or Science course

Course options for the above AGS general degree requirements are listed in specific programs of study.

**Advanced Standing Diploma**

To receive an advanced standing diploma, students must:
1. Prior to entry into the program, complete
   - An associate degree or at least 64 semester credits of college-level course work from an accredited institution of higher education.
   - One Communications Core course
   - One Social & Behavioral Sciences or Humanities Core course
   - One Science Core course
   - One Math Core course
2. Maintain a 2.00 grade point average in all work applicable to the advanced standing diploma.
3. Earn at DMACC a minimum of 1/3 of the semester credit hours applicable to the advanced standing diploma being pursued.
4. Complete the final 10 semester credit hours at DMACC (or petition to the Registrar for, and receive, an exception).
5. Complete a minimum of one general education course as part of the program of study.

**VISIT US ONLINE: www.dmacc.edu 35**
6. Complete all required courses in the particular program of study, which will include a minimum of 30 semester credit hours.

**Certificate of Specialization**

To receive a certificate, students must:

1. Maintain a 2.00 grade point average on all work applicable for the certificate.
2. Earn at DMACC a minimum of 1/3 of the semester credit hours applicable to the certificate being pursued.
3. Complete the number of semester credit hours required in a particular program of study.
4. Complete all required courses in a particular program of study.

**Certificate of Completion**

A certificate of completion is issued to signify that a student has satisfactorily completed a program of instruction other than those listed above. Certificates are normally issued to students at the completion of a specific short-term program of study offered through the Continuing Education Department or the Transportation Institute.

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**STUDENT SERVICES**

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**ACADEMIC ACHIEVEMENT CENTERS**

The Academic Achievement Centers located on each campus are available to all full-time and part-time students in the following categories:

1. Students seeking assistance with college course work, especially in the areas of math, science, English, reading and study skills.
2. Adults working toward high school completion (GED or adult high school diploma) or completing a program of basic literacy skills (ABE).
3. Students pursuing studies for academic upgrading, prerequisites or enrichment.

Instructors will diagnose academic skill levels, establish individual programs of study and assist in the learning process. Students progress at a pace based on ability, interest, needs, and time available for learning. Computer services are also available in the Academic Achievement Centers. These services include various educational and support programs in many areas and a computer-based educational system (PLATO). Contact the Academic Achievement Center at each campus for additional information.

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**ALUMNI ASSOCIATION**

Des Moines Area Community College has an active Alumni Association. Headed by a volunteer Board of Directors, the Association strives to maintain contact with and provide services and benefits to alumni and friends. Through annual fundraising activities, the Association provides scholarships to deserving DMACC students. For more information or to get involved, contact the Alumni Association Office at 515-965-7331, via email at alumni@dmacc.edu or online go.dmacc.edu/alumni/pages/welcome.aspx.

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**ACADEMIC ADVISING**

Academic advisors are available to assist students in planning their educational programs, meeting graduation requirements, further developing their academic skills and using resources of the College to meet their educational needs. Assistance is given in selecting a transfer institution and the transferring of credits.

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**ASSESSMENT CENTERS**

The COMPASS assessment is available for current and prospective students at each of the six DMACC campuses. Please call for an appointment.

<table>
<thead>
<tr>
<th>Campus</th>
<th>Phone Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ankeny Campus</td>
<td>515-964-6595</td>
</tr>
<tr>
<td>Boone Campus</td>
<td>515-433-5098</td>
</tr>
<tr>
<td>Carroll Campus</td>
<td>712-792-8303</td>
</tr>
<tr>
<td>Hunziker Center</td>
<td>515-663-6700</td>
</tr>
<tr>
<td>Newton Campus</td>
<td>641-791-3622</td>
</tr>
<tr>
<td>Success Center</td>
<td>515-287-8700</td>
</tr>
<tr>
<td>Urban Campus</td>
<td>515-248-7218</td>
</tr>
<tr>
<td>West Campus</td>
<td>515-633-2408</td>
</tr>
</tbody>
</table>

DMACC offers English as a Second Language (ESL Test in COMPASS) tests for students whose native language is not English. All full-time and part-time students whose native language is not English are required to take and pass the ESL Test in COMPASS test as a requirement for admission. Placement in ESL courses, college preparatory courses or college-level courses is based on minimum scores. Please contact the DMACC Assessment Center at the campus nearest you for more information.

In addition, the Ankeny Assessment Center offers ACT, LSAT, MPRE, PRAXIS, Medical Assistant and Medical Office Specialist typing test, Veterinary Technology biology test, mechanical reasoning aptitude test and the Iowa Dental Board test.

The Boone Assessment Center also offers CLEP testing.

The West Campus provides VUE Certification tests.

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**CAMPUS SECURITY**

Law enforcement and security are provided to help ensure the safety and security of our campuses. DMACC provides 24-hour/7-day security officer patrol of the Ankeny Campus. At the Urban Campus, security officer patrol is 7 a.m. to 10:30 p.m., Monday through Thursday; 7:00 a.m. to 3:00 p.m. Friday; and 8:00 a.m. to 12:30 p.m. Saturday. Security measures may include uniformed security guards, closed circuit-television, building security systems, exterior lighting, courtesy phones, and attention to landscape materials. In addition, the Ankeny, Des Moines, Boone, Carroll, Newton and West Des Moines Police Departments patrol and assist the College in their respective jurisdictions. DMACC Security personnel administer traffic and parking regulations, ensure safety and security, and provide assistance to the College community.

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**CAREER AND TRANSFER RESOURCE CENTER (CTRC)**

The CTRC on the Ankeny Campus offers assistance and informational resources to students, prospective students and career changers, for all stages of career planning. The CTRC has up-to-date information about hundreds of occupations. There are many resources available about Iowa’s two-year and four-year colleges and universities, as well as information on colleges throughout the United States. Students will find tips and information for transfer planning. CHOICES, a computerized career-guidance system, is an excellent resource.

Appointments are preferred, but walk-in assistance is also available.

The CTRC resources will enable students to learn about job requirements, job trends and salaries. Students will be better prepared for making decisions about school majors and costs. Career planners will organize personal interests and skills for making better choices. Call for appointment at 515-964-6474.

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**CHILD CARE**

The DMACC Child Development Center on the Ankeny Campus provides child care for the children of students, staff and faculty. Children ages 2–5 are eligible for child care during
STUDENT SERVICES

normal College business hours. Children must attend on a full- or part-time, regularly scheduled basis. The child care center is open year-round on student contact days only. There is generally a waiting list. To request an application or for more information, call 515-964-6588.

Children should not be brought to class or left unattended at any time in a classroom, at clinical sites, or on College property.

COLLEGE BOOKSTORES

The College bookstores are located at all DMACC campuses to serve students, faculty and staff. In addition to course requirements, the bookstores stock supplemental study aids, paper products, office supplies, calculators, cassette recorders, computers and computer supplies, imprinted gift items and up-to-date college fashions.

Hours of operation vary at each campus. Check with each bookstore for more information.

During the first week of each semester, hours will be extended to accommodate evening and weekend students. During student breaks, all bookstores will close early and hours will be posted.

A receipt is required for a full refund or exchange of any textbook. Textbooks may be returned within seven days from the beginning of each semester, as long as the textbook is in the same condition as when purchased. Check with the bookstore for further details of the Bookstore Return Policy. Materials purchased with a check require seven days before a refund will be processed.

Students whose books do not qualify for a refund are encouraged to use our everyday buyback. Check with the bookstore about further details regarding the Buyback Policy.

Textbook purchases should be made at the campus location of your class. Online orders can be picked up at any DMACC Bookstore location. Please allow two extra business days for the transfer. Online class book purchases may be made through the DMACC website www.dmacc.edu/student_services/bookstore.asp. Online class books are available ONLY at the Ankeny Campus bookstore. MasterCard, VISA and Discover charge cards are accepted. A picture ID is required when writing a check in the bookstore. Students with prewritten checks from parents must also present a picture ID. Checks must be written for the amount of purchase only and payable to DMACC Bookstore.

Picture IDs are required for all Financial Aid and Voucher purchases.

COUNSELING SERVICES

The College provides professional counselors to assist students in career and educational planning and in solving problems of a personal nature. Counselors help students make decisions and plan for a successful future. Counselors are available to help students choose an educational program or career direction, recommend and interpret career tests and inventories, examine mid-career options, discuss anticipated academic difficulties and develop an appropriate course of study.

Students who experience difficulty or dissatisfaction with their curriculum are encouraged to make use of the counseling services to explore options or an alternative course of action. Counselors can also provide assistance with study skills, developing satisfying personal and social relationships, solving financial problems and getting through a crisis.

Counseling services are available to assist all students including those in evening classes and at off-campus sites. Contact the most convenient campus for further information.

COLLEGE PREPARATORY EDUCATION

College Preparatory Education offers a variety of academic and personal support services to help students succeed in reaching their educational and career goals. These services are particularly designed for students who need to strengthen their academic skills before enrolling in college-level courses.

Staff are available to counsel and advise students prior to registration and during their enrollment. Instructional services provided by the program include a career planning course and preparatory courses in reading, writing, mathematics and study skills. Although credits from the college preparatory courses do not count toward a degree or diploma, they do help students fill in any gaps in the skills needed for success in college-level courses. The Academic Achievement Centers provide the following support services to students enrolled in college preparatory courses: tutoring, individualized instruction, homework help, assessment of basic skills and vocational interest, and academic planning

FOOD SERVICES

Vending machines are available at each campus. The Ankeny, Boone, Urban/Des Moines and West Campuses have food services where food is prepared on site. For formal dining, the Culinary Arts students on the Ankeny Campus operate the Bistro, located in Building 7.

RECREATION AND WELLNESS PROGRAMS

Fitness and intramural sports opportunities are available for students at Des Moines Area Community College. Facilities are located in Building 5 on the Ankeny Campus and on the Boone Campus. A schedule of intramural events and rules for participation are available online and in the Recreation & Wellness Center on the Ankeny Campus. Free fitness classes and discounted personal training services are also available to currently enrolled DMACC students on the Ankeny Campus. All currently enrolled DMACC students as well as card-carrying alumni are eligible to utilize the Recreation and Wellness Center. Basketball, volleyball and other court sports as well as fitness classes take place on the gym floor. A walking/running track is also available in the gym. The fitness center houses a variety of cardiovascular and strength training equipment. Locker rooms and shower facilities are also available. Locker rentals and towel services are available for a nominal fee per semester. The gym is also available for rentals. See staff for details.

The facility hours are posted online at https://my.dmacc.edu/sites/RecreationWellness/default.aspx and are subject to change. Guests are welcome for a $2.00 fee. Family members and other guests are welcome as long as they are accompanied by a valid DMACC student or eligible alumni. No children under 12 years of age are allowed in the fitness center. Patrons must follow all posted facility rules. For more information and current hours of operation, contact 964-6333.

INTRAMURAL RECREATION

Intramural sports are available for students, faculty and staff on the Ankeny and Boone Campuses. Opportunities exist year-round for both individual and team recreational sports and activities. Applications for participation are available online at https://my.dmacc.edu/sites/RecreationWellness/default.aspx and in the Recreation and Wellness Center in Building 5 on the Ankeny Campus.
STUDENT SERVICES

INFORMATION CENTER

The main DMACC Information Center is located in Building 1 on the Ankeny Campus. The Center is designed to help students, prospective students and visitors to the College. Material is available on all College programs, current course listings and general DMACC information. Information can also be obtained at the Student Life or Student Development/ Counseling & Advising offices of the Boone, Carroll, Newton, Urban and West Campuses. Contact 964-6200 or 1-800-TO-DMACC.

STUDENT EMPLOYMENT ASSISTANCE

Services include: lists of job openings (full-time and part-time) available in the area; assistance to students wanting to obtain work in the College Work-Study Program; referrals for internship and summer employment; on-campus recruitment and interviews by employers; labor market information, resource videos and books, and a list of helpful websites for research from home.

Individual assistance with resume writing, application letters, interviewing and job-seeking skills is readily available.

Also available is a free online employment service to help students find careers that match their degrees: www.iowacareer.net. To register for assistance, go to www.dmacc.edu/student_services/job_placement.asp.

For further information, contact the Ankeny Student Employment Assistance Office (515-964-6463), or the Student Services Offices on the Boone, Carroll, Newton, Urban and West Campuses.

LIBRARIES

Library services are provided at the Ankeny, Boone, Carroll, Newton, Urban and West Campuses. The DMACC Libraries’ website provides access to information from any computer on the College network at www.library.dmacc.edu. Off-campus access to our electronic resources is available to patrons who have registered their DMACC OneCard with the Libraries.

The DMACC Libraries are full members of the Online Computer Library Center, Inc. (OCLC), an internationally recognized bibliographic utility, which provides important products and services to libraries and their users. DMACC is a member of the Polk County Biomedical Consortium, a group of health science libraries affiliated with the National Library of Medicine. DMACC also participates in the State Library of Iowa’s Open Access program, which allows our cardholders to borrow materials from other participating libraries. Materials not owned by the Library can be obtained through Inter-Library Loan (ILL) services at no charge to the user.

Ankeny Campus

The Ankeny Campus Library has 40,000 volumes in the book collection, 200 periodical subscriptions and 3,000 videos and other audiovisual materials. The collections emphasize subjects related to the College curriculum, including the humanities, social sciences, natural and health sciences, business and technology. Interlibrary loan service is available at no charge to DMACC students and staff for books and articles not owned by our libraries. Other services include reference assistance, coin-operated photocopy groups, group study rooms, video viewing area, and library orientation sessions. In addition, at least one section of Library Instruction (SDV 171) is offered on campus each semester.

Boone Campus

The Boone Campus Library has a collection of approximately 19,000 circulating and reference books, 175 periodical subscriptions, compact discs, audio books and a large collection of videos. Material not owned by the Library can be obtained through interlibrary loan at no charge. It also participates in the Open Access program through the State Library. The Library also provides access to the 40-station student computer lab at the Boone Campus. In addition, a Library Instruction class (SDV 171) is offered by the staff each semester.

Carroll Campus

The Carroll Campus Library has a collection of approximately 4,000 circulating and reference books, more than 100 periodical subscriptions and a variety of audio-visual materials, including DVDs, videotapes, compact disks and audio books. In addition, DMACC Libraries Online provides access to all the DMACC campuses’ library catalogs, research databases containing full-text reference sources for academic and popular periodical articles and other online information resources, electronic books and audio books. Beyond the DMACC libraries, we provide access to InterLibrary Loan (ILL) to obtain materials not owned by the College. There is a special collection of curriculum materials, especially for use by the 2 + 2 Elementary Education program. Additionally, the library provides access to a student computer lab where students can work on assignments using Microsoft Office 2007, search the web or conduct research using library resources.

Newton Campus

The Interactive Learning Center (ILC) at the Newton Campus houses a growing collection of academic, research and leisure reading books, as well as a number of periodical, newspaper and audiovisual titles. Students may conduct online research via the DMACC Library website (www.library.dmacc.edu) at the computer stations located in the ILC or from their home computers. The ILC also houses instructor reserve materials and is the designated location for students to take makeup exams and quizzes. Students enrolled in telecourses may view telecourse videotapes for these courses in the ILC. Students may borrow materials housed at any of the other DMACC libraries by processing an interlibrary loan request at the ILC.

Urban Campus

The Urban/Des Moines Campus Library is a full-service academic library. The print collection supports courses, research and activities at the Urban/Des Moines Campus. Areas of particular strength in our collection include African-American history, multicultural topics, environmental science, surgical technology and paralegal education. In addition to our print periodical collection, patrons with a valid library card have online access to thousands of journals and articles. Items not owned by the Urban/Des Moines Campus Library can usually be obtained through InterLibrary Loan. This service is provided without charge to DMACC students, faculty and staff. Professional librarians are available to provide reference services. Upon instructor request, the librarians are available to provide library orientations or other research-related instruction. A one-credit library instruction course (SDV 171) is offered each semester by the Urban/Des Moines librarians. The library has a self-service photocopier and viewing stations for watching a/v items. In addition to these services, the Urban/Des Moines Campus Library contains a Library Research Lab. When not in use for library instruction, the 25 computers in this room are available for student use.

West Campus

The Interactive Learning Center (ILC) at West Campus will assist students in accessing the resources available through the Ankeny Campus and other participating libraries.


**STUDENT SERVICES**

**SERVICES FOR STUDENTS WITH DISABILITIES**

DMACC is committed to providing an accessible environment that supports students with disabilities in reaching their full potential. Support services are available for students who have visual, hearing, mobility, learning or other types of disabilities to ensure equal access to educational opportunities. Specialized software, adaptive equipment, alternative testing, classroom accommodations and sign language interpreting are examples of the support services offered.

DMACC employs a Disability Services Coordinator to work with students to develop and coordinate services based on individual student need.

If you are a student with a disability who requires reasonable accommodation to participate fully at DMACC, follow the steps listed below.

1. Contact the Disability Services Coordinator at (515) 964-6850 V, (515) 964-6809 TTY or the counseling and advising office on any of the six campuses for an Application for Accommodation.

2. Submit the completed application and supporting documentation to:

   - Des Moines Area Community College
   - Attention: Disability Services Coordinator
   - 2006 South Ankeny Boulevard, Bldg. 6-10b
   - Ankeny, Iowa 50023-3993

3. Schedule a time to meet with the Disability Services Coordinator, counselor or advisor to discuss coordination of these services.

4. Contact the Disability Services Coordinator with any questions during this process.

**STUDENT HOUSING**

For student housing options and area apartment information, please refer to www.dmacc.edu/student_services/housing.asp. For more information about student housing at the Boone Campus, contact the housing liaison, Steve Krafcisin, at 515-433-5026. For information about the independently owned and operated housing on the Ankeny Campus, contact the manager of Campus View Apartments at 515-964-7474. The College Information Center in Building 1 of the Ankeny Campus also provides information about other housing options near the Ankeny and Urban Campuses.

Information about housing for the Carroll, Newton and West Campuses is available from the Student Services Offices at the respective campuses or on DMACC’s website.

**TESTING CENTERS**

The Testing Center provides a site for makeup testing when students have missed class on a test day. The center also serves as a site for administering correspondence tests for courses taken at other institutions and challenge tests for DMACC courses.

Students must arrange with their instructors to have tests sent to a Testing Center. When students arrive to take their exams, they must present a picture identification, such as a driver’s license, and know the instructor’s last name. For Testing Center hours, students should contact the Information Desk at the Newton Campus, the Assessment Center at the Ankeny Campus, the Academic Achievement Center at the Boone or Urban Campuses or the Learning Resource Center at the West Campus.

**VOCATIONAL REHABILITATION COUNSELING**

Through an agreement with Iowa Vocational Rehabilitation Services, a vocational rehabilitation counselor is assigned to the College to provide rehabilitation services to eligible students with disabilities. Individualized services to help the student achieve his/her vocational goals are identified in a jointly developed written rehabilitation plan. Vocational rehabilitation counseling is provided to eligible students by a professional counselor who has expertise in disability and vocational areas.

**STUDENT HANDBOOK**

For more information about services, procedures and policies at Des Moines Area Community College, pick up a copy of the Student Handbook at any Student Services office. The Handbook includes information on student rights and responsibilities, student conduct and discipline policies, parking policies, academic appeals, policies regarding tobacco, alcohol and weapons on campus and more.
STUDENT ACTIVITIES

ACTIVITY ROOM
The Activity Room is available for students on the Ankeny Campus. Located in Building 5, the Activity Room provides a space for students to relax, study, and play various games in a lounge-like setting. Games include pool, ping pong, and various arcade games. The games are provided by Playin Around Games. For more information, contact Recreation & Wellness at 964-6333.

DMACC CHOIRS
The DMACC music program offers students the opportunity to participate in a variety of choral music ensembles. Concert Choir (MUS 143; 2 credits) is offered on the Ankeny and Boone Campuses. The rehearsal schedule is not the same on both campuses, but is always shown in the current DMACC semester course schedule. Concert Choir is open to anyone without an audition; however, it is expected that students who enroll will have the ability to learn and sing the voice part to which they are assigned. Chamber Ensemble (MUS 150; 1 credit) is offered to everyone on the Ankeny Campus by audition only. Auditions are held the first two days of the Fall and Spring semesters. All students who want to sing in Chamber Ensemble must audition every semester. Students who are accepted into Chamber Ensemble may also sing in Concert Choir. Choral music credits may be used toward DMACC degrees as electives for four semesters, but there is no limit to the number of times singers may register for the ensembles. Volunteer choral ensembles, which are open to any DMACC student who can learn and sing choral parts, are organized on the Ankeny Campus on a semester-to-semester basis. These are promoted on flyers posted in many Ankeny Campus buildings. Anyone wanting more information may contact the choral conductor in Building 5, Room 41 on the Ankeny Campus or by checking with the Student Services Office on the Boone Campus. Ankeny Campus maintains its internet presence at www.dmacc.edu/music/.

DMACC DRAMA
The DMACC drama program offers students the opportunity to gain practical experience in theatre production on the Ankeny and Boone Campuses. Students can earn college credit in a variety of areas, including acting, lighting, costumes, directing, promotion and scenery work. Annual playwriting contests for students may allow them to see their work produced on campus.

INTERCOLLEGIATE ATHLETICS
Student athletes may compete on a national level at the Boone Campus. DMACC is a member of the Iowa Community College Athletic Conference (ICCCAC) and the National Junior College Athletic Association. Currently, the College offers women’s intercollegiate athletics in basketball, cross country, volleyball and golf, as well as men’s intercollegiate athletics in basketball, baseball and golf on the Boone Campus.

STUDENT ACTIVITIES COUNCIL
The Student Activities Council, as the primary student body representative, is an integral part of the College. Through its work, students are provided an opportunity to participate in the democratic process. Meetings are held on a regular basis. The Council serves as a liaison between the administration, faculty, staff and student body in areas of mutual interest. The purpose of the organization is to promote college spirit, provide a focal point for discussions between students and the College staff and to give students a representative voice in college affairs. Any student, administrator or faculty member may attend meetings of the Student Activities Council and take part in discussion, but only members may vote.

STUDENT ACTIVITIES
Much of a student’s growth is the result of participation in activities and student organizations. It is the philosophy of the College that curricular activities complement the academic program. The activities are financed by a portion of the service fee that is charged each term in addition to regular tuition. Student representatives elected to the Student Activities Council are responsible for assessment and disbursement of these funds.

STUDENT CENTERS
Student lounge and recreation areas are provided for student use during nonclassroom hours. Various types of game equipment are available, and food and beverage facilities are located in or near each of these areas.

STUDENT ORGANIZATIONS
Students are encouraged to participate in student organizations. Students may form a new organization by contacting the Student Activities Coordinator on their respective campus for information. Most recognized organizations fall into one of the following classifications:

1. Preprofessional and departmental organizations are joined by students wishing to pursue interests that contribute to the development of career fields.
2. Service organizations have as their primary purpose activities that will contribute positively to the College and the community.
3. Scholastic honorary organizations offer membership on the basis of academic excellence and performance.
4. Special interest organizations are planned by students who desire to develop or broaden their interest in some particular aspect of their lives.

STUDENT PUBLICATIONS
On the Boone Campus, students publish The Banner and on the Ankeny Campus students publish The Chronicle. On the Urban Campus, students publish The Urban Vibe. These are student newspapers that emphasize news, features, entertainment, sports and college events. For additional information, contact the publications advisor at the Ankeny, Boone or Urban Campuses.

TICKET SALES
Discounted tickets to various activities and attractions are available at the Student Activities office at Ankeny, the Advising Office at Carroll, or the Business Offices at Boone, Newton, Urban and West Campuses. The Ankeny Campus offers discounted tickets to Civic Center events, Worlds and Oceans of Fun, Adventureland Park, Ankeny Springwood Theater, Copper Creek Theater in Pleasant Hill, Woodland Hills Golf Course, Carmike Movie Theaters, Iowa Energy, Buccaneers and Iowa Stars hockey in Des Moines. The Carroll Campus offers discounted tickets to Adventureland Park, Carroll Community Theatre, Worlds/Oceans of Fun, and Carroll Theater V discounted tickets. Urban Campus offers discounted tickets to Adventureland Park, Carmike Theaters and discounted bus passes for Metro Transit Authority. Ticket offerings vary at the Boone, Newton and West Campuses. Check in the main offices for details. Cash and personal checks are accepted at all campuses. Credit cards are accepted at the Urban Campus.
DMACC BUSINESS RESOURCES (DBR)

Des Moines Area Community College Business Resources (DBR) provides businesses, governmental agencies and nonprofit organizations with the training and consulting they need to optimize performance through improved employee and managerial skills. DBR provides a broad spectrum of training services, including technical training in manufacturing and maintenance, management and supervisory skills, employee workplace skills, organizational change, and waste management and control. From needs assessment to the customized design and implementation of training programs, DBR consultants ensure that schedules and budgets are met. Training can be provided at the business, on one of our six campuses in Central Iowa, online, or at any other convenient location.

CONTINUING EDUCATION AND SPECIALIZED PROGRAMS

ADULT BASIC EDUCATION ABE/HSE/ESL

The Adult Basic Education Program (ABE) provides opportunities for adults in need of literacy skills and refresher basics in reading, writing and math. ABE classes are offered at various locations in and around Des Moines and in cooperation with local schools and organizations. Individualized instruction allows students to focus on their immediate needs. ABE classes are provided free of charge.

GED classes, or High School Equivalency (HSE) preparation, provide instruction to prepare adults for the General Education Development Test (GED) and earn the High School Equivalency Diploma. Individual and small-group instruction allow students to progress through the five subject areas evaluated on the GED exam. These include: Test 1, Writing Skills; Test 2, Social Studies; Test 3, Science; Test 4, Reading; and Test 5, Math.

DMACC GED Testing Centers:
DMACC Ankeny Campus
DMACC Boone Campus
DMACC Carroll Campus
DMACC Urban Campus

DMACC Newton Campus
DMACC Success Center
DMACC West Campus

ENGLISH AS A SECOND LANGUAGE

English as a Second Language is a program for people who speak, read and write best in a language other than English and desire to improve their use of the English language. DMACC offers English as a Second Language (ESL) COMPASS tests for students whose native language is not English. Starting in the 2008–2009 academic year, all full-time and part-time students whose native language is not English are required to take the ESL COMPASS test as a requirement for admission. Placement in ESL courses, college preparatory courses or college-level courses is based on minimum scores. Please contact the DMACC Assessment Center at the campus nearest you for more information, or call 515-287-8700 or 800-362-2127, ext. 8700, or check our website www.dmacc.edu/success/.

CONFERENCE AND EVENT PLANNING SERVICES

The DMACC campuses provide an ideal location for your meetings, workshops or conferences.

DMACC provides event planning services including:
- Experienced conference planning staff
- Documentation of mandatory professional Continuing Education
- Registration services
- Marketing and brochure development
- Facility and meal planning
- Consulting services
- Campuses—Auditorium Seating, AV & Satellite downlink
- Free parking
- ADA–compliant

Call DMACC for your conference planning needs: 1-800-362-2127, ext. 6214, or 515-964-6214.

CONFERENCE CENTER–NEWTON

The DMACC Newton Conference Center is located on the DMACC campus in Newton, Iowa. Serving groups from 5 to 350, the DMACC Newton Conference Center offers a 325-seat, state-of-the-art auditorium, a 4,800-square-foot subdividing banquet room, reception area and breakout rooms.

Parking is conveniently located at the facility, with access to complete food and beverage service, audio/visual equipment and other conference services.

For further information, please contact the conference center staff at 641-792-1850.

DISTANCE LEARNING

Distance learning provides alternative delivery of credit classes throughout the district, state and nation. College credit classes are provided via Online Courses utilizing the World Wide Web, the Iowa Communications Network (ICN) and through television courses carried on Mediacom Cable, College Channel 16. For more information, see the Distance Learning Homepage at www.dmacc.edu/online or call 515-964-6422.

Noncredit and continuing education opportunities are also available through online classes. For more information regarding noncredit and continuing education classes offered online, call 515-964-6699 or 800-362-2127, ext. 6699.

VISIT US ONLINE: www.dmacc.edu 41
Continuing Education & Specialized Programs

Evening/Weekend College
Courses offered evenings and weekends provide opportunities for degree completion, career development/enhancement and cultural enrichment, in both credit and continuing education format, for students who are unable to take classes during the day.
The Evening/Weekend office provides support to the full range of services offered for students, faculty and staff during evening and weekend hours. These include Registration, Student Accounts, Limited Financial Aid, Student Records and Admissions. Support is also provided for the Distance Learning classes and Continuing Education courses. For further information on the Ankeny Campus, call 515-964-6286 or 1-800-362-2127, ext. 6286.
For services available at the Boone, Carroll, Newton, Des Moines Urban and West Campus in West Des Moines, call their main campus numbers. Evening counselor and advisor appointments available 4:00–7:00 p.m., Monday–Thursday.

Transportation Institute/Commercial Vehicle
Commercial Vehicle Operator Program
The Transportation Institute commercial vehicle operator program is one of approximately 50 in the U.S. certified by the Professional Truck Drivers Institute.
The 240-hour, noncredit program uses the U.S. Department of Transportation Model Curriculum. Students may complete the program in the daytime in six weeks or during the evenings in 12 weeks.
The Institute provides customized programs and services to individuals and companies including: remediation and evaluation services, advanced driver programs, Defensive Driving Course (DDC), driver/dispatcher relationships and driver retention programs. It also offers a Train the Trainer Program that allows carriers to train their driver finishers, ensuring a higher success rate with their student program and online Web-based course for DOT-mandated entry-level driver certification.

RV Safety and Education Program
RV Safety students become confident when traveling in situations they may encounter in the RV lifestyle after receiving training in all phases of driving, maneuvering and backing a recreational vehicle. The RV program is a total of eight hours—three hours in the classroom and five hours of hands-on driving. Additional driving time and private lessons are available.
The program specializes in safety, respect, patience and confidence in a variety of vehicles of all sizes from class A, B and C motor homes, to fifth-wheel trailers to travel trailers.
We also have RV (Recreational Vehicle) training and educational programs aimed at present and prospective RV drivers to provide the best information and training possible about RVs and the RV lifestyle. DMACC is the second school, nationwide, to offer this RV training.

Motorcycle/Moped Safety Rider Courses
Basic Motorcycle Safety Rider Course
The MSF Basic Rider Course is based on years of scientific research and field experience. It teaches fundamental skills. It provides basic entry-level skills for a new rider to begin practicing and developing the mental and motor skills important for safe street operation. The Basic Rider course is a combination of five hours of classroom and 10 hours of on-motorcycle instruction.

Moped Rider Course
Learn how to operate and care for a moped.
Learn about rights and responsibilities as a moped operator. Participants must be 13 years or older to take this course.
Accounting

- Accounting Information Systems
- Accounting Paraprofessional
- Accounting Specialist
- Accounting & Bookkeeping
- Accounting Certificate I
- Accounting Certificate II

Administrative Assistant/Legal/Secretarial Careers

- Administrative Assistant
- Legal Assistant
- Medical Office Specialist
- Office Assistant
- Medical Insurance & Coding
- Medical Transcriptionist
- Information Processing Support
- Office Specialist
- Supervision

Automotive/Diesel

- ASEF—General Motors
- ASSET—Ford
- Auto Collision Technology
- Auto Mechanics Technology
- CAP—Chrysler
- Caterpillar Technology
- Diesel Technology
- Auto Chassis & Power Train
- Auto Engines & Tune-Up
- Auto Maintenance & Light Repair
- Maintenance (Diesel)

Agribusiness

- Agribusiness
- Veterinary Technology
- Agronomy
- Animal Science
- Farm Management
- Sales and Service

Art

- Graphic Design
- Photography
- Air Brush Art
- Corel Painter
- Interactive Media for Graphic Design

Biology

- Biotechnology
- Environmental Science

Business

- Business Administration
- Fashion/Design
- Marketing
- Management
- Entrepreneurship
- Mortuaries
- Sales and Management
- Human Resource Management
- Interior Design Consultant

Building Trades

- Heating, Air Conditioning & Refrigeration Technology
- Architectural Millwork
- Building Trades
- Electrical Construction Trades
- Building Maintenance

College Transfer—Liberal Arts

- Associate of Arts
- Associate of Science

Community Services

- Early Childhood Education
- Criminal Justice
- Fire Science Technology
- Human Services
- Digital Forensic Investigation
- Fire Specialist
- Chemical Dependency Counseling

Computer Information Systems

- Business Information Systems
- Information Technology/Network Administration
- Management Information Systems
- Computer Applications
- Computer Languages
- Database Specialist
- Data Entry I
- E-Commerce Design
- Microcomputers
- Network Security Manager

Culinary Arts, Hotel Management, Dietary Manager

- Culinary Arts
- Hotel & Restaurant Management
- Hospitality Business
- Dietary Manager
- Enology
- Viticulture

Drafting/Design

- Architectural Technology
- Computer Aided Design Technology

Engineering & Electronics Technology

- Civil Engineering Technology
- Electronics, Robotics & Automation
- Electronics Systems Servicing Technology
- Land Surveying
- Telecommunications Technology

Fitness

- Fitness & Sports Management

Health Professions

- Aging Services Management
- Associate Degree Nursing (RN)
- Advanced Standing Nursing (RN)
- Dental Hygiene
- Medical Laboratory Technology
- Respiratory Therapy
- Dental Assistant
- Licensed Practical Nursing (LPN)
- Medical Assistant
- Optometric/Ophthalmic Tech
- Pharmacy Tech
- Surgical Technology
- Adult Services
- Emergency Medical Tech Basic (EMT-B)
- Gerontology Specialist
- Long-Term Care Administrator
- Phlebotomy

Horticulture

- Commercial Horticulture
- Greenhouse Production
- Landscape Design
- Turf Maintenance

Interpretation & Translation

- American Sign Language
- Interpreter Training
- Interpretation & Translation, Generalist
- Interpretation & Translation, Healthcare
- Interpretation & Translation, Judiciary

Manufacturing

- Fluid Power Technology
- Graphic Technologies
- Industrial Electro-Mechanical Technology
- Manufacturing Technology
- Tool and Diemaking
- Machinist Technology
- Diemaking
- Welding
- Biomass Operations Technology
- Digital Publishing
- Graphic Sales & Customer Service
- Printing Technologies

Visit us online: www.dmacc.edu
Choose a Career Path

The following steps may help you identify a program of study if you are uncertain of a career path.

Complete this Personal Career Profile. Check the items from each category listed below that describe you. Understanding your interests, values, skills and talents is helpful information when selecting a successful career and work environment.

**Values**
The most important values for the workplace are:

- [ ] To influence others
- [ ] To help others
- [ ] To compete
- [ ] To think creatively
- [ ] To be flexible
- [ ] To acquire knowledge/skills
- [ ] To be physically challenged
- [ ] To have power/prestige
- [ ] To be financially secure
- [ ] Other ____________________

**Skills**
The skill areas I most like to use are:

- [ ] Reasoning
- [ ] Communicating
- [ ] Investigating
- [ ] Hands-on
- [ ] Organizing
- [ ] Managing
- [ ] Analyzing
- [ ] Working with details
- [ ] Initiating
- [ ] Working under pressure
- [ ] Working as a team
- [ ] Serving the customer
- [ ] Other ____________________

**School Subjects**
The subjects I did well in and enjoy are:

- [ ] Office courses
- [ ] Math
- [ ] English
- [ ] Science
- [ ] Social Sciences
- [ ] Fine Arts
- [ ] Computers
- [ ] Business courses
- [ ] Voc/Tech, e.g., construction, mechanics
- [ ] Family/Consumer Science
- [ ] Foreign Language
- [ ] Other ____________________

**Interests**
The interest areas I enjoy most are:

- [ ] People
- [ ] Things (hands-on)
- [ ] Data
- [ ] Ideas
- [ ] Other ____________________

**Other areas to consider are:**
Special awards received
Enjoyable work experience
Hobbies
Clubs and organizations
Special talents

Take the information you circled and write a statement that may help summarize your career profile.

My career profile is:

___________________________________________
___________________________________________
___________________________________________
___________________________________________
___________________________________________
___________________________________________
___________________________________________
___________________________________________
___________________________________________
___________________________________________
___________________________________________

44 DES MOINES AREA COMMUNITY COLLEGE CATALOG 2009–2010
Are you a match?

Skills, values, interests and subjects that are specific to program areas at Des Moines Area Community College are listed below. Use that information with the Personal Career Profile in Step 1 to help you find a match. Continue on your path with Step 3 and Step 4. Complete the “Are You a Match?” activity. Compare the items you identified in your “Personal Career Profile” to the items checked in the “Are You a Match?” activity. If there is a match, you may want to explore programs offered within that division. Select the programs that appear to meet most of the items you checked in both activities.

Arts & Sciences–College Transfer
- Need credit in an academic area to enter a four-year plan of study
- Want to improve your skill in a certain academic area
- Want to explore courses to determine areas of interest
- Interested in problem-solving, decision-making and critical thinking skills
- Interested in learning about the arts and humanities
- Interested in learning about people, culture and social issues
- Want to use written and oral communication skills

Business & Information Management
- Have organizational and accuracy skills
- Operate computers and other business machines
- Help customers
- Work with detailed forms, records and claims
- Manage a business
- Persuade others
- Enjoy using numerical concepts
- Enjoy business/office subjects
- Like working as a team member
- Have good communication skills

Industrial Technology
- Enjoy working with data
- Like to install/repair/service equipment
- Enjoy operating equipment
- Like math
- Have good problem-solving skills
- Like computers
- Work alone
- Like vocational technical classes
- Customer service skills

Agricultural/Natural Resources
- Like to work outdoors
- Have knowledge in science
- Would enjoy growing and selling horticulture products
- Would enjoy managing a farm or livestock operation
- Enjoy finding solutions to problems
- Prefer physical activity
- Managing/marketing an ag-related business

Health
- Like to help people
- People trust me
- Enjoy biology, chemistry or physics
- Like working a flexible schedule
- Like to work with the sick or injured
- Think critically and creatively
- Can be physically demanding
- Like to work with data
- Use math principles in practical situations

Hospitality
- Enjoy preparing food
- Use math principles in practical situations
- Like working with the public
- Comfortable working a flexible schedule, sometimes under pressure

Public & Human Services
- Can take the initiative
- Be involved in helping people with personal problems
- Help people in legal situations
- Work with small children
- Persuade individuals to take certain actions
- Have good communication skills
- A team player
- Have flexible schedule
- Like social science courses

Schedule an appointment with the program counselor/advisor at the campus offering the program(s) that interest you. This appointment will provide you with more details about the program and its requirements and will help confirm your program choice.

Contact the counseling/advising staff at the campus you plan to attend for more in-depth career assistance if needed. The Ankeny and Urban Campuses can also provide additional resources and services through their Career Resource Centers.
**PROGRAMS AVAILABLE**

## Liberal Arts and Sciences

The Liberal Arts and Sciences division of the College offers traditional college freshman/sophomore courses in communications, humanities, math, science and social sciences. It provides Liberal Arts and preprofessional courses; paraprofessional courses in disciplines such as biotechnology, criminal justice and human services; courses for preprofessional preparation; selected general education courses for vocational programs; and remedial courses in mathematics, reading and writing for students who need academic assistance before undertaking college-level work. Students who graduate with an A.A. or A.S. degree are expected to demonstrate the ability to think and to communicate effectively both orally and in writing; to use mathematics meaningfully, not just punch in numbers on a calculator; to understand the modes of inquiry of the major disciplines; to be aware of our culture and of other cultures and times; to achieve insights gained through experience in thinking about ethical problems; to develop the capacity for self-understanding and problem-solving; and finally, to gain sufficient depth in some field of knowledge to contribute to society.

### DMACC students will acquire skills for lifelong learning by:

1. Understanding and demonstrating effective communication.
2. Understanding and demonstrating logical and critical thinking.
3. Developing an understanding of fundamental scientific principles and their application.
4. Developing an understanding of fundamental mathematical principles and their application.
5. Developing an understanding of human society and cross-cultural variation and perspectives.
6. Developing a knowledge of and appreciation for the human condition as expressed in works of human imagination and thought.

## Professional Preparation

Des Moines Area Community College offers a wide range of preprofessional preparation designed to prepare students for transfer to four-year colleges and universities. Graduates are awarded the Associate in Arts or Associate in Science degree with a major in Liberal Arts.

Four-year colleges and universities vary in the required number and nature of preprofessional and general education courses that should be taken during the freshman and sophomore years. The recommended preprofessional curricula listed on the following pages should be used only as suggested guidelines.

Students who have determined which profession they plan to enter should become familiar with the specific course requirements of the four-year institution to which they plan to transfer. Then with the help of an academic advisor or counselor, students can develop a curriculum best suited to satisfy their particular transfer objectives.

### Examples of professional preparation (pre) programs available include:

<table>
<thead>
<tr>
<th>Accounting</th>
<th>Architecture</th>
<th>Business</th>
<th>Chiropractic</th>
<th>Computer Science</th>
<th>Dentistry</th>
<th>Education</th>
<th>Engineering</th>
</tr>
</thead>
<tbody>
<tr>
<td>Law</td>
<td>Medicine</td>
<td>Nursing</td>
<td>Optometry</td>
<td>Pharmacy</td>
<td>Physician’s Assistant</td>
<td>Social Work</td>
<td>Veterinary Medicine</td>
</tr>
</tbody>
</table>

## Associate in Arts Degree (AA)

The Associate in Arts Degree provides the courses of study equivalent to those offered to freshman- and sophomore-level students attending any four-year college/university. If students receive the AA from DMACC, this degree, in most cases, will meet the lower division requirements of four-year colleges/universities and will admit them to junior status level. The degree requirements consist of both their general education requirements and elective courses to be used in preparation for a major area of study.

Students should contact the specific institution to which they wish to transfer regarding any unique requirements of that institution. The DMACC Advising and Counseling staff can also assist students with the transfer process. (See transfer tips in the Tips for Student Success section of the catalog.)

### College transfer work is offered in the following disciplines:

Many four-year colleges/universities have joined with DMACC to develop articulation agreements and specific major transfer guides to assist students. Students should visit personnel from each college for the most current information.

### AA degree requirements

To receive an AA degree, students must:

A. Maintain a 2.0 grade point average on all work applicable to the AA degree.
B. Earn a minimum of 1/3 of the semester credit hours applicable to the degree being pursued at DMACC. No more than 43 transfer semester credit hours may be applied toward the degree.
C. Complete the final 10 semester credit hours at DMACC (or petition to the Registrar for, and receive, an exception).
D. Complete a minimum of 64 semester credit hours.
E. Include at least 48 semester credit hours of Core courses:
   - Communications 9 credits
   - Social & Behavioral Sciences 9 credits
   - Math & Sciences 9 credits
   - Humanities 9 credits
   - Distributed Requirements 12 credits
PROGRAMS AVAILABLE

F. Include at least 16 semester credit hours of elective credit.
   1. Students may include 16 semester credit hours of vocational/technical credit.
   2. Students may have up to 8 semester credit hours of Independent Study courses; up to 4 semester credit hours of Independent Study may be earned in any single semester.

G. Complete 3 semester credit hours to satisfy the Diversity Requirement with a minimum grade of “C” or better. The Diversity Requirement does not increase the number of credits required for graduation. The course used to fulfill the Diversity Requirement may also be used to fulfill three credits of Core requirements in Communications, Social & Behavioral Sciences, Humanities or Distributed Requirements if the diversity course is listed as fulfilling Core requirements in Communications, Social & Behavioral Sciences or the Humanities. If the course does not fall under any of the Core groups, the course used to fulfill the Diversity Requirement may count as an elective.

Courses that satisfy the Diversity Requirement at Des Moines Area Community College may or may not satisfy diversity requirements at other academic institutions. Students planning to transfer should contact their transfer institution to verify the transferability of courses.

Communications 9 Credits

Students must take three courses:
1. ENG 105 Composition I
2. ENG 106 Composition II or ENG 108 Comp II: Technical Writing

3. One speech course from the following list:
   SPC 101 Fundamentals of Oral Communication
   SPC 126 Interpersonal and Small Group Communication

Social & Behavioral Sciences 9 Credits

NOTE: Students must complete at least 3 courses. Each course must be from a distinct discipline (reflected by a distinct acronym).

Mathematics & Sciences 9 Credits

1. Students must take one laboratory science course from BIO, CHM, ENV, PHS or PHY and one MAT course (or BUS 211) listed below.

Humanities 9 Credits

Distributed Requirement 12 Credits

Complete 12 additional credits from any of the courses in categories of Communications, Social & Behavioral Sciences, Math & Sciences and Humanities.

Electives 16 Credits

1. Students may include no more than 16 semester credit hours of Vocational courses.
2. Students may include no more than 8 semester credit hours of Independent Study courses; no more than 4 semester credit hours of Independent Study may be earned in any single semester.

Degrees and Diplomas

Visit us online: www.DMACC.edu
**Programs Available**

**Diversity Requirement**

One course is required, but this course may count in the areas above. Students must earn a grade of “C” or above for the course that is used to fulfill the Diversity Requirement. The courses marked with an asterisk (*) will satisfy the Diversity Requirement and will also fulfill requirements in Communications, Social & Behavioral Sciences, Humanities or Distributed areas above. The courses that are not marked with an asterisk will satisfy the Diversity Requirement and will count as electives.

<table>
<thead>
<tr>
<th>Course</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>*ANT 100 Introduction to Anthropology</td>
<td>HIS 209 Iowa History</td>
</tr>
<tr>
<td>*ANT 105 Cultural Anthropology</td>
<td>*HS 257 African-American History</td>
</tr>
<tr>
<td>ANT 110 Faces of Culture</td>
<td>HSV 195 Women’s Issues</td>
</tr>
<tr>
<td>ANT 125 Applications of Anthropology</td>
<td>HSV 196 Discrimination and Diversity</td>
</tr>
<tr>
<td>ANT 150 Global Issues–Logic Persp.</td>
<td>*HUM 116 Encounters in Humanities</td>
</tr>
<tr>
<td>*ASL 151 American Sign Language I</td>
<td>*HUM 120 Introduction to Film</td>
</tr>
<tr>
<td>*ASL 181 American Sign Language II</td>
<td>*HUM 121 America in the Movies</td>
</tr>
<tr>
<td>*ASL 251 American Sign Language III</td>
<td>ITP 135 Deaf Culture and Community</td>
</tr>
<tr>
<td>*ASL 291 American Sign Language IV</td>
<td>ITR 101 Intro Interp &amp; Translation</td>
</tr>
<tr>
<td>ASM 150 Communication with the Elderly</td>
<td>*LIT 101 Intro to Literature</td>
</tr>
<tr>
<td>ASM 155 Impact of Demographics</td>
<td>*LIT 111 Amer Literature since Mid 1800s</td>
</tr>
<tr>
<td>ASM 160 Aspects of Aging</td>
<td>*LIT 130 African-American Literature</td>
</tr>
<tr>
<td>ASM 165 Healthy Aging</td>
<td>*LIT 142 Major British Writers</td>
</tr>
<tr>
<td>ASM 180 Cultural Diversity</td>
<td>*LIT 190 Women Writers</td>
</tr>
<tr>
<td>ASM 200 Depression, Death &amp; Grieving</td>
<td>MGT 145 Human Relations in Business</td>
</tr>
<tr>
<td>(Three ASM courses must be taken because the</td>
<td>*MUS 202 World Music</td>
</tr>
<tr>
<td>courses are one credit each.)</td>
<td></td>
</tr>
<tr>
<td>BUS 220 Intro International Business</td>
<td>PEB 178 Sports Diversity</td>
</tr>
<tr>
<td>ESL 160 ESL Multicultural Literature</td>
<td>*POL 111 American National Government</td>
</tr>
<tr>
<td>*EL --- All Foreign Language Courses</td>
<td>*POL 121 International Relations</td>
</tr>
<tr>
<td>*GEO 101 Intro to Geography</td>
<td>*POL 125 Comparative Gov’t &amp; Politics</td>
</tr>
<tr>
<td>*GEO 124 Reg Geog of the Non West World</td>
<td>*PSY 241 Abnormal Psychology</td>
</tr>
<tr>
<td>GLS 200 Country Study</td>
<td>*PSY 251 Social Psychology</td>
</tr>
<tr>
<td>GLS 220 The Middle East and Islam</td>
<td>REL 101 Survey of World Religions</td>
</tr>
<tr>
<td>GLS 230 Latin America</td>
<td>*SOC 100 Intro to Sociology</td>
</tr>
<tr>
<td>GLS 235 Intro to International Studies</td>
<td>*SOC 105 Social Problems</td>
</tr>
<tr>
<td>*HIS 112 Western Civ.: Ancient to Early Mod</td>
<td>*SOC 200 Minority Group Relations</td>
</tr>
<tr>
<td>*HIS 113 Western Civ.: Early Modern to Pres</td>
<td>SOC 225 Social Gerontology</td>
</tr>
<tr>
<td>*HIS 150 US-History to 1877</td>
<td>SPC 120 Intercultural Communication</td>
</tr>
<tr>
<td>*HIS 153 US-History since 1877</td>
<td>*SPC 126 Interpersonal &amp; Small Grp Comm</td>
</tr>
</tbody>
</table>

**Total AA degree Requirements**

64 Credits

**Associate in Science Degree (AS)**

The Associate in Science degree is awarded upon satisfactory completion of a program of college-level courses designed to prepare students for transfer to a four-year college/university or for skills preparation for entry-level employment in a specific occupation (Career Option Programs) where a bachelor’s degree is usually needed. For advancement in the field, a bachelor’s degree is typically required.

**Career Option Programs available at DMACC are:**

- Accounting Information Systems
- Accounting Paraprofessional
- Aging Services Management
- Biotechnology
- Business Administration
- Early Childhood Education
- Criminal Justice
- Fitness & Sports Management
- Fire Science Technology
- Human Services
- Interpretation & Translation
- Legal Assistant
- Management Information Systems
- Information on each program is found in this catalog. See Index for page numbers.

**AS degree Requirements**

To receive an AS degree, students must:

A. Maintain a 2.0 grade point average on all work applicable to the AS degree.

B. Earn at Des Moines Area Community College a minimum of 1/3 of the semester credit hours applicable to the degree being pursued. No more than 43 transfer semester credit hours may be applied toward the degree.

C. Complete the final 10 semester credit hours at DMACC (or petition to the Registrar for, and receive, an exception).

D. Complete a minimum of 64 semester credit hours.

E. Include at least 28 semester credit hours of Core courses:

   - Communications 9 credits
   - Social & Behavioral Sciences 6 credits
   - Math & Sciences 6 credits
   - Humanities 3 credits
   - Distributed Requirements 4 credits

F. Include at least 36 semester credit hours of elective credit.

1. Students may include 16 semester credit hours of vocational/technical credit.

2. Students may have up to 8 semester credit hours of Independent Study courses; up to 4 semester credit hours of Independent Study may be earned in any single semester.

G. Complete 3 semester credit hours to satisfy the Diversity Requirement with a minimum grade of “C” or better. The Diversity Requirement does not increase the number of credits required for graduation. The course used to fulfill the Diversity Requirement may also be used to fulfill three credits of Core requirements in Communications, Social & Behavioral Sciences, Humanities or Distributed Requirements if the diversity course is listed as fulfilling Core requirements in Communications, Social & Behavioral Sciences or the Humanities. If the course does not fall under any of the Core groups, the course used to fulfill the Diversity Requirement may count as an elective.

Courses that satisfy the Diversity Requirement at Des Moines Area Community College may or may not satisfy diversity requirements at other academic institutions. Students planning to transfer should contact their transfer institution to verify the transferability of courses.

**Core Requirements**

**Communications**

9 credits

Students must take three courses:

1. ENG 105 Composition I
2. ENG 106 Composition II or ENG 108 Comp II: Technical Writing
   *Students who intend to transfer to a four-year institution are advised to take ENG 105 and ENG 106.*
3. One speech course from the following list:
   - SPC 101 Fundamentals of Oral Communication
   - SPC 126 Interpersonal and Small Group Communication

**Social & Behavioral Sciences**

6 credits

<table>
<thead>
<tr>
<th>Course</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANT 100 Introduction to Anthropology</td>
<td>GEO 125 Regional Geography of the Dev World</td>
</tr>
<tr>
<td>ANT 105 Cultural Anthropology</td>
<td>GEO 124 Reg Geography of the Non West World</td>
</tr>
<tr>
<td>ECON 120 Principles of Macroeconomics</td>
<td>HIS 112 Western Civ: Ancient to Early Mod</td>
</tr>
<tr>
<td>ECON 130 Principles of Microeconomics</td>
<td>HIS 113 Western Civ: Early Modern to Present</td>
</tr>
<tr>
<td>GEO 111 Intro to Geography</td>
<td>HIS 150 US History to 1877</td>
</tr>
</tbody>
</table>
**Mathematics & Sciences**

Students must take one MAT course (or BUS 211) and one science from BIO, CHM, ENV, PHS or PHY.

**Degrees and Diplomas**

**Programs Available**

**Electives**

1. Students may include no more than 16 semester credit hours of Vocational courses.
2. Students may include no more than 8 semester credit hours of Independent Study courses; no more than 4 semester credit hours of Independent Study may be earned in any single semester.

**Diversity Requirement**

One course is required, but this course may count in the areas above. Students must earn a grade of “C” or above for the course that is used to fulfill the Diversity Requirement. The courses marked with an asterisk (*) will satisfy the Diversity Requirement and will also fulfill requirements in Communications, Social & Behavioral Sciences, Humanities or Distributed areas above. The courses that are not marked with an asterisk will satisfy the Diversity Requirement and will count as electives.

**Distributed Requirement**

Complete 4 additional credits from any of the courses in categories of Communications, Social & Behavioral Sciences, Math & Sciences and Humanities.

**Humanities**

Students must select from the following courses:

**Total AS degree Requirements**

**VISIT US ONLINE: www.DMACC.edu**
PROGRAMS AVAILABLE

Associate in General Studies Degree (AGS)

The Associate in General Studies degree provides students an opportunity to select their coursework to meet specific educational goals and interests. The AGS degree is generally not designed to meet college transfer requirements. Students wishing to complete an AGS degree are encouraged to consult with a counselor or advisor on their campus for assistance.

Associate in General Studies Requirements

To receive an AGS degree, students must:

A. Maintain a 2.0 grade point average on all work applicable to the AGS degree.

B. Earn at Des Moines Area Community College a minimum of 1/3 of the semester credit hours applicable to the degree being pursued. No more than 43 transfer semester credit hours may be applied toward the degree.

C. Complete the final 10 semester credit hours at DMACC (or petition to the Registrar for, and receive, an exception).

D. Complete no more than 8 semester credit hours of Independent Study courses; no more than 4 credits of Independent Study may be earned in a single semester.

E. Complete a minimum of 12 semester credit hours at DMACC after the AGS program approval effective date of January 1, 1992.

F. Satisfy the following AGS degree requirements:

- Communications 3 credits
- Social & Behavioral Sciences 3 credits
- Math & Sciences 3 credits
- Distributed Requirements 3 credits

Communications

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
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<tbody>
<tr>
<td>COM 705</td>
<td>Communication Skills</td>
<td>3</td>
</tr>
<tr>
<td>ENG 105</td>
<td>Composition I</td>
<td>3</td>
</tr>
<tr>
<td>ENG 106</td>
<td>Composition II</td>
<td>3</td>
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<tr>
<td>COMP 107</td>
<td>California Technical Writing</td>
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<tr>
<td>ADM 157</td>
<td>Business English</td>
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Social & Behavioral Sciences/Humanities

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
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<tbody>
<tr>
<td>AGR 101</td>
<td>Agricultural Economics</td>
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<tr>
<td>ANT 100</td>
<td>Introduction to Anthropology</td>
<td>3</td>
</tr>
<tr>
<td>ANT 105</td>
<td>Cultural Anthropology</td>
<td>3</td>
</tr>
<tr>
<td>ANT 107</td>
<td>Art Appreciation</td>
<td>3</td>
</tr>
<tr>
<td>ART 184</td>
<td>Principles of Photography</td>
<td>3</td>
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<tr>
<td>ART 186</td>
<td>Principles of Digital Photography</td>
<td>3</td>
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<tr>
<td>ASL 151</td>
<td>American Sign Language I</td>
<td>3</td>
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<tr>
<td>ASL 152</td>
<td>American Sign Language II</td>
<td>3</td>
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<tr>
<td>ASL 251</td>
<td>American Sign Language III</td>
<td>3</td>
</tr>
<tr>
<td>ASL 291</td>
<td>American Sign Language IV</td>
<td>3</td>
</tr>
<tr>
<td>DR 101</td>
<td>Intro to Theatre</td>
<td>3</td>
</tr>
<tr>
<td>ECON 120</td>
<td>Principles of Macroeconomics</td>
<td>3</td>
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<tr>
<td>ECON 130</td>
<td>Principles of Microeconomics</td>
<td>3</td>
</tr>
<tr>
<td>FL 141</td>
<td>Elementary Arabic I</td>
<td>3</td>
</tr>
<tr>
<td>FL 142</td>
<td>Elementary Arabic II</td>
<td>3</td>
</tr>
<tr>
<td>FL 241</td>
<td>Intermediate Arabic I</td>
<td>3</td>
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<tr>
<td>FL 242</td>
<td>Intermediate Arabic II</td>
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<td>FFL 141</td>
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<td>FFL 142</td>
<td>Elementary Chinese II</td>
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<tr>
<td>FFL 241</td>
<td>Intermediate Chinese I</td>
<td>3</td>
</tr>
<tr>
<td>FFL 242</td>
<td>Intermediate Chinese II</td>
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<tr>
<td>GEO 110</td>
<td>Intro to Geography</td>
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<tr>
<td>GEO 124</td>
<td>Reg Geography of the Non West World</td>
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<tr>
<td>GEO 125</td>
<td>Regional Geography of the Dev World</td>
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<tr>
<td>HIS 112</td>
<td>Western Civ: Ancient to Early Modern</td>
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<tr>
<td>HIS 113</td>
<td>Western Civ: Early Modern to Present</td>
<td>3</td>
</tr>
<tr>
<td>HIS 150</td>
<td>US History to 1877</td>
<td>3</td>
</tr>
<tr>
<td>HIS 153</td>
<td>US History since 1877</td>
<td>3</td>
</tr>
<tr>
<td>HIS 257</td>
<td>African-American History</td>
<td>3</td>
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<tr>
<td>HUM 106</td>
<td>Encounters in Humanities</td>
<td>3</td>
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<tr>
<td>HUM 120</td>
<td>Introduction to Film</td>
<td>3</td>
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<tr>
<td>HUM 121</td>
<td>America in the Movies</td>
<td>3</td>
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<tr>
<td>LIT 101</td>
<td>Intro to Literature</td>
<td>3</td>
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<tr>
<td>LIT 142</td>
<td>Major British Writers</td>
<td>3</td>
</tr>
<tr>
<td>LIT 150</td>
<td>American Literature to Mid 1800's</td>
<td>3</td>
</tr>
<tr>
<td>LIT 151</td>
<td>American Literature since Mid 1800's</td>
<td>3</td>
</tr>
<tr>
<td>LIT 155</td>
<td>Contemporary Literature</td>
<td>3</td>
</tr>
<tr>
<td>LIT 166</td>
<td>Science Fiction</td>
<td>3</td>
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<tr>
<td>LIT 168</td>
<td>Detective Fiction</td>
<td>3</td>
</tr>
<tr>
<td>LIT 193</td>
<td>Humor in Literature</td>
<td>3</td>
</tr>
<tr>
<td>LIT 195</td>
<td>African-American Literature</td>
<td>3</td>
</tr>
<tr>
<td>LIT 199</td>
<td>Women Writers</td>
<td>3</td>
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<tr>
<td>MGT 146</td>
<td>Human Relations in Business</td>
<td>3</td>
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<tr>
<td>MUS 100</td>
<td>Music Appreciation</td>
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<tr>
<td>MUS 102</td>
<td>Music Fundamentals</td>
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<tr>
<td>MUS 202</td>
<td>World Music</td>
<td>3</td>
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<tr>
<td>PHI 101</td>
<td>Intro to Philosophy</td>
<td>3</td>
</tr>
<tr>
<td>PHI 110</td>
<td>Introduction to Logic</td>
<td>3</td>
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<tr>
<td>PHI 105</td>
<td>Introduction to Ethics</td>
<td>3</td>
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<tr>
<td>POL 111</td>
<td>American National Government</td>
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<tr>
<td>POL 112</td>
<td>American State &amp; Local Government</td>
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<tr>
<td>POL 121</td>
<td>International Relations</td>
<td>3</td>
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<tr>
<td>POL 125</td>
<td>Comparative Gov't &amp; Politics</td>
<td>3</td>
</tr>
<tr>
<td>POL 171</td>
<td>Intro to Public Administration</td>
<td>3</td>
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<tr>
<td>PSY 111</td>
<td>Introduction to Psychology</td>
<td>3</td>
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<tr>
<td>PSY 121</td>
<td>Developmental Psychology</td>
<td>3</td>
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<tr>
<td>PSY 241</td>
<td>Abnormal Psychology</td>
<td>3</td>
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<tr>
<td>PSY 251</td>
<td>Social Psychology</td>
<td>3</td>
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<tr>
<td>PSY 261</td>
<td>Human Sexuality</td>
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<td>PSS 102</td>
<td>Human and Work Relations</td>
<td>3</td>
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<tr>
<td>REL 110</td>
<td>Survey of World Religions</td>
<td>3</td>
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<tr>
<td>SOC 110</td>
<td>Intro to Sociology</td>
<td>3</td>
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<tr>
<td>SOC 115</td>
<td>Social Problems</td>
<td>3</td>
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<tr>
<td>SOC 120</td>
<td>Marriage &amp; Family</td>
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<tr>
<td>SOC 200</td>
<td>Minority Group Relations</td>
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Mathematics & Sciences

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
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<tbody>
<tr>
<td>ENS 115</td>
<td>Environmental Science</td>
<td>3</td>
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<tr>
<td>ENS 116</td>
<td>Environmental Science Lab</td>
<td>3</td>
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<tr>
<td>ENV 145</td>
<td>Conservation Biology</td>
<td>3</td>
</tr>
<tr>
<td>BIO 130</td>
<td>Field Ecology</td>
<td>3</td>
</tr>
<tr>
<td>BIO 156</td>
<td>Human Biology w/Lab</td>
<td>3</td>
</tr>
<tr>
<td>BIO 104</td>
<td>Introductory Biology w/Lab</td>
<td>3</td>
</tr>
<tr>
<td>BIO 112</td>
<td>General Biology I</td>
<td>3</td>
</tr>
<tr>
<td>BIO 113</td>
<td>General Biology II</td>
<td>3</td>
</tr>
<tr>
<td>BIO 117</td>
<td>Microbiology w/Lab</td>
<td>3</td>
</tr>
<tr>
<td>BIO 164</td>
<td>Essential Anatomy/Physiology</td>
<td>3</td>
</tr>
<tr>
<td>BIO 168</td>
<td>Anatomy &amp; Physiology I</td>
<td>3</td>
</tr>
<tr>
<td>BIO 173</td>
<td>Anatomy &amp; Physiology II</td>
<td>3</td>
</tr>
<tr>
<td>BIO 172</td>
<td>Health Science Microbiology</td>
<td>3</td>
</tr>
<tr>
<td>BIO 175</td>
<td>Health Science Anatomy</td>
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</tr>
<tr>
<td>BIO 176</td>
<td>Health Science Physiology</td>
<td>3</td>
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<tr>
<td>BUS 102</td>
<td>Business Math</td>
<td>3</td>
</tr>
<tr>
<td>BUS 211</td>
<td>Business Statistics</td>
<td>3</td>
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<tr>
<td>CHM 105</td>
<td>Survey of Chemistry</td>
<td>3</td>
</tr>
<tr>
<td>CHM 122</td>
<td>Intro to General Chemistry</td>
<td>3</td>
</tr>
<tr>
<td>CHM 132</td>
<td>Intro to Organic/Biochemistry</td>
<td>3</td>
</tr>
<tr>
<td>CHM 155</td>
<td>General/Inorganic Chemistry I</td>
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</tr>
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<td>CHM 157</td>
<td>General/Inorganic Chemistry</td>
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<tr>
<td>CHM 263</td>
<td>Organic Chemistry I</td>
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</tr>
<tr>
<td>CHM 273</td>
<td>Organic Chemistry II</td>
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<tr>
<td>ELT 106</td>
<td>Basic Math for Electronics</td>
<td>3</td>
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<tr>
<td>ELT 108</td>
<td>Math--Electronics &amp; Computers</td>
<td>3</td>
</tr>
<tr>
<td>MAT 101</td>
<td>Math for Liberal Arts</td>
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<tr>
<td>MAT 104</td>
<td>Math for Elementary Teachers Math I</td>
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<tr>
<td>MAT 106</td>
<td>Math for Elementary Teachers Math II</td>
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<tr>
<td>MAT 121</td>
<td>College Algebra</td>
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<tr>
<td>MAT 141</td>
<td>Finite Mathematics</td>
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<tr>
<td>MAT 157</td>
<td>Statistics (OR BUS 211 Business Statistics)</td>
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<tr>
<td>MAT 162</td>
<td>Principles of Business Statistics</td>
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<tr>
<td>MAT 166</td>
<td>Calculus for Business/Social Science</td>
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</tr>
<tr>
<td>MAT 190</td>
<td>Trigonometry</td>
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<tr>
<td>MAT 171</td>
<td>Precalculus</td>
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<tr>
<td>MAT 217</td>
<td>Calculus I</td>
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<td>MAT 299</td>
<td>Calculus II</td>
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<td>MAT 277</td>
<td>Calculus III</td>
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<tr>
<td>MAT 233</td>
<td>Differential Equations with Laplace (OR MAT 157 Statistics)</td>
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<tr>
<td>MAT 772</td>
<td>Applied Math</td>
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<tr>
<td>MAT 773</td>
<td>Applied Math II</td>
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<tr>
<td>MHS 512</td>
<td>Astronomy</td>
<td>3</td>
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<tr>
<td>PHY 126</td>
<td>Survey of Physics</td>
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</tr>
<tr>
<td>PHY 130</td>
<td>General Physics I</td>
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</tr>
<tr>
<td>PHY 131</td>
<td>General Physics II</td>
<td>3</td>
</tr>
<tr>
<td>PHY 203</td>
<td>Classical Physics I</td>
<td>3</td>
</tr>
<tr>
<td>PHY 223</td>
<td>Classical Physics II</td>
<td>3</td>
</tr>
<tr>
<td>PHY 710</td>
<td>Technical Physics</td>
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</tr>
</tbody>
</table>

Distributed Requirement

Students must select one course from any of the courses in categories of Communications, Social & Behavioral Sciences/Humanities or Math & Sciences or SPC 101 or SPC 126 or ELT 368.

Electives

52 Credits

Total AGS Degree Requirements

64 Credits
**Programs Available**

### ASEP–General Motors

The Automotive Service Educational Program (ASEP), cosponsored by DMACC and General Motors, is a two-year automotive program designed to prepare students for employment as a GM dealership technician. The curriculum, designed by General Motors and DMACC, leads to the associate degree in Automotive Technology. The program involves classroom lecture, laboratory experience and dealership work experience.

**Location: Ankeny**

**Program Entry Requirements**
1. Complete an application for admission.
2. Satisfy the assessment requirement.
3. Attend any required information/registration session.
4. Be accepted by General Motors as a participant.
5. All program participants must be employed by a participating General Motors dealership.

**Students start in October.**

**Graduation Requirements**
To earn an ASEP General Motors AAS degree, a student must complete all course work as prescribed and maintain a 2.0 grade point average.

**Required Courses**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATG 312</td>
<td>GM Specialized Electronics Training</td>
<td>4</td>
</tr>
<tr>
<td>ATG 316</td>
<td>GM Shop Fund &amp; Minor Service</td>
<td>4</td>
</tr>
<tr>
<td>ATG 320</td>
<td>GM Brake Systems</td>
<td>4</td>
</tr>
<tr>
<td>ATG 322</td>
<td>GM Steering &amp; Suspension</td>
<td>3</td>
</tr>
<tr>
<td>ATG 329</td>
<td>Technical Internship I</td>
<td>3</td>
</tr>
<tr>
<td>ATG 326</td>
<td>GM Auto Air Conditioning Systems</td>
<td>3</td>
</tr>
<tr>
<td>ATG 327</td>
<td>GM Shop Fund &amp; Repair–GM Engines</td>
<td>3</td>
</tr>
<tr>
<td>ATG 328</td>
<td>Diagnosis/Repair–GM Electrical Systems</td>
<td>3</td>
</tr>
<tr>
<td>ATG 330</td>
<td>Technical Internship II</td>
<td>3</td>
</tr>
<tr>
<td>ATG 333</td>
<td>Major Service Procedures/GM Engines</td>
<td>3</td>
</tr>
<tr>
<td>ATG 336</td>
<td>GM Fuel Systems</td>
<td>3</td>
</tr>
<tr>
<td>ATG 337</td>
<td>GM Tune-Up Proc and Emission Control</td>
<td>4</td>
</tr>
<tr>
<td>ATG 340</td>
<td>Technical Internship III</td>
<td>3</td>
</tr>
<tr>
<td>ATG 344</td>
<td>GM Manual Drivetrains</td>
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<tr>
<td>ATG 345</td>
<td>GM Automatic Drivetrains</td>
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<tr>
<td>ATG 350</td>
<td>Technical Internship IV</td>
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<tr>
<td>ATG 354</td>
<td>Advanced GM Motors Systems</td>
<td>5</td>
</tr>
<tr>
<td>BUS 102</td>
<td>Intro to Business</td>
<td>3</td>
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<tr>
<td>COM 703</td>
<td>Communication Skills</td>
<td>3</td>
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<tr>
<td>MAT 772</td>
<td>Applied Math</td>
<td>3</td>
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<tr>
<td>PHY 710</td>
<td>Technical Physics</td>
<td>3</td>
</tr>
<tr>
<td>PSY 102</td>
<td>Human and Work Relations</td>
<td>3</td>
</tr>
</tbody>
</table>

**Total credits required to complete this program ..........74**

### ASSET–Ford

The Automotive Student Service Educational Training Program (ASSET), cosponsored by DMACC and Ford Motor Company, is a two-year automotive program designed to prepare students to be competent and professional entry-level Ford or Lincoln-Mercury dealership technicians. The curriculum, designed by Ford Motor Company and DMACC, leads to the Associate degree in Automotive Technology and Ford Technician Training Certification. The program involves classroom lecture, laboratory experience and dealership work experience.

**Location: Ankeny**

**Program Entry Requirements**
1. Complete an application for admission.
2. Satisfy the assessment requirement, aptitude and ability tests.
3. Be accepted by Ford Motor Company as a participant.
4. All program participants must be employed by a participating Ford or Lincoln-Mercury dealership.

**Students start Fall term.**

**Graduation Requirements**
To earn an ASSET–Ford AAS degree, a student must complete all course work as prescribed and maintain a 2.0 grade point average.

**Required Courses**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>ATF 312</td>
<td>Ford Automotive Electrical</td>
<td>5</td>
</tr>
<tr>
<td>ATF 317</td>
<td>Ford Shop Fund and Minor Service</td>
<td>3</td>
</tr>
<tr>
<td>ATF 280</td>
<td>Ford Steering/Suspension/Brakes</td>
<td>4</td>
</tr>
<tr>
<td>ATF 290</td>
<td>Adv Ford Steering/Suspension/Brakes</td>
<td>2</td>
</tr>
<tr>
<td>ATF 320</td>
<td>Technical Internship I</td>
<td>3</td>
</tr>
<tr>
<td>ATF 326</td>
<td>Ford Automotive Climate Ctrl</td>
<td>3</td>
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<tr>
<td>ATF 328</td>
<td>Ford Electronic Systems Diag</td>
<td>5</td>
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<tr>
<td>ATF 330</td>
<td>Technical Internship II</td>
<td>3</td>
</tr>
<tr>
<td>ATF 333</td>
<td>Ford Engine Diagnosis/Repair</td>
<td>4</td>
</tr>
<tr>
<td>ATF 336</td>
<td>Ford Fuel Systems &amp; Injection</td>
<td>3</td>
</tr>
<tr>
<td>ATF 337</td>
<td>Ford Driveability &amp; Emissions</td>
<td>4</td>
</tr>
<tr>
<td>ATF 340</td>
<td>Technical Internship III</td>
<td>3</td>
</tr>
<tr>
<td>ATF 344</td>
<td>Ford Driveline and 4X4 Diagnosis and Repair</td>
<td>2</td>
</tr>
<tr>
<td>ATF 345</td>
<td>Ford Manual Transmissions</td>
<td>2</td>
</tr>
<tr>
<td>ATF 346</td>
<td>Ford Transmissions and Transaxles</td>
<td>4</td>
</tr>
<tr>
<td>ATF 350</td>
<td>Technical Internship IV</td>
<td>3</td>
</tr>
<tr>
<td>ATF 354</td>
<td>Ford Advanced Engine Controls, Electronics</td>
<td>5</td>
</tr>
<tr>
<td>BUS 102</td>
<td>Intro to Business</td>
<td>3</td>
</tr>
<tr>
<td>COM 703</td>
<td>Communication Skills</td>
<td>3</td>
</tr>
<tr>
<td>MAT 772</td>
<td>Applied Math</td>
<td>3</td>
</tr>
<tr>
<td>PHY 710</td>
<td>Technical Physics</td>
<td>3</td>
</tr>
<tr>
<td>PSY 102</td>
<td>Human and Work Relations</td>
<td>3</td>
</tr>
</tbody>
</table>

**Total credits required to complete this program ..........73**

### Accounting & Bookkeeping

The Accounting & Bookkeeping program prepares you for a career in accounting. Many career opportunities exist for you upon completion of the Accounting & Bookkeeping program. You will identify, analyze, summarize, communicate and record business transactions.

You will take specialized courses in accounting including payroll, financial and managerial computers and accounting procedures, equipping you with marketable skills for any business environment. You will receive not only conceptual training but actual “hands-on” training that will provide you with the important abilities needed for success. You will complete an internship in a professional work environment where many of the skills and procedures studied in the classroom are practiced under the
combined guidance of a teacher and a cooperating employer. You will find employment opportunities in the profit and nonprofit private and governmental sectors.

Locations: Boone, Urban
Selected courses in this program are offered at other campuses.

Program Entry Requirements
1. Complete an application for admission.
2. Satisfy the assessment requirement.
3. Attend any required information/registration session.
4. ADM 105 Intro to Keyboarding at DMACC or equivalent is strongly recommended.

Students start Fall term.

Graduation Requirements
To earn an Accounting & Bookkeeping diploma, a student must complete the requirements for the diploma and maintain a 2.0 grade point average.

Term 1
Select 1 Course from Option 1 and 1 Course from Option 2

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACC 131 Principles of Accounting I</td>
<td>4</td>
</tr>
<tr>
<td>ACC 124 Accounting Professionalism</td>
<td>3</td>
</tr>
<tr>
<td>BUS 112 Business Math</td>
<td>3</td>
</tr>
<tr>
<td>CSC 110 Intro to Computers</td>
<td>3</td>
</tr>
<tr>
<td>MGT 145 Human Relations in Business</td>
<td>Opt 1</td>
</tr>
<tr>
<td>PSY 111 Introduction to Psychology</td>
<td>Opt 1</td>
</tr>
<tr>
<td>ECN 120 Principles of Macroeconomics</td>
<td>Opt 1</td>
</tr>
<tr>
<td>ECN 130 Principles of Microeconomics</td>
<td>Opt 1</td>
</tr>
<tr>
<td>ENG 105 Composition I</td>
<td>Opt 2</td>
</tr>
<tr>
<td>ADM 157 Business English</td>
<td>Opt 2</td>
</tr>
</tbody>
</table>

ECN 120 or ECN 130 is strongly recommended for students pursuing business majors at a four-year institution.

Term 2

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACC 132 Principles of Accounting II</td>
<td>4</td>
</tr>
<tr>
<td>ACC 193 Accounting Procedures/Mgmt</td>
<td>3</td>
</tr>
<tr>
<td>ACC 311 Computer Accounting</td>
<td>3</td>
</tr>
<tr>
<td>ACC 361 Accounting Spreadsheets</td>
<td>3</td>
</tr>
<tr>
<td>ACC 161 Payroll Accounting</td>
<td>3</td>
</tr>
</tbody>
</table>

Term 3
Select 1 Course from Option 3 and 1 Course from Option 4

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACC 946 Accounting Career Seminar</td>
<td>1</td>
</tr>
<tr>
<td>ACC 932 Accounting Internship</td>
<td>Opt 3</td>
</tr>
<tr>
<td>ENG 106 Composition II</td>
<td>Opt 4</td>
</tr>
<tr>
<td>ENG 108 Comp II: Technical Writing</td>
<td>Opt 4</td>
</tr>
<tr>
<td>COM 703 Communication Skills</td>
<td>Opt 4</td>
</tr>
</tbody>
</table>

Students planning to transfer to a four-year institution should select ENG 106.

Total minimum credits required to complete this program........................................ 42

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Accounting Information Systems

The Accounting Information Systems program prepares you for a career in accounting and for a liaison position between accounting and information systems. You will receive strong information technology skills in addition to traditional accounting skills. You will become proficient in commercial and customized accounting software and spreadsheets.

You will take courses in accounting for taxes and payroll on computers along with programming that will allow you to seek advanced placement in accounting or information systems. Optional courses in programming allow you to select a mainframe or a personal computer environment. You will find employment opportunities in the profit and nonprofit private and governmental sectors.

Locations: Ankeny, Boone, Carroll, Urban
Selected courses in this program are offered at other campuses.

Program Entry Requirements
1. Complete an application for admission.
2. Satisfy the assessment requirement.
3. Attend any required information/registration session.
4. High School Algebra II or higher with a grade of “C” or better or MAT 073 and/or MAT 141 at DMACC.
5. ADM 105 Intro to Keyboarding at DMACC or equivalent is strongly recommended.
6. CSC 110 Intro to Computers at DMACC or equivalent is strongly recommended.

Students start Fall term at Boone and Urban Campuses.

Students start Spring term at Ankeny and Carroll Campuses.

Course sequence may vary; see a counselor/advisor for details.

Graduation Requirements
To earn an Accounting Information Systems AS degree, a student must complete all course work as prescribed and maintain a 2.0 grade point average.

Term 1

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACC 131 Principles of Accounting I</td>
<td>4</td>
</tr>
<tr>
<td>CIS 125 Intro to Program Logic w/lang</td>
<td>3</td>
</tr>
<tr>
<td>ECN 120 Principles of Macroeconomics</td>
<td>3</td>
</tr>
<tr>
<td>ENG 105 Composition I</td>
<td>3</td>
</tr>
<tr>
<td>Any AA/AS degree Core MAT or BUS 211 course</td>
<td>3-4</td>
</tr>
</tbody>
</table>

Students planning to transfer to a four-year institution should check with that institution regarding math requirements before selecting math courses for this program.

Term 2

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACC 132 Principles of Accounting II</td>
<td>4</td>
</tr>
<tr>
<td>ENG 106 Composition II</td>
<td>3</td>
</tr>
<tr>
<td>ACC 311 Computer Accounting</td>
<td>3</td>
</tr>
<tr>
<td>CIS 303 Introduction to Data Base</td>
<td>3</td>
</tr>
<tr>
<td>ECN 130 Principles of Microeconomics</td>
<td>3</td>
</tr>
</tbody>
</table>
You will study professional and ethics case studies for business and obtain oral and written communication skills that are necessary for success in business. Courses in accounting, taxes and payroll with commercial software allow you to seek advanced placement in accounting or business. You will be able to identify, analyze, summarize, communicate, record and interpret business transactions and financial statements. You will become proficient in commercial and customized accounting software and spreadsheets.

The Accounting Paraprofessional program prepares you for an accounting career. You will be on a pre-CPA/CMA track that is articulated with selected four-year institutions to facilitate the completion of a bachelor’s degree. You will be able to identify, analyze, summarize, communicate, record and interpret business transactions and financial statements. You will become proficient in commercial and customized accounting software and spreadsheets. The program is 65 credits and you can complete it in four regular semesters. You will study professional and ethics case studies for business and obtain oral and written communication skills that are necessary for success in business. Courses in accounting, taxes and payroll with commercial software allow you to seek advanced placement in accounting or information systems departments. Employment opportunities are found in the profit and nonprofit private and governmental sectors.

**Locations: Ankeny, Boone, Carroll, Urban**

Selected courses in this program are offered at other campuses.

**Program Entry Requirements**

1. Complete an application for admission.
2. Satisfy the assessment requirement.
3. Attend any required information/registration session.
4. High School Algebra II or higher with a grade of “C” or better or MAT 073 and/or MAT 141 at DMACC.
5. ADM 105 Intro to Keyboarding at DMACC or equivalent is strongly recommended.

**Students start Fall term at Boone and Urban Campuses.**

### Accounting Paraprofessional

**Term 1**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACC 131</td>
<td>Principles of Accounting I</td>
<td>4</td>
</tr>
<tr>
<td>CSC 110</td>
<td>Intro to Computers</td>
<td>3</td>
</tr>
<tr>
<td>ECN 120</td>
<td>Principles of Macroeconomics</td>
<td>3</td>
</tr>
<tr>
<td>ENG 105</td>
<td>Composition I</td>
<td>3</td>
</tr>
<tr>
<td>Any AA/AS degree Core MAT or BUS 211 course</td>
<td>3-4</td>
<td></td>
</tr>
</tbody>
</table>

**Term 2**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACC 132</td>
<td>Principles of Accounting II</td>
<td>4</td>
</tr>
<tr>
<td>ACC 311</td>
<td>Computer Accounting</td>
<td>3</td>
</tr>
<tr>
<td>ACC 161</td>
<td>Payroll Accounting</td>
<td>3</td>
</tr>
<tr>
<td>ENG 106</td>
<td>Composition II</td>
<td>3</td>
</tr>
<tr>
<td>Any AA/AS degree Core Humanities course</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

**Term 3**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACC 231</td>
<td>Intermediate Accounting I</td>
<td>4</td>
</tr>
<tr>
<td>ACC 222</td>
<td>Cost Accounting</td>
<td>4</td>
</tr>
<tr>
<td>ECN 130</td>
<td>Principles of Microeconomics</td>
<td>3</td>
</tr>
<tr>
<td>SPC 101</td>
<td>Fundamentals of Oral Communication</td>
<td>3</td>
</tr>
<tr>
<td>Any AA/AS degree Core MAT or BUS 211 course</td>
<td>3-4</td>
<td></td>
</tr>
</tbody>
</table>

**Term 4**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACC 261</td>
<td>Income Tax Accounting</td>
<td>3</td>
</tr>
<tr>
<td>ACC 272</td>
<td>Accounting Information Systems</td>
<td>4</td>
</tr>
<tr>
<td>ACC 361</td>
<td>Accounting Spreadsheets</td>
<td>3</td>
</tr>
<tr>
<td>ACC 191</td>
<td>Financial Analysis</td>
<td>3</td>
</tr>
<tr>
<td>Any AA/AS degree Core BIO, CHM, ENV or PHY course</td>
<td>3-5</td>
<td></td>
</tr>
</tbody>
</table>

**Total credits required to complete this program .................. 67**

### Degrees and Diplomas

**Programs Available**

**Term 3—Select 1 Course from Option 1**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACC 231</td>
<td>Intermediate Accounting I</td>
<td>4</td>
</tr>
<tr>
<td>ACC 261</td>
<td>Income Tax Accounting</td>
<td>3</td>
</tr>
<tr>
<td>CIS 161</td>
<td>C++ Opt 1</td>
<td>3</td>
</tr>
<tr>
<td>CIS 402</td>
<td>COBOL Opt 1</td>
<td>3</td>
</tr>
<tr>
<td>CIS 604</td>
<td>Visual Basic</td>
<td>3</td>
</tr>
<tr>
<td>CIS 152</td>
<td>Data Structures</td>
<td>3</td>
</tr>
</tbody>
</table>

**Term 4—Select 1 Course from Option 2 and 1 Course from Option 3**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPC 101</td>
<td>Fundamentals of Oral Communication</td>
<td>3</td>
</tr>
<tr>
<td>ACC 272</td>
<td>Accounting Information Systems</td>
<td>4</td>
</tr>
<tr>
<td>ACC 361</td>
<td>Accounting Spreadsheets</td>
<td>3</td>
</tr>
<tr>
<td>ACC 161</td>
<td>Payroll Accounting</td>
<td>3</td>
</tr>
<tr>
<td>ACC 191</td>
<td>Financial Analysis</td>
<td>3</td>
</tr>
<tr>
<td>BCA 113</td>
<td>Computer Network Literacy</td>
<td>3</td>
</tr>
<tr>
<td>MGT 248</td>
<td>Systems &amp; Information Mgmt</td>
<td>3</td>
</tr>
</tbody>
</table>

**Total credits required to complete this program .................... 65**

**Accounting Specialist**

The Accounting Specialist program prepares you for an accounting career. You will be able to identify, analyze, summarize, communicate, record and interpret business transactions and financial statements. You will learn commercial and customized accounting software and spreadsheets and you will apply the skills via intensive accounting applications. You will study professional and ethical behavioral case studies for business, as well as attain oral and written communication skills that are...
necessary for success. Technical courses in accounting, taxes and payroll with commercial software will allow you to seek advanced placement in accounting or information systems departments. You will experience a professional work environment under the combined guidance of a teacher and a cooperating employer where many of the skills and procedures studied in the classroom are observed and practiced.

You will find employment opportunities in the profit and nonprofit private and governmental sectors.

Locations: Boone, Urban
Selected courses in this program are offered at other campuses.

Program Entry Requirements
1. Complete an application for admission.
2. Satisfy the assessment requirement.
3. Attend any required information/registration session.
4. High School Algebra II or higher with a grade of “C” or better or MAT 073 and/or MAT 141 at DMACC.
5. ADM 105 Intro to Keyboarding at DMACC or equivalent is strongly recommended.

Students start Fall term at Boone and Urban Campuses.
Students start Spring term at Ankeny and Carroll Campuses.

Course sequence may vary; see a counselor/advisor for details.

Graduation Requirements
To earn an Accounting Specialist AAS degree, a student must complete the requirements for the degree, maintain a 2.0 grade point average and receive a grade of “C” or above in all ACC course work.

Term 1—Select 1 Course from Option 1
ACC 131 Principles of Accounting I 4
ACC 124 Accounting Professionalism 3
CSC 110 Intro to Computers 3
ENG 105 Composition I Opt 1 3
ADM 157 Business English Opt 1 3
Any AA/AS degree Core MAT or BUS 211 course 3–4
Students planning to transfer to a four-year institution should check with that institution regarding math requirements before selecting math courses for this program.

Terms 2
Select 1 Course from Option 2 and 1 Course from Option 3
ACC 132 Principles of Accounting II 4
ACC 311 Computer Accounting 3
ACC 161 Payroll Accounting 3
ENG 106 Composition II Opt 2 3
ENG 108 Comp II: Technical Writing Opt 2 3
COM 703 Communication Skills Opt 2 3
BUS 185 Business Law I Opt 3 3
ECN 120 Principles of Macroeconomics Opt 3 3
Students planning to transfer to a four-year institution should select ENG 106. ECN 120 is strongly recommended for business majors.

Term 3—Select 1 Course from Option 4
SPC 101 Fundamentals of Oral Communication 3
ACC 272 Accounting Information Systems 4
MGT 145 Human Relations in Business Opt 4 3
PSY 111 Introduction to Psychology Opt 4 3
ECN 130 Principles of Microeconomics Opt 4 3
Students planning to transfer to a four-year institution should check with that institution regarding science and humanities requirements before selecting courses for this program.

Term 4
ACC 231 Intermediate Accounting I 4
ACC 222 Cost Accounting 4
ACC 361 Accounting Spreadsheets 3
Any AA/AS degree Core MAT or BUS 211 course 3–4
Students planning to transfer to a four-year institution should check with that institution regarding math requirements before selecting math courses for this program.

Term 5
ACC 261 Income Tax Accounting 3
ACC 191 Financial Analysis 3
ACC 946 Accounting Career Seminar 1
ACC 932 Accounting Internship 3–4
Students planning to transfer to a four-year institution should select courses numbered from 100 to 199.

Total minimum credits required to complete this program............................... 66

Administrative Assistant

Today’s business offices have a need for highly skilled employees who possess the skills and confidence necessary to handle a wide variety of office tasks. The Administrative Assistant degree provides a strong foundation in office skills, including the technological aspects, and combines course work and hands-on computer experience. The curriculum includes comprehensive work skills preparation necessary for the administrative assistant to work in business, professional offices and other employing agencies.

Students will be prepared to demonstrate good communication skills, problem-solving skills, effective human relations skills, and skilled use of computer applications and office procedures.

Locations: Ankeny, Boone, Carroll, Urban
Selected courses in this program are offered at other campuses.

Program Entry Requirements
1. Complete an application for admission.
2. Satisfy the assessment requirement.
3. Attend any required information/registration session.

Students start any term.

Graduation Requirements
To earn an Administrative Assistant AAS degree, a student must complete all course work as prescribed and maintain a 2.0 grade point average.
**Programs Available**

**Adult Services**
(see Certificate Section, page 111)

**Aging Services Management**

The Aging Services Management program provides students with the opportunity to develop the knowledge and skills needed to perform the duties of a healthcare administrator in long-term care facilities and residential care facilities; director in assisted living and adult day care programs; or management with adult services agencies. An administrator or director may be responsible for planning, organizing, staffing, directing and budgeting of a facility or agency that works with the older adult population. Students in this program will explore specific administration areas such as management, services, financial, legal regulations and human relations. There are four tracks for students to select a career path. The Aging Services Management programs provide classes on the Web, TV and weekends to meet the needs of nontraditional students.

Students completing the AS degree will have the option of seeking employment in a health-care-related field, or transferring to a four-year college or university.

**IMPORTANT NOTE:** Students are strongly advised to contact one of the staff members in Aging Services Management in Bldg. 24, Room 208A on the Ankeny Campus or call 515-964-6814 or 515-964-6262 regarding additional important information to meet state licensure requirements for nursing home administrators.

**Location: Ankeny**

**Program Entry Requirements**

1. Complete an application for admission.
2. Satisfy the assessment requirement.
3. Attend any required information/registration session.

**Students may start any term.**

**Graduation Requirements**

To earn an Aging Services Management AS degree with an emphasis in either the Long-Term Care Administration track or the Adult Services track, a student must complete the standard core requirements for the degree, plus the required and option courses and maintain a 2.0 grade point average.

**Long-Term Care Administration Track**

The Long-Term Care Administration AS degree track provides students with the knowledge and skills needed to perform the duties of a nursing home administrator. Administrators play a vital role in planning, organizing, staffing, directing and controlling the operation of a long-term care facility.

**Required Courses**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASM 278</td>
<td>Management in Senior Care Services</td>
<td>3</td>
</tr>
<tr>
<td>ASM 279</td>
<td>Healthcare Human Resources</td>
<td>3</td>
</tr>
<tr>
<td>ASM 280</td>
<td>Healthcare Delivery Systems</td>
<td>2</td>
</tr>
<tr>
<td>ASM 282</td>
<td>Aging Services</td>
<td>2</td>
</tr>
<tr>
<td>ASM 283</td>
<td>Aging Policies &amp; Government Programs</td>
<td>2</td>
</tr>
<tr>
<td>SOC 225</td>
<td>Social Gerontology/Applications</td>
<td>4</td>
</tr>
<tr>
<td>SOC 226</td>
<td>Issues in Aging</td>
<td>2</td>
</tr>
</tbody>
</table>

**Practicum**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASM 251</td>
<td>Governance of NF/SNF</td>
<td>2</td>
</tr>
<tr>
<td>ASM 252</td>
<td>Governance of Supported Living</td>
<td>2</td>
</tr>
<tr>
<td>ASM 253</td>
<td>LTC Practicum: Psychosocial Needs</td>
<td>2</td>
</tr>
<tr>
<td>ASM 254</td>
<td>LTC Practicum: Physical Needs</td>
<td>2</td>
</tr>
<tr>
<td>ASM 255</td>
<td>LTC Practicum: Administration</td>
<td>2</td>
</tr>
<tr>
<td>ASM 257</td>
<td>ASM Capstone</td>
<td>2</td>
</tr>
</tbody>
</table>

**Total minimum credits required to complete the AAS degree** ........................................ 64

**Term 1**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUS 112</td>
<td>Business Math</td>
<td>3</td>
</tr>
<tr>
<td>MGT 145</td>
<td>Human Relations in Business</td>
<td>3</td>
</tr>
<tr>
<td>ADM 157</td>
<td>Business English</td>
<td>3</td>
</tr>
<tr>
<td>BCA 133</td>
<td>Word Processing Skill Development I</td>
<td>4</td>
</tr>
<tr>
<td>ADM 131</td>
<td>Office Calculators</td>
<td>1</td>
</tr>
<tr>
<td>BCA 212</td>
<td>Intro to Computer Business Applications</td>
<td>3</td>
</tr>
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</table>

**Term 2**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MGT 115</td>
<td>Administrative Management</td>
<td>3</td>
</tr>
<tr>
<td>ADM 162</td>
<td>Office Procedures</td>
<td>3</td>
</tr>
<tr>
<td>ADM 154</td>
<td>Business Communication</td>
<td>3</td>
</tr>
<tr>
<td>BCA 137</td>
<td>Word Processing Skill Development II</td>
<td>3</td>
</tr>
<tr>
<td>BCA 213</td>
<td>Intermed. Computer Business Applications</td>
<td>3</td>
</tr>
<tr>
<td>ADM 259</td>
<td>Professional Development</td>
<td>3</td>
</tr>
</tbody>
</table>

**Term 3**

In addition to the required course, students must

**Select 1 Course from Option 1, 1 Course from Option 2, and 2 Courses from Option 3**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SDV 153</td>
<td>Pre-Employment Strategies</td>
<td>2</td>
</tr>
<tr>
<td>ACC 131</td>
<td>Principles of Accounting I</td>
<td>Opt 1</td>
</tr>
<tr>
<td>ACC 111</td>
<td>Intro to Accounting</td>
<td>Opt 1</td>
</tr>
<tr>
<td>SPC 101</td>
<td>Fundamentals of Oral Communication</td>
<td>Opt 2</td>
</tr>
<tr>
<td>SPC 126</td>
<td>Interpersonal &amp; Small Group Comm</td>
<td>Opt 2</td>
</tr>
<tr>
<td>BUS 102</td>
<td>Intro to Business</td>
<td>Opt 3</td>
</tr>
<tr>
<td>FIN 121</td>
<td>Personal Finance</td>
<td>Opt 3</td>
</tr>
<tr>
<td>BUS 148</td>
<td>Small Business Management</td>
<td>Opt 3</td>
</tr>
<tr>
<td>BUS 185</td>
<td>Business Law I</td>
<td>Opt 3</td>
</tr>
<tr>
<td>BCA 113</td>
<td>Computer Network Literacy</td>
<td>Opt 3</td>
</tr>
<tr>
<td>MGT 248</td>
<td>Systems &amp; Information Management</td>
<td>Opt 3</td>
</tr>
<tr>
<td>MKT 110</td>
<td>Principles of Marketing</td>
<td>Opt 3</td>
</tr>
</tbody>
</table>

**Term 4**

Select 3 Credits from Option 4

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADM 164</td>
<td>Administrative Office Applications</td>
<td>3</td>
</tr>
<tr>
<td>BCA 111</td>
<td>Emerging Technologies</td>
<td>3</td>
</tr>
<tr>
<td>BCA 250</td>
<td>Desktop Publishing</td>
<td>3</td>
</tr>
<tr>
<td>ADM 265</td>
<td>Supervised Practical Experience</td>
<td>2</td>
</tr>
<tr>
<td>ADM 937</td>
<td>Prof Office Careers Seminar</td>
<td>1</td>
</tr>
<tr>
<td>Any ACC course (except adjunct)</td>
<td></td>
<td>Opt 4</td>
</tr>
<tr>
<td>Any BUS course (except adjunct)</td>
<td></td>
<td>Opt 4</td>
</tr>
<tr>
<td>Any BCA, CSC, CIS or NET course (except adjunct)</td>
<td></td>
<td>Opt 4</td>
</tr>
<tr>
<td>Any ECN course (except adjunct)</td>
<td></td>
<td>Opt 4</td>
</tr>
<tr>
<td>Any FIN course (except adjt)</td>
<td></td>
<td>Opt 4</td>
</tr>
<tr>
<td>Any MGT course (except adjt)</td>
<td></td>
<td>Opt 4</td>
</tr>
<tr>
<td>Any MKT course (except adjt)</td>
<td></td>
<td>Opt 4</td>
</tr>
<tr>
<td>Any ADM, MTR, MAP course (except adjt)</td>
<td></td>
<td>Opt 4</td>
</tr>
</tbody>
</table>

**Total minimum credits required to complete the AAS degree** .................. 64
Long-Term Care Administrator
(see Certificate Section, page 115)

Agribusiness

The Agribusiness program is designed to prepare students for the rapidly expanding food, fiber and natural resources industry. Students are given an option of emphasizing agronomy, animal science, farm management or agricultural supply and service.

This program provides the student with training in the latest developments in technical agriculture in both the classroom and industry settings. The program also includes on-the-job employment experience in the industry. Classroom and laboratory instruction will occur at the Dallas County Farm location, where the program maintains a crop and livestock operation.

A student who receives the Agribusiness degree is capable of filling an entry-level job as an agronomist, livestock specialist, grain or petroleum marketing specialist. Other job opportunities may be found within the seed, chemical, banking and commodity brokerage industries.

Students with a production agricultural interest will benefit from the broad-based approach the degree provides for an ever-changing industry.

The Agribusiness degree has been designed for those who may enter production agriculture or find employment as a farm management specialist.

The Agribusiness degree offers students transfer opportunities to several four-year institutions. Students should visit with program instructors and counselors for information regarding transfer to four-year institutions and their specific program requirements.

Location: Ankeny
Selected courses in this program are offered at other campuses.

Program Entry Requirements
1. Complete an application for admission.
2. Satisfy the assessment requirement.
3. Attend any required information/registration session.

Students start any term.

Graduation Requirements
To earn an Agribusiness AAS degree, students must complete all course work as prescribed and maintain a 2.0 grade point average.

Required Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AGS 319</td>
<td>Animal Nutrition</td>
<td>3</td>
</tr>
<tr>
<td>AGA 381</td>
<td>Crop Scouting</td>
<td>3</td>
</tr>
<tr>
<td>AGS 323</td>
<td>Animal Nutrition II</td>
<td>3</td>
</tr>
<tr>
<td>AGS 113</td>
<td>Survey of the Animal Industry</td>
<td>3</td>
</tr>
<tr>
<td>AGA 114</td>
<td>Principles of Agronomy</td>
<td>3</td>
</tr>
<tr>
<td>AGS 242</td>
<td>Animal Health</td>
<td>3</td>
</tr>
<tr>
<td>AGA 157</td>
<td>Soil Fertility</td>
<td>1</td>
</tr>
<tr>
<td>AGB 235</td>
<td>Intro to Agricultural Markets</td>
<td>3</td>
</tr>
<tr>
<td>AGP 333</td>
<td>Precision Agriculture Applications</td>
<td>3</td>
</tr>
<tr>
<td>AGA 154</td>
<td>Fundamentals of Soil Science</td>
<td>3</td>
</tr>
<tr>
<td>AGB 101</td>
<td>Agricultural Economics</td>
<td>3</td>
</tr>
<tr>
<td>AGA 284</td>
<td>Pesticide Application Certification</td>
<td>3</td>
</tr>
<tr>
<td>AGB 802</td>
<td>Agribusiness Internship I</td>
<td>2</td>
</tr>
<tr>
<td>AGA 222</td>
<td>Grain Management</td>
<td>2</td>
</tr>
<tr>
<td>AGB 812</td>
<td>Agribusiness Internship II</td>
<td>2</td>
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Option Courses–Select 1 Course from Option 2 and a Minimum of 10 Credits from Option 3

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ACC 131</td>
<td>Principles of Accounting I</td>
<td>4</td>
</tr>
<tr>
<td>ACC 111</td>
<td>Intro to Accounting</td>
<td>3</td>
</tr>
<tr>
<td>ASM 238</td>
<td>Financial Management in Aging Services</td>
<td>3</td>
</tr>
<tr>
<td>ASM 239</td>
<td>Information Systems in Healthcare</td>
<td>2</td>
</tr>
<tr>
<td>ASM 274</td>
<td>Law and Ethics in Healthcare</td>
<td>2</td>
</tr>
<tr>
<td>ASM 278</td>
<td>Management in Senior Care Services</td>
<td>3</td>
</tr>
<tr>
<td>ASM 279</td>
<td>Healthcare Human Resources</td>
<td>3</td>
</tr>
<tr>
<td>ASM 280</td>
<td>Healthcare Delivery Systems</td>
<td>2</td>
</tr>
<tr>
<td>ASM 282</td>
<td>Aging Services</td>
<td>2</td>
</tr>
<tr>
<td>ASM 283</td>
<td>Aging Policies &amp; Government Programs</td>
<td>2</td>
</tr>
<tr>
<td>SOC 225</td>
<td>Social Gerontology/Applications</td>
<td>4</td>
</tr>
<tr>
<td>SOC 226</td>
<td>Issues in Aging</td>
<td>2</td>
</tr>
<tr>
<td>ASM 239</td>
<td>Information Systems in Healthcare</td>
<td>2</td>
</tr>
<tr>
<td>ASM 257</td>
<td>ASM Capstone</td>
<td>2</td>
</tr>
<tr>
<td>ASM 256</td>
<td>Agency Experience</td>
<td>2</td>
</tr>
<tr>
<td>ASM 274</td>
<td>Law and Ethics in Healthcare</td>
<td>3</td>
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</table>

Option Courses

Select a Minimum of 10 Credits from Option 1

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>ACC 131</td>
<td>Principles of Accounting I</td>
<td>1</td>
</tr>
<tr>
<td>ACC 111</td>
<td>Intro to Accounting</td>
<td>1</td>
</tr>
<tr>
<td>ASM 238</td>
<td>Financial Management in Aging Services</td>
<td>1</td>
</tr>
<tr>
<td>ASM 239</td>
<td>Information Systems in Healthcare</td>
<td>1</td>
</tr>
<tr>
<td>ASM 274</td>
<td>Law and Ethics in Healthcare</td>
<td>1</td>
</tr>
</tbody>
</table>

Total minimum credits required to complete this program with either track 68
PROGRAMS AVAILABLE

<table>
<thead>
<tr>
<th>Program</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>CSC 110 Intro to Computers</td>
<td>3</td>
</tr>
<tr>
<td>SDV 153 Pre-Employment Strategies</td>
<td>2</td>
</tr>
<tr>
<td>SPC 101 Fundamentals of Oral Communication</td>
<td>3</td>
</tr>
</tbody>
</table>

Option Courses—Select 1 Course from Options 1, 2, 3 & 4. Select 4 Courses from Option 5

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAT 141 Finite Math</td>
<td>Opt 1</td>
</tr>
<tr>
<td>MAT 772 Applied Math</td>
<td>Opt 1</td>
</tr>
<tr>
<td>ACC 131 Principles of Accounting I</td>
<td>Opt 2</td>
</tr>
<tr>
<td>ACC 111 Introduction to Accounting</td>
<td>Opt 2</td>
</tr>
<tr>
<td>ENG 105 Composition I</td>
<td>Opt 3</td>
</tr>
<tr>
<td>COM 703 Communication Skills</td>
<td>Opt 3</td>
</tr>
<tr>
<td>MGT 145 Human Relations in Business</td>
<td>Opt 4</td>
</tr>
<tr>
<td>PSY 111 Introduction to Psychology</td>
<td>Opt 4</td>
</tr>
<tr>
<td>SOC 110 Introduction to Sociology</td>
<td>Opt 4</td>
</tr>
<tr>
<td>AGS 222 Survey of the Aquaculture Industry</td>
<td>Opt 5</td>
</tr>
<tr>
<td>AGS 225 Swine Science</td>
<td>Opt 5</td>
</tr>
<tr>
<td>AGS 226 Beef Cattle Science</td>
<td>Opt 5</td>
</tr>
<tr>
<td>AGA 211 Grain and Forage Crops</td>
<td>Opt 5</td>
</tr>
<tr>
<td>AGB 331 Agribusiness Management</td>
<td>Opt 5</td>
</tr>
<tr>
<td>AGB 330 Farm Business Management</td>
<td>Opt 5</td>
</tr>
<tr>
<td>AGM 335 Petroleum Products in Agriculture</td>
<td>Opt 5</td>
</tr>
<tr>
<td>BUS 185 Business Law I</td>
<td>Opt 5</td>
</tr>
<tr>
<td>MKT 140 Selling</td>
<td>Opt 5</td>
</tr>
</tbody>
</table>

Total minimum credits required to complete this program: 72

Agribusiness Agronomy, Agribusiness Animal Science, Agribusiness Farm Management & Agribusiness Sales/Service Certificates (see Certificate Section, page 112–113)

Airbrush Art (see Certificate Section, page 113)

American Sign Language Interpreter Training

The American Sign Language Interpreter Training program prepares students for a lifetime of commitment to serving the Deaf Community in the capacity of an ally and an interpreter. All four American Sign Language courses satisfy Liberal Arts core requirements in the Humanities and are widely accepted as foreign language requirements at colleges and universities.

Earning a degree in American Sign Language Interpreting offers many benefits. This demanding and rewarding career offers freelance, part-time and full-time opportunities almost anywhere in the country. Qualified interpreters work in hundreds of thousands of life experience settings. The diversity experienced through serving the Deaf Community is a lifetime of self-journey and discovery.

Location: Ankeny

Program Entry Requirements

1. Complete an application for admission.
2. Satisfy the required COMPASS assessment.
3. Attend any required information/registration session.

Degrees and Diplomas

4. Complete the following courses with a grade of C (not C-) or better in each:
   - ASL 151 (American Sign Language I) or approved equivalent from another college
   - ASL 181 (American Sign Language II) or approved equivalent from another college
   - ITP 123 (Intro to ASL Interpreting)
   - ITP 133 (Deaf Culture and Community)

5. After the COMPASS assessment requirement has been met, initially students will be admitted to the Liberal Arts AA degree program, with a pre-program American Sign Language Interpreter Training major. After term two, applicants will be required to participate in a standardized performance activity with standardized rubrics to demonstrate a minimum level of ASL proficiency. An ASL professor(s) and/or a professor and one qualified representative from the Sign Language Interpreting Community will assess the activity. Students with a minimal level of ASL competency will be admitted to the program.

Students start Fall term.

Graduation Requirements

To earn an American Sign Language AA degree, a student must complete the standard core requirements for the degree, plus the American Sign Language Interpreter Training required courses and maintain a 2.0 grade point average.

Term 1

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>ASL 151 American Sign Language I</td>
<td>5</td>
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<tr>
<td>ENG 105 Composition I</td>
<td>3</td>
</tr>
<tr>
<td>ITP 133 Deaf Culture and Community</td>
<td>3</td>
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</table>

Select 2 Courses from Required Courses (below) and/or Option 1 through 3 (below): 6

Term 2

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ASL 181 American Sign Language II</td>
<td>5</td>
</tr>
<tr>
<td>ITP 123 Intro to ASL Interpreting</td>
<td>3</td>
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Select 2 Courses from Option 4a or 4b: 8

Term 3

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>ASL 251 American Sign Language III</td>
<td>5</td>
</tr>
<tr>
<td>ITP 146 ASL Interp Voice to Sign I</td>
<td>3</td>
</tr>
<tr>
<td>ITP 152 ASL Interp Sign to Voice I</td>
<td>3</td>
</tr>
</tbody>
</table>

Term 4

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASL 291 American Sign Language IV</td>
<td>5</td>
</tr>
<tr>
<td>ITP 148 ASL Interp Voice to Sign II</td>
<td>3</td>
</tr>
<tr>
<td>ITP 154 ASL Interp Sign to Voice II</td>
<td>3</td>
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</tbody>
</table>

Select 2 Courses from Required Courses (below) and/or Option 1 through 4: 6

Term 5

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ITP 932 Internship</td>
<td>6</td>
</tr>
<tr>
<td>ITP 190 Ethics in ASL Interpreting</td>
<td>3</td>
</tr>
</tbody>
</table>

Select 2 Courses from Required Courses (below) and/or Option 1 through 4: 6

Total Minimum Credits for American Sign Language Interpreter Training AA degree: 76

VISIT US ONLINE: www.DMACC.edu 57
Architectural Technologies

The Architectural Technologies program is designed to develop the proper manual and computer skills and knowledge required for satisfactory entrance into the field of architectural drafting and detailing. Graduates are employed by architects; structural, mechanical and electrical engineers; contractors, subcontractors and building equipment and material suppliers. Students visit a construction site to observe actual construction practices and architectural offices to experience their future work environment.

**Location:** Ankeny

**Program Entry Requirements**
1. Complete an application for admission.
2. Satisfy the assessment requirement.
3. Attend any required information/registration session.
4. Submit evidence of grade “C” or above in one year of high school Algebra or the equivalent (DMACC Academic Achievement Center Algebra I & II or MAT 063).

**Students start Summer term.**

NOTE: BCA 113 has a prerequisite of CSC 110 Introduction to Computers.

The requirement for MAT 772 & 773 can be fulfilled with evidence of a grade of “C” or above in MAT 130 or an equivalent mathematics course; and a COMPASS Trigonometry score of 35. When students meet their math requirement this way, additional credits to meet the 65-credit program requirement must come from courses in Option 1 or as approved by the program chair.

**Graduation Requirements**
To earn an Architectural Technologies diploma or AAS degree, students must complete all course work as prescribed and maintain a 2.0 (C) grade point average.

**Term 1**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARC 114</td>
<td>Architectural Drafting I</td>
<td>5</td>
</tr>
<tr>
<td>ARC 165</td>
<td>Materials &amp; Assemblies I</td>
<td>3</td>
</tr>
<tr>
<td>ARC 116</td>
<td>Construction Estimating</td>
<td>2</td>
</tr>
<tr>
<td>CAD 119</td>
<td>Intro to Computer Aided Drafting</td>
<td>3</td>
</tr>
</tbody>
</table>

**Architectural Millwork**

The Architectural Millwork program will give students the training to produce one-of-a-kind cabinetry, millwork (wood trim) and solid surface products, such as solid surface counter tops. Students will receive classroom instruction as well as hands-on training and experience using modern millwork equipment. Graduates of the program will earn a diploma, which will prepare them for entry-level positions in the architectural millwork field.

**Location:** Ankeny

**Program Entry Requirements**
1. Complete an application for admission.
2. Satisfy the assessment requirement.
3. Attend any required information/registration session.

**Students start Fall term.**

**Graduation Requirements**
To earn an Architectural Millwork diploma, complete all course work as prescribed and maintain a 2.0 (C) grade point average.

**Total credits required to complete this program ........... 43**

**Architectural Millwork**

The Architectural Millwork program will give students the training to produce one-of-a-kind cabinetry, millwork (wood trim) and solid surface products, such as solid surface counter tops. Students will receive classroom instruction as well as hands-on training and experience using modern millwork equipment. Graduates of the program will earn a diploma, which will prepare them for entry-level positions in the architectural millwork field.

**Location:** Ankeny

**Program Entry Requirements**
1. Complete an application for admission.
2. Satisfy the assessment requirement.
3. Attend any required information/registration session.

**Students start Fall term.**

**Graduation Requirements**
To earn an Architectural Millwork diploma, complete all course work as prescribed and maintain a 2.0 (C) grade point average.

**Term 1**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MLW 440</td>
<td>Blueprint Reading and Layout</td>
<td>3</td>
</tr>
<tr>
<td>MLW 441</td>
<td>Material Identification and Usage</td>
<td>3</td>
</tr>
<tr>
<td>MLW 442</td>
<td>Introduction to Portable Tools</td>
<td>3</td>
</tr>
</tbody>
</table>

**Architectural Millwork**

The Architectural Millwork program will give students the training to produce one-of-a-kind cabinetry, millwork (wood trim) and solid surface products, such as solid surface counter tops. Students will receive classroom instruction as well as hands-on training and experience using modern millwork equipment. Graduates of the program will earn a diploma, which will prepare them for entry-level positions in the architectural millwork field.

**Location:** Ankeny

**Program Entry Requirements**
1. Complete an application for admission.
2. Satisfy the assessment requirement.
3. Attend any required information/registration session.

**Students start Fall term.**

**Graduation Requirements**
To earn an Architectural Millwork diploma, complete all course work as prescribed and maintain a 2.0 (C) grade point average.

**Term 1**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MLW 440</td>
<td>Blueprint Reading and Layout</td>
<td>3</td>
</tr>
<tr>
<td>MLW 441</td>
<td>Material Identification and Usage</td>
<td>3</td>
</tr>
<tr>
<td>MLW 442</td>
<td>Introduction to Portable Tools</td>
<td>3</td>
</tr>
</tbody>
</table>

**Architectural Millwork**

The Architectural Millwork program will give students the training to produce one-of-a-kind cabinetry, millwork (wood trim) and solid surface products, such as solid surface counter tops. Students will receive classroom instruction as well as hands-on training and experience using modern millwork equipment. Graduates of the program will earn a diploma, which will prepare them for entry-level positions in the architectural millwork field.

**Location:** Ankeny

**Program Entry Requirements**
1. Complete an application for admission.
2. Satisfy the assessment requirement.
3. Attend any required information/registration session.

**Students start Fall term.**

**Graduation Requirements**
To earn an Architectural Millwork diploma, complete all course work as prescribed and maintain a 2.0 (C) grade point average.

**Term 1**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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</tr>
</thead>
<tbody>
<tr>
<td>MLW 440</td>
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<td>3</td>
</tr>
<tr>
<td>MLW 441</td>
<td>Material Identification and Usage</td>
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</tr>
<tr>
<td>MLW 442</td>
<td>Introduction to Portable Tools</td>
<td>3</td>
</tr>
</tbody>
</table>

**Architectural Millwork**

The Architectural Millwork program will give students the training to produce one-of-a-kind cabinetry, millwork (wood trim) and solid surface products, such as solid surface counter tops. Students will receive classroom instruction as well as hands-on training and experience using modern millwork equipment. Graduates of the program will earn a diploma, which will prepare them for entry-level positions in the architectural millwork field.

**Location:** Ankeny

**Program Entry Requirements**
1. Complete an application for admission.
2. Satisfy the assessment requirement.
3. Attend any required information/registration session.

**Students start Fall term.**

**Graduation Requirements**
To earn an Architectural Millwork diploma, complete all course work as prescribed and maintain a 2.0 (C) grade point average.

**Term 1**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MLW 440</td>
<td>Blueprint Reading and Layout</td>
<td>3</td>
</tr>
<tr>
<td>MLW 441</td>
<td>Material Identification and Usage</td>
<td>3</td>
</tr>
<tr>
<td>MLW 442</td>
<td>Introduction to Portable Tools</td>
<td>3</td>
</tr>
</tbody>
</table>
Auto Collision Technology

The Auto Collision Technology program is designed to prepare students for employment in the highly technological auto collision industry and to update those already employed. The Auto Collision diploma option prepares graduates for entry into auto collision jobs related to paint, refinishing and major structural repairs. In addition, individual courses may be taken to satisfy the person who wants only specific segments of the complete program.

Location: Ankeny

Program Entry Requirements
1. Complete an application for admission.
2. Satisfy the assessment requirement.
3. Attend any required information/registration session.

Students start Fall or Spring term.

Graduation Requirements
To earn an Automotive Collision Technology diploma or AAS degree, a student must complete all course work as prescribed and maintain a 2.0 grade point average.

Auto Collision–Diploma

Required Courses
- CRR 403 Basic Shop Safety 1
- CRR 325 Sheet Metal Fundamentals 5
- CRR 841 Principles of Refinishing 5
- CRR 742 Estimating Theory 2
- CRR 877 Refinishing Applications 7
- CRR 202 Plastic Repair 3
- CRR 502 Frame Damage Analysis 2
- CRR 876 Refinishing Production 6
- CRR 760 Advanced Estimating 2
- CRR 655 Advanced Collision Repair 5
- COM 703 Communication Skills 3
- MAT 772 Applied Math 3
- CRR 101 Sheet Metal Welding 2

Total credits required to complete the diploma............. 48

Additional Courses Required to Complete this Program
- HIS 112 Western Civ: Ancient to Early Modern 4
- HIS 113 Western Civ: Early Modern to Present 4
- BCA 113 Computer Network Literacy 3
- ARC 190 Presentation Graphics Opt 2 3
- CAD 162 Introduction to Multimedia Opt 2 3
- ENG 106 Composition II Opt 3 3
- ENG 108 Comp II: Technical Writing Opt 3 3

Total credits required to complete the AAS degree ........ 65

Auto Collision–AAS

Required Courses
- CRR 150 Basic Shop Safety 1
- CRR 325 Sheet Metal Fundamentals 5
- CRR 841 Principles of Refinishing 5
- CRR 742 Estimating Theory 2
- CRR 877 Refinishing Applications 7
- CRR 202 Plastic Repair 3
- CRR 502 Frame Damage Analysis 2
- CRR 876 Refinishing Production 6
- CRR 760 Advanced Estimating 2
- CRR 655 Advanced Collision Repair 5
- AUT 615 Auto Electricity/Electronics 4
- AUT 652 Advanced Automotive Electricity 3
- AUT 704 Auto Heating & AC 4
- AUT 524 Auto Brake Systems & Service 4
- AUT 404 Basic Suspension & Steering 4
- COM 703 Communication Skills 3
- HSC 102 Emergency Care 1
- MAT 772 Applied Math 3
- PHY 710 Technical Physics 3
- CRR 101 Sheet Metal Welding 2

Option Courses
Select 1 Course from Each Option
- MGT 145 Human Relations in Business Opt 1 3
- PSY 102 Human and Work Relations Opt 1 3
- PSY 111 Introduction to Psychology Opt 1 3
- SOC 110 Introduction to Sociology Opt 1 3
- BUS 148 Small Business Management Opt 2 3
- BUS 185 Business Law I Opt 2 3

Total credits required to complete the AAS degree ........ 75
Programs Available

Auto Mechanics Technology

The Auto Mechanics Technology program is designed to prepare students for employment in the high-technology automotive service industry and to update those already employed.

The Auto Mechanics Technology Associate of Applied Science (AAS) degree program is a comprehensive training program designed to cover all aspects of automotive repair. Graduates with an AAS degree find employment in dealerships, independent service facilities, corporate repair facilities and automotive parts establishments. They are employed as automotive technicians, insurance claims adjusters, automotive instructors, parts specialists and repair technicians in related fields.

There are three separate diploma options that can be taken individually or in combination. One option prepares graduates for job entry in current automotive technology tune-up and engine repair. Another option prepares graduates to enter the automotive industry trained in the latest power train and chassis repair techniques. A third option prepares graduates to enter the automotive industry as a maintenance and light repair technician. Diploma recipients may receive an AAS degree by completing the additional courses required for the Auto Mechanics Technology AAS degree.

Location: Ankeny
Selected courses offered at the other campuses.
Auto Maintenance & Light Repair diploma is available only at the Urban Campus.

Program Entry Requirements
1. Complete an application for admission.
2. Satisfy the assessment requirement.
3. Attend any required information/registration session.

Ankeny Campus students start Fall and Spring term.
Urban Campus students start Fall term.

Graduation Requirements
To earn a diploma in Auto Engines and Tune-Up, Auto Chassis and Power Train or Maintenance Light Repair, or an AAS degree in Auto Mechanics Technology, a student must complete all course work as prescribed and maintain a 2.0 grade point average.

Auto Engines & Tune-Up

This diploma option prepares graduates for job entry in current automotive technology tune-up and engine repair.

Required Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AUT 114</td>
<td>Shop Fund &amp; Minor Service</td>
<td>4</td>
</tr>
<tr>
<td>AUT 834</td>
<td>Automotive Fuel Systems</td>
<td>4</td>
</tr>
<tr>
<td>AUT 615</td>
<td>Auto Electricity/Electronics</td>
<td>4</td>
</tr>
<tr>
<td>AUT 652</td>
<td>Advanced Automotive Electricity</td>
<td>3</td>
</tr>
<tr>
<td>AUT 704</td>
<td>Auto Heating &amp; AC</td>
<td>4</td>
</tr>
<tr>
<td>AUT 163</td>
<td>Automotive Engine Repair</td>
<td>3</td>
</tr>
<tr>
<td>AUT 842</td>
<td>Auto Computerized Eng Controls</td>
<td>3</td>
</tr>
<tr>
<td>AUT 823</td>
<td>Advanced Automotive Tune-Up</td>
<td>4</td>
</tr>
<tr>
<td>AUT 870</td>
<td>Automotive Service Management</td>
<td>2</td>
</tr>
<tr>
<td>AUT 173</td>
<td>Advanced Automotive Engine Repair</td>
<td>3</td>
</tr>
<tr>
<td>COM 703</td>
<td>Communication Skills</td>
<td>3</td>
</tr>
</tbody>
</table>

Total credits required to complete Engines & Tune-Up diploma......................................... 44

Auto Chassis & Power Train

This diploma option prepares graduates to enter the automotive industry in the latest power train and chassis repair techniques.

Required Courses—Select 1 Course from Option 1

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AUT 114</td>
<td>Shop Fund &amp; Minor Service</td>
<td>4</td>
</tr>
<tr>
<td>AUT 242</td>
<td>Basic Automotive Power Train</td>
<td>6</td>
</tr>
<tr>
<td>AUT 524</td>
<td>Auto Brake Systems &amp; Service</td>
<td>4</td>
</tr>
<tr>
<td>AUT 404</td>
<td>Basic Suspension &amp; Steering</td>
<td>4</td>
</tr>
<tr>
<td>AUT 243</td>
<td>Advanced Automotive Power Train</td>
<td>6</td>
</tr>
<tr>
<td>AUT 535</td>
<td>Advanced Auto Brakes &amp; Alignment</td>
<td>5</td>
</tr>
<tr>
<td>COM 703</td>
<td>Communication Skills</td>
<td>3</td>
</tr>
<tr>
<td>HSC 102</td>
<td>Emergency Care</td>
<td>1</td>
</tr>
<tr>
<td>MGT 145</td>
<td>Human Relations in Business</td>
<td>Opt 1</td>
</tr>
<tr>
<td>PSY 111</td>
<td>Introduction to Psychology</td>
<td>Opt 1</td>
</tr>
<tr>
<td>PSY 102</td>
<td>Human and Work Relations</td>
<td>Opt 1</td>
</tr>
<tr>
<td>SOC 110</td>
<td>Introduction to Sociology</td>
<td>Opt 1</td>
</tr>
</tbody>
</table>

Total credits required for Chassis & Power Train diploma............................................... 36

Automotive Maintenance & Light Repair Technology at the Urban Campus

This diploma option prepares graduates for a career in automotive maintenance and minor repair. This will include the light repair and maintenance of electrical systems, brakes, suspension, steering, alignment, heating, air conditioning and engines.

Required Courses—Select 1 Course from Option 1

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AUT 114</td>
<td>Shop Fund &amp; Minor Service</td>
<td>4</td>
</tr>
<tr>
<td>AUT 615</td>
<td>Auto Electricity/Electronics</td>
<td>4</td>
</tr>
<tr>
<td>AUT 652</td>
<td>Advanced Automotive Electricity</td>
<td>3</td>
</tr>
<tr>
<td>AUT 704</td>
<td>Auto Heating &amp; AC</td>
<td>4</td>
</tr>
<tr>
<td>AUT 163</td>
<td>Automotive Engine Repair</td>
<td>3</td>
</tr>
<tr>
<td>AUT 870</td>
<td>Automotive Service Management</td>
<td>2</td>
</tr>
<tr>
<td>AUT 524</td>
<td>Auto Brake Systems &amp; Service</td>
<td>4</td>
</tr>
<tr>
<td>AUT 404</td>
<td>Basic Suspension &amp; Steering</td>
<td>4</td>
</tr>
<tr>
<td>AUT 535</td>
<td>Advanced Auto Brakes &amp; Alignment</td>
<td>5</td>
</tr>
<tr>
<td>COM 703</td>
<td>Communication Skills</td>
<td>3</td>
</tr>
<tr>
<td>HSC 102</td>
<td>Emergency Care</td>
<td>1</td>
</tr>
<tr>
<td>MAT 772</td>
<td>Applied Math</td>
<td>3</td>
</tr>
<tr>
<td>MGT 145</td>
<td>Human Relations in Business</td>
<td>Opt 1</td>
</tr>
<tr>
<td>PSY 111</td>
<td>Introduction to Psychology</td>
<td>Opt 1</td>
</tr>
<tr>
<td>PSY 102</td>
<td>Human and Work Relations</td>
<td>Opt 1</td>
</tr>
<tr>
<td>SOC 110</td>
<td>Introduction to Sociology</td>
<td>Opt 1</td>
</tr>
</tbody>
</table>

Total credits required for Auto Maintenance & Light Repair diploma..................................... 43
Programs Available

Automotive Mechanics Technology–AAS degree

Required Courses—Select 1 Course from Option 1

- AUT 114 Shop Fund & Minor Service 4
- AUT 834 Automotive Fuel Systems 4
- AUT 615 Auto Electricity/Electronics 4
- AUT 652 Advanced Automotive Electricity 3
- AUT 704 Auto Heating & AC 4
- AUT 163 Automotive Engine Repair 3
- AUT 842 Auto Computerized Eng Controls 4
- AUT 845 Electrical Systems Diagnosis 2
- AUT 823 Advanced Automotive Tune-Up 4
- AUT 870 Automotive Service Management 2
- AUT 173 Advanced Automotive Engine Repair 3
- AUT 242 Basic Automotive Power Train 6
- AUT 524 Auto Brake Systems & Service 4
- AUT 404 Basic Suspension & Steering 4
- AUT 243 Advanced Automotive Power Train 6
- AUT 535 Advanced Auto Brakes & Alignment 5
- HSC 102 Emergency Care 1
- COM 703 Communication Skills 3
- MAT 772 Applied Math 3
- PHY 710 Technical Physics 3
- MGT 145 Human Relations in Business Opt 1 3
- PSY 111 Introduction to Psychology Opt 1 3
- PSY 102 Human and Work Relations Opt 1 3
- SOC 110 Introduction to Sociology Opt 1 3

Total credits required for the Auto Mechanics AAS degree........................................75

Biomass Operations Technology
(see Certificate Section, page 113)

Biotechnology

The Biotechnology program is designed to prepare students to work as biotechnology technicians in this rapidly expanding field that spans many different disciplines including: agriculture, environmental products, medical diagnostic tests and treatments, industrial products and criminal investigation. Technicians may work in the areas of laboratory research, product development, quality control, manufacturing and testing. Specific career opportunities could require skills related to genetic engineering of plants or microorganisms, gene therapy to correct human health problems, DNA fingerprinting, vaccine development, or production of food, drugs and other consumer products.

The program is structured to allow students to develop marketable job skills while incorporating the requirements for a two-year Liberal Arts degree. Most of the credits will transfer to four-year institutions. The program includes many lab-based courses, which enables students to apply what they learn in chemistry, math and statistics, biology, microbiology, genetics and molecular biology. Specific skills such as written and oral communications, critical thinking, problem-solving, computer skills and small group collaboration are an integral part of the program. Students participate in internships in cooperation with potential employers.

Degrees and Diplomas

Students planning to transfer to a four-year program after completion of this program should take CHM 165 and 175 instead of CHM 122 and 132. CHM 263 and 273 may also be taken depending on the program being considered. In addition, many four-year programs will require calculus (MAT 211 and/or 217) and physics (PHY 213 and 223), which can be taken at DMACC. Additional credit hours in humanities and the social sciences may also be helpful. Please check with the program chairperson for Biotechnology or an advisor for additional information or assistance.

Location: Ankeny
Selected courses in this program are offered at other campuses.

Program Entry Requirements
1. Complete an application for admission.
2. Satisfy the assessment requirement.
3. Attend any required information/registration session.
4. Must submit proof of one year of high school Chemistry or Academic Achievement Chemistry I & II or successful completion of CHM 122.
5. Must submit proof of two years of high school Algebra or MAT 063 & MAT 073.
6. Demonstrate satisfactory writing skills on college entrance or assessment exam.

Students start Fall or Spring term.

Graduation Requirements
To earn a Biotechnology AS degree, a student must complete all course work as prescribed and maintain a 2.0 grade point average.

Required Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>BIO 104</td>
<td>Introductory Biology w/Lab</td>
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</tr>
<tr>
<td>ENG 105</td>
<td>Composition I</td>
<td>3</td>
</tr>
<tr>
<td>BIO 112</td>
<td>General Biology I</td>
<td>4</td>
</tr>
<tr>
<td>ENG 106</td>
<td>Composition II</td>
<td>3</td>
</tr>
<tr>
<td>MAT 157</td>
<td>Statistics</td>
<td>4</td>
</tr>
<tr>
<td>BIO 113</td>
<td>General Biology II</td>
<td>4</td>
</tr>
<tr>
<td>BIO 187</td>
<td>Microbiology w/Lab</td>
<td>4</td>
</tr>
<tr>
<td>SPC 101</td>
<td>Fundamentals of Oral Communication</td>
<td>3</td>
</tr>
<tr>
<td>BIO 250</td>
<td>Cell &amp; Molecular Biology-Nucleic Acids</td>
<td>5</td>
</tr>
<tr>
<td>BIO 251</td>
<td>Cell and Molecular Biology-Proteins</td>
<td>5</td>
</tr>
<tr>
<td>BIO 146</td>
<td>Genetics</td>
<td>3</td>
</tr>
<tr>
<td>BIO 249</td>
<td>Biotechnology Internship</td>
<td>3</td>
</tr>
</tbody>
</table>

Option Courses—Select 3 Credits from Option 1

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
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</thead>
<tbody>
<tr>
<td>AA/AS Core Humanities</td>
<td></td>
<td>Opt 1 3</td>
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</tbody>
</table>

Select 6 Credits from Option 2

<table>
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<tr>
<th>Course</th>
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<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>AA/AS Core Social &amp; Behavioral Sciences</td>
<td></td>
<td>Opt 2 6</td>
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</table>

Select 1 Course from Option 3

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>CSC 110</td>
<td>Intro to Computers</td>
<td>Opt 3 3</td>
</tr>
<tr>
<td>ENG 108</td>
<td>Comp II: Technical Writing</td>
<td>Opt 3 3</td>
</tr>
</tbody>
</table>
PROGRAMS AVAILABLE

Select 2 Courses from Option 4
OR 2 Courses from Option 5

CHM 122* Intro to General Chemistry Opt 4 4
CHM 132* Intro Organic/Biochemistry Opt 4 4
CHM 165 General/Inorg Chemistry I Opt 5 4
CHM 175 General/Inorg Chemistry II Opt 5 4

*Students who plan to transfer to a four-year school should take CHM 165 and 175 in place of CHM 122 & 132.

Total minimum credits required to complete this program .................. 64

Business

Students planning to major in business administration or related fields at a four-year college/university can satisfy many of their general education requirements at Des Moines Area Community College. Since degree requirements vary at senior institutions, students should become familiar with the specific course requirements of their selected transfer institution. Students are also encouraged to contact the four-year major advisor as early as possible to develop a transfer plan. DMACC advisors and/or counselors can also help by providing transfer materials and course planning assistance.

Business Administration—AA or AS

The Business Administration program offers the student a number of career and educational opportunities. The program allows students to choose either an AA or AS degree. Students who plan to transfer to a four-year college or university should consider the AA degree. The AA degree will satisfy most freshman and sophomore Business Administration requirements of four-year colleges if planned carefully with an advisor. The AS degree is designed for students who want to prepare for an immediate career in business.

Unique features of the Business Administration curriculum include an introduction to American and international business practices, accounting practices and business law concepts. The Student Development Office can provide course check sheets from the various colleges, identifying which DMACC courses should be taken for college transfer. Students planning on transferring to a four-year college should contact a counselor or advisor for course planning assistance.

Locations: Ankeny, Boone, Carroll, Newton, Urban, West, Online

Program Entry Requirements
1. Complete an application for admission.
2. Satisfy the assessment requirements.
3. Attend any required information/registration session.

Students may start any term.

Graduation Requirements
To earn a Business Administration AA or AS degree, a student must complete the standard core requirements for the degree, plus the Business Administration required courses and maintain a 2.0 grade point average.

AA degree

Required Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACC 131</td>
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</tr>
<tr>
<td>ACC 132</td>
<td>4</td>
</tr>
<tr>
<td>BUS 102</td>
<td>3</td>
</tr>
<tr>
<td>BUS 220</td>
<td>3</td>
</tr>
<tr>
<td>BUS 185</td>
<td>3</td>
</tr>
<tr>
<td>ECN 120*</td>
<td>3</td>
</tr>
<tr>
<td>ECN 130*</td>
<td>3</td>
</tr>
</tbody>
</table>

* ECN 120 and ECN 130 are required courses for this program and shall also be used to fulfill 3 credits of Social & Behavioral Sciences AA Core and 3 credits of Distributive AA Core.
Complete Remaining AA degree
Core Requirements as follows:

Communications 9
Social & Behavioral Sciences 9
(6 credits + 3 credits for ECN 120 from above)
Math & Sciences 9
(Complete with the four-year institution before selecting your math and science courses because certain courses are prerequisites to admission into the College of Business at different colleges and universities.)
Math & Sciences (6 credits + 3 credits for ECN 130 from above)

Total minimum credits for
Business Administration AA degree ..................................... 65

AS degree

Required Courses

ACC 131 Principles of Accounting I 4
ACC 132 Principles of Accounting II 4
BUS 102 Intro to Business 3
BUS 220 Intro to International Business 3
BUS 185 Business Law I 3
CSC 110 Intro to Computers 3
ECN 120 Principles of Macroeconomics 3
ECN 130 Principles of Microeconomics 3

NOTE: ECN 120 and ECN 130 can be used to satisfy the Social & Behavioral Sciences component of the AS Core. Students choosing this option will need to complete an additional 6 credit hours from either AS degree core courses or General Business Option Courses to meet program requirements.

Select 3 Courses from Option 1 below

FIN 121 Personal Finance Opt 1 3
FIN 101 Principles of Banking Opt 1 3
FIN 180 Intro to Investments Opt 1 3
BUS 231 Quantitative Methods/Bus Decisions Opt 1 4
BUS 260 Introduction to Insurance Opt 1 3
BUS 148 Small Business Management Opt 1 3
BUS 186 Business Law II Opt 1 3
MGT 101 Principles of Management Opt 1 3
MGT 248 Systems & Info Management Opt 1 3
MKT 110 Principles of Marketing Opt 1 3
BUS 240 Virtual Business Firm Opt 1 3
Elective if needed to satisfy 64 minimum credits 1

Complete AS degree Core Requirements.................................. 28

Total minimum credits for
Business Administration AS degree........................................ 64

Business Information Systems

The Business Information Systems program is intended for the student who is interested in a programming career in a client/server environment or in the areas of electronic commerce or database applications. This is especially true of the career opportunities in the PC-related programming fields, as well as the newer fields of electronic commerce and databases.

The BIS degree will allow a student to study a variety of different areas related to PC programming and related applications. This program emphasizes flexibility to allow a student to take courses that relate to specific areas of interest. It is also possible for the student to take course work from several different but related areas of study. For example, many electronic commerce applications use databases as an integral part of their business. These combined skills will give the student a more marketable background.

Information Technology careers require more diversity of skills and abilities than in the past. Employers are looking for employees with a variety of skills in related areas. Many projects today require a variety of computer-related skills and business knowledge. This degree will address those demands through more flexible course selection and exposure to a variety of programming skills and tools.

Location: Ankeny, Newton, Urban, West
Selected courses in this program are offered at other campuses.

Program Entry Requirements
1. Complete an application for admission.
2. Satisfy the assessment requirement.
3. Attend any required information/registration session.

Students start any term.

Graduation Requirements
To earn a Business Information Systems AAS degree, a student must complete all course work as prescribed and maintain a 2.0 grade point average.

Required Courses

ACC 131 Principles of Accounting I 4
BUS 102 Intro to Business 3
CIS 125 Intro to Programming Logic w/Language 3
CIS 402 COBOL 3
CSC 110 Intro to Computers 3
CIS 604 Visual BASIC 3
BCA 113 Computer Network Literacy 3
CIS 303 Introduction to Data Base 3
CIS 332 Data Base and SQL 3
CIS 505 Structured Systems Analysis 4
MGT 248 Systems & Information Management 3
Any AA/AS degree Core MAT or BUS course 3-4
Programs Available

CAP-Chrysler

The Chrysler Automotive Program (CAP), cosponsored by DMACC and Chrysler LLC Company, is a two-year automotive program designed to upgrade the technical competence and professional level of the incoming Chrysler dealership technician. The curriculum, designed by Chrysler and DMACC, leads to the associate degree in Automotive Technology. The program involves classroom lecture, laboratory experience and dealership work experience.

Location: Ankeny

Program Entry Requirements
1. Complete an application for admission.
2. Satisfy the assessment requirement, aptitude and ability tests.
3. Be accepted by Chrysler as a participant.
4. All program participants must be employed by a participating Chrysler, Dodge or Jeep dealership.

Students start in October each year. Students interested in a late start should contact the program chairperson.

Graduation Requirements
To earn a CAP-Chrysler AAS degree, a student must complete all course work as prescribed and maintain a 2.0 grade point average.

Required Courses

Term 1
- AUT 615 Auto Electricity/Electronics 4
- AUT 114 Shop Fund & Minor Service 4
- AUT 524 Auto Brake Systems & Service 4
- MAT 772 Applied Math 3

Term 2
- AUT 404 Basic Suspension & Steering 4
- AUT 704 Auto Heating & AC 4
- COM 703 Communication Skills 3
- PSY 102 Human and Work Relations 3
- ATC 320 Technical Internship I 3

Term 3
- ATC 330 Technical Internship II 3
- ATC 335 Service/Repair Chrysler Engines 5
- ATC 336 Chrysler Fuel Systems 3

Term 4
- ATC 346 Chrysler Engine Performance 5
- ATC 328 Chrysler Electrical Systems Repair 4
- PHY 710 Technical Physics 3
- ATC 340 Technical Internship III 3

Term 5
- ATC 350 Technical Internship IV 3
- ATC 354 Chrysler Manual Drivetrains 4
- ATC 355 Chrysler Automatic Drivetrains 4
- ATC 356 Advanced Chrysler Systems 5

Term 6
- ATC 360 Technical Internship V 2

Total minimum credits required to complete this program................................. 76
Programs Available

Students start any term.

Graduation Requirements
To earn a Caterpillar Technology AAS degree, a student must complete all course work as prescribed and maintain a 2.0 grade point average.

Required Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>DSL 356</td>
<td>Diesel Engines I</td>
<td>6</td>
</tr>
<tr>
<td>DSL 366</td>
<td>Diesel Engines II</td>
<td>6</td>
</tr>
<tr>
<td>DSL 546</td>
<td>Power Trains I</td>
<td>6</td>
</tr>
<tr>
<td>DSL 605</td>
<td>Hydraulics and Brakes</td>
<td>5</td>
</tr>
<tr>
<td>DSL 145</td>
<td>Basic Electricity</td>
<td>5</td>
</tr>
<tr>
<td>DSL 733</td>
<td>Air Conditioning</td>
<td>3</td>
</tr>
<tr>
<td>DSL 830</td>
<td>Operation and Maintenance</td>
<td>5</td>
</tr>
<tr>
<td>DSL 555</td>
<td>Power Trains II</td>
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<tr>
<td>DSL 409</td>
<td>Diesel Electronics</td>
<td>5</td>
</tr>
<tr>
<td>CAT 430</td>
<td>Caterpillar Fuel Systems</td>
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</tr>
<tr>
<td>CAT 431</td>
<td>Caterpillar Failure Analysis</td>
<td>2</td>
</tr>
<tr>
<td>CAT 432</td>
<td>Caterpillar LS/PC Hydraulics</td>
<td>2</td>
</tr>
<tr>
<td>CAT 433</td>
<td>Caterpillar Service Information System</td>
<td>2</td>
</tr>
<tr>
<td>DSL 155</td>
<td>Advanced Electricity</td>
<td>4</td>
</tr>
<tr>
<td>CAT 434</td>
<td>Caterpillar Internship</td>
<td>4</td>
</tr>
<tr>
<td>CAT 435</td>
<td>Caterpillar Multi-Media</td>
<td>2</td>
</tr>
<tr>
<td>AUT 140</td>
<td>Welding for Automotive Mechanics</td>
<td>2</td>
</tr>
</tbody>
</table>

Option Courses—Select 1 Course from Each Option

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>COM 703</td>
<td>Communication Skills</td>
<td>Opt 1</td>
</tr>
<tr>
<td>ENG 105</td>
<td>Composition I</td>
<td>Opt 1</td>
</tr>
<tr>
<td>MAT 141</td>
<td>Finite Math</td>
<td>Opt 2</td>
</tr>
<tr>
<td>MAT 772</td>
<td>Applied Math</td>
<td>Opt 2</td>
</tr>
<tr>
<td>MAT 130</td>
<td>Trigonometry</td>
<td>Opt 2</td>
</tr>
<tr>
<td>MGT 145</td>
<td>Human Relations in Business</td>
<td>Opt 3</td>
</tr>
<tr>
<td>PSY 111</td>
<td>Introduction to Psychology</td>
<td>Opt 3</td>
</tr>
<tr>
<td>PSY 102</td>
<td>Human and Work Relations</td>
<td>Opt 3</td>
</tr>
<tr>
<td>SOC 110</td>
<td>Introduction to Sociology</td>
<td>Opt 3</td>
</tr>
<tr>
<td>PHY 710</td>
<td>Technical Physics</td>
<td>Opt 4</td>
</tr>
<tr>
<td>PHY 106</td>
<td>Survey of Physics</td>
<td>Opt 4</td>
</tr>
</tbody>
</table>

Total credits required to complete AAS degree ............... 80

Chemical Dependency Counseling
(see Certificate Section, page 113)

Civil Engineering Technology
The Civil Engineering Technology program prepares the student for a career as a technician in the areas of design, surveying, construction and materials testing. This is designed to be a two-year degree program.

This program is designed to fill an increasing demand for technically skilled people in the civil engineering technology field, and demand is expected to continue well into the 21st century.

Career opportunities with this degree are with construction firms; surveying firms; consulting engineering firms; federal, state and local government agencies; materials testing labs and many other areas of the private sector that support the transportation industry.

Location: Boone

Program Entry Requirements
1. Complete an application for admission.
2. Satisfy the assessment requirement.
3. Attend any required information/registration session.
4. Students must have earned a grade of “C” or above in a high school Algebra course, or be placed in MAT 773 by the results of a COMPASS test. If students are not placed in MAT 773, they will be required to take remedial math courses to be brought up to the level of MAT 773 before taking that course.

This program is designed to start in the Fall semester.
Students who desire to start other terms may be accepted, but may not graduate in four semesters due to the sequencing of course work. If starting other than Fall, please contact the Civil Engineering Technology department.

Terms 1–3 of the Civil Engineering AAS degree are identical to Terms 1–3 of the Land Surveying AAS degree. Prior to the start of Term 4, students must choose the Civil Engineering emphasis or the Land Surveying emphasis. Students who were accepted into the Civil Engineering program must contact the Counseling/Advising office to switch their major to Land Surveying.

Graduation Requirements
To earn a Civil Engineering Technology AAS degree, a student must complete all course work as prescribed and maintain a 2.0 grade point average.

Required Courses

<table>
<thead>
<tr>
<th>Term</th>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>CET 102</td>
<td>Fundamentals of Civil Engineering</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>CET 119</td>
<td>Survey I</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>CET 135</td>
<td>Materials I</td>
<td>3</td>
</tr>
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<td></td>
<td>MAT 773</td>
<td>Applied Math II</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>CSC 110</td>
<td>Intro to Computers</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Select 1 Course from Option 1 or 2 (see Option Courses below)</td>
<td>3</td>
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</table>

Term 2

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CET 138</td>
<td>Construction I</td>
<td>3</td>
</tr>
<tr>
<td>CET 178</td>
<td>Automated Design I</td>
<td>4</td>
</tr>
<tr>
<td>CET 169</td>
<td>Survey II</td>
<td>4</td>
</tr>
<tr>
<td>Select 1 Course from Option 1 or 2 (see Option Courses below)</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

Select 1 AAS Social/Behavioral Sciences general requirement (Opt. 3) 3
Commercial Horticulture

The Commercial Horticulture program provides students with technical training in the broad horticultural field through classroom, greenhouse, turf lab, tree nursery and practical on-the-job employment experiences.

Graduates of the program will be capable of filling jobs in fields such as greenhouse operator and management involving greenhouse production, scheduling and marketing; landscaping involving design, planting and maintaining trees, shrubs, turf and foliage plants for the beautification of home, commercial, public and recreational grounds. Other jobs may include turf management involving establishing, managing and maintaining grassed areas for ornamental and/or recreational purposes; nursery operation and management concerned with the production of trees, shrubs and turf for the purpose of transplanting or propagating them. Employment may also be found in garden center merchandising and management, merchandising of flowers and foliage plants and their design. Certificates of specialization are offered in Greenhouse Production, Landscape Design and Turf Maintenance.

In addition to the required and option courses listed, there are elective courses that may be taken for additional credit. Those courses are AGH 160 Irrigation Systems, AGH 241 Sports Turf.

Location: Ankeny

Program Entry Requirements
1. Complete an application for admission.
2. Satisfy the assessment requirement.
3. Attend any required information/registration session.

Students start any term.

Graduation Requirements
To earn a Commercial Horticulture AAS degree, a student must complete all course work as prescribed and maintain a 2.0 grade point average.

Required Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AGA 157</td>
<td>Soil Fertility*</td>
<td>1</td>
</tr>
<tr>
<td>AGA 154</td>
<td>Fundamentals of Soil Science*</td>
<td>3</td>
</tr>
<tr>
<td>AGH 159</td>
<td>Landscape Drafting</td>
<td>2</td>
</tr>
<tr>
<td>AGH 221</td>
<td>Principles of Horticulture</td>
<td>3</td>
</tr>
<tr>
<td>AGH 142</td>
<td>Construction, Safety &amp; Maintenance</td>
<td>3</td>
</tr>
<tr>
<td>AGH 123</td>
<td>Woody Plant Materials</td>
<td>3</td>
</tr>
<tr>
<td>AGH 132</td>
<td>Introduction to Greenhouse</td>
<td>3</td>
</tr>
<tr>
<td>AGH 111</td>
<td>Intro to Turfgrass Management*</td>
<td>2</td>
</tr>
<tr>
<td>AGH 154</td>
<td>Residential Landscape Design</td>
<td>3</td>
</tr>
<tr>
<td>AGH 805</td>
<td>Horticulture Internship I</td>
<td>2</td>
</tr>
<tr>
<td>AGH 233</td>
<td>Plant Propagation I</td>
<td>3</td>
</tr>
<tr>
<td>AGH 155</td>
<td>Landscape Design II</td>
<td>2</td>
</tr>
<tr>
<td>AGH 121</td>
<td>Insects and Diseases</td>
<td>2</td>
</tr>
<tr>
<td>AGH 120</td>
<td>Herbaceous Plant Materials</td>
<td>3</td>
</tr>
<tr>
<td>AGH 283</td>
<td>Pesticide Application Certification*</td>
<td>2</td>
</tr>
<tr>
<td>SDV 153</td>
<td>Pre-Employment Strategies</td>
<td>2</td>
</tr>
<tr>
<td>AGH 281</td>
<td>Arboriculture</td>
<td>3</td>
</tr>
<tr>
<td>AGH 292</td>
<td>Garden Center Management</td>
<td>3</td>
</tr>
<tr>
<td>AGH 815</td>
<td>Horticulture Internship II</td>
<td>2</td>
</tr>
</tbody>
</table>

AAS degree Required Science course ........................................3

For the Turf Maintenance emphasis, the following course is required

AGH 211 Advanced Turfgrass Management* 3
For the Greenhouse Production emphasis, the following course is required
AGH 133 Greenhouse Production Techniques 3

Option Courses Either Plan–Select 1 Course from Option 1, 2 & 3
MAT 141 Finite Mathematics Opt 1 4
MAT 772 Applied Math* Opt 1 3
ENG 105 Composition I Opt 2 3
COM 703 Communication Skills Opt 2 3
MGT 145 Human Relations in Business Opt 3 3
PSY 111 Introduction to Psychology Opt 3 3
PSY 102 Human and Work Relations Opt 3 3

Either Plan–Select 2 Courses from Option 4
ACC 111 Intro to Accounting Opt 4 3
MKT 140 Selling Opt 4 3
CSC 110 Intro to Computers Opt 4 3

Either Plan–Select 1 Course from Option 5
AGH 262 Fruit and Vegetable Science Opt 5 3
AGH 272 Nursery Production I Opt 5 3

Total minimum credits required for the Greenhouse Production emphasis ....................... 71

Total minimum credits required for the Turf Maintenance emphasis ............................... 71

In addition to the courses required for this degree, students may take the following courses to enhance their background or for personal enrichment:
AGH 160 Irrigation Systems* 2
AGH 241 Sports Turf* 2
AGH 103 Floral Design I 1
AGH 104 Floral Design II 1

(Courses marked with * are required for the Turf Maintenance Certificate)

Computer-Aided Design Technology

Computer-Aided Design (CAD) Technology prepares students for a career in a variety of design and drafting disciplines. The CAD technology student will be exposed to and operate different CAD software packages and related equipment. Students will learn how to create CAD models and drawings to meet international and U.S. customary design and drafting standards.

Students can obtain a one-year diploma or a two-year associate degree in CAD technology. Students enrolled in the one-year diploma will be taught basic drafting and CAD practices with emphasis on entry-level drafting job skills. Students enrolled in the associate degree program will complete the first-year diploma requirements and in the second year apply advanced CAD software operations including three-dimensional parametric (solid) modeling, model/assembly analysis and geometric dimensioning and tolerancing. Associate degree students will also be taught a variety of specialized design and drafting standards that are used in several different industries.

Engineering and manufacturing design and drafting, computer animation, technical publishing and independent CAD contracting are areas where Computer-Aided Design Technology program graduates may find employment.

Location: Ankeny
Selected Ankeny program are offered at other campuses.

Program Entry Requirements
1. Complete an application for admission.
2. Satisfy the assessment requirement.
3. Attend any required information/registration session.
4. Successful completion of CSC 110 (Introduction to Computers) or equivalent, or approval of the program counselor.

Students start Fall term.

Graduation Requirements
To earn a Computer-Aided Design Technology diploma or AAS degree, a student must complete all course work as prescribed and maintain a 2.0 grade point average.

Term 1–Select 1 Course from Option 1
CAD 151 CAD Graphics I 6
CAD 155 Networking Systems Involving CAD 3
MAT 772 Applied Math 3
MGT 145 Human Relations in Business Opt 1 3
PSY 102 Human and Work Relations Opt 1 3

Term 2
MAT 773 Applied Math II 3
MAT 242 Manufacturing Interfaces 3
ENG 105 Composition I 3
CAD 152 CAD Graphics II 6

Term 3
CAD 182 SolidWorks CAD I 3
CAD 196 Engineering Disciplines & Practices 3
CAD 240 Applied Materials and Processes 3

Total credits required to complete the diploma............. 39

Term 4
CAD 153 CAD Applications I 3
CAD 246 Parametric CAD I 3
CAD 215 Mechanical Systems 3
CAD 252 Design Project I 4
ENG 108 Comp II: Technical Writing 3

Term 5
CAD 148 Introduction to Finite Elem Analysis 3
CAD 154 CAD Applications II 3
CAD 248 Parametric CAD II 3
CAD 254 Design Project II 5

Total credits required to complete this AAS degree .......... 69
Criminal Justice–AA or AS
The Criminal Justice program prepares students for a career in such areas as law enforcement, corrections, security and juvenile justice. The program allows students to choose either an AA or AS degree. All students must complete the basic Criminal Justice requirements, then select other Criminal Justice classes in areas of primary interest.
Note: Students who have a criminal background history may make it through the program, but it is NOT likely that they will find employment in the Criminal Justice field, and students with a criminal history may NOT be eligible for an internship that is required for the AS degree.

Location: Ankeny
Selected courses in this program are offered at other campuses.

Program Entry Requirements
1. Complete an application for admission.
2. Satisfy the assessment requirement.
3. Attend any required information/registration session.

Students start any term.

Graduation Requirements
To earn a Criminal Justice AA or AS degree, a student must complete the standard core requirements for the degree, plus the Criminal Justice required courses and options and maintain a 2.0 grade point average.

AA degree–Law Enforcement

| Term 1 | CRJ 100 | Intro to Criminal Justice | 3 |
| CRJ 132 | Constitutional Law | 3 |

Select 3 Courses from AA degree Core Requirements 9

| Term 2 | CRJ 130 | Criminal Law | 3 |

Select 3 Courses from AA degree Core Requirements 9

Select 1 Course from Option Courses 3

| Term 3 | CRJ 141 | Criminal Investigation | 3 |

Select 3 Courses from AA degree Core Requirements 9

Select 1 Course from Option Courses 3

| Term 4 | CRJ 248 | Scientific Investigation | 3 |

Select 3 Courses from AA degree Core Requirements 9

Select 1 Course from Option Courses 3

AS degree–Law Enforcement

| Term 1 | CRJ 100 | Intro to Criminal Justice | 3 |
| CRJ 132 | Constitutional Law | 3 |

Select 2 Courses from AS degree Core Requirements (one must be a 4-credit course) 7

Select 1 Course from Option Courses 3

| Term 2 | CRJ 130 | Criminal Law | 3 |
| CRJ 141 | Criminal Investigation | 3 |

Select 3 Courses from AS degree Core Requirements 9

Select 1 Course from Option Courses 3

| Term 3 | CRJ 248 | Scientific Investigation | 3 |
| SOC 200* | Minority Group Relations | 3 |

Select 2 Courses from AS degree Core Requirements 6

Select 1 Course from Option Courses 3
Programs Available

Degrees and Diplomas

Term 4
CRJ 932 Internship 3
Select 2 Courses from AS degree Core Requirements 6
Select 2 Courses from Option Courses 6

AS degree Core Requirements (mentioned above) are as follows:
Communications 9
Social & Behavioral Sciences 6
*SOC 200 and POL 171 CANNOT be used to fulfill both Program Credit Requirements and Social & Behavioral Sciences AS Core.
Math & Sciences 6
Humanities 3
Distributive 4

Option Courses—Select 15 Credits from Option 1
CRJ 101 Ethics in Criminal Justice Opt 1 3
CRJ 107 Survey/Criminal Justice Agencies Opt 1 3
CRJ 109 Theories of Interviewing Opt 1 3
CRJ 111 Police and Society Opt 1 3
CRJ 128 Victimization Opt 1 3
CRJ 137 Juvenile Law Opt 1 3
CRJ 178 E-Crime Investigative Methods Opt 1 3
CRJ 195 Crime Scene Investigation Opt 1 4
POL 171* Intro to Public Administration Opt 1 3
SOC 240 Criminology Opt 1 3

Total minimum credits required to complete the AS degree .............................................. 64

AA degree—Corrections

Term 1
CRJ 100 Intro to Criminal Justice 3
CRJ 132 Constitutional Law 3
Select 3 Courses from AA degree Core Requirements 9

Term 2
CRJ 136 Correctional Law 3
Select 3 Courses from AA degree Core Requirements 9
Select 1 Course from Option Courses 3

Term 3
CRJ 222 Correctional Treatment Methods 3
Select 3 Courses from AA degree Core Requirements 9
Select 1 Course from Option Courses 3

Term 4
CRJ 229 Penology 3
Select 3 Courses from AA degree Core Requirements 9
Select 1 Course from Option Courses 3

Option Courses—Select 12 Credits from Option 1
CRJ 101 Ethics in Criminal Justice Opt 1 3
CRJ 107 Survey/Criminal Justice Agencies Opt 1 3
CRJ 109 Theories of Interviewing Opt 1 3
CRJ 111 Police and Society Opt 1 3
CRJ 128 Victimology Opt 1 3
CRJ 137 Juvenile Law Opt 1 3
CRJ 141 Criminal Investigation Opt 1 3
CRJ 178 E-Crime Investigative Methods Opt 1 3
CRJ 195 Crime Scene Investigation Opt 1 4
POL 171* Intro to Public Administration Opt 1 3
SOC 240 Criminology Opt 1 3

Total minimum credits required to complete the AA degree ........................................... 75

AS degree—Corrections

Term 5
SOC 200* Minority Group Relations 3
Select 3 Courses from AA degree Core Requirements 9
Select 1 Course from Option Courses 3

AA degree Core Requirements (mentioned above) are as follows:
Communications 9
Social & Behavioral Sciences 9
*SOC 200 is a required course for this program that may be used to fulfill 3 credits of Social & Behavioral Sciences AA Core. And POL 171 is an option course that may also be used to fulfill 3 credits of Social & Behavioral Sciences AA Core.
Math & Sciences 9
Humanities 9
Distributive 12

Option Courses—Select 12 Credits from Option 1
CRJ 101 Ethics in Criminal Justice Opt 1 3
CRJ 107 Survey/Criminal Justice Agencies Opt 1 3
CRJ 109 Theories of Interviewing Opt 1 3
CRJ 111 Police and Society Opt 1 3
CRJ 128 Victimology Opt 1 3
CRJ 137 Juvenile Law Opt 1 3
CRJ 141 Criminal Investigation Opt 1 3
CRJ 178 E-Crime Investigative Methods Opt 1 3
CRJ 195 Crime Scene Investigation Opt 1 4
POL 171* Intro to Public Administration Opt 1 3
SOC 240 Criminology Opt 1 3

Total minimum credits required to complete the AA degree ........................................... 75

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## Programs Available

### Term 4

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CRJ 932</td>
<td>Internship</td>
<td>3</td>
</tr>
<tr>
<td>Select 2 Courses from AS degree Core Requirements</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Select 2 Courses from Option Courses</td>
<td>6</td>
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</tr>
</tbody>
</table>

**AS degree Core Requirements** (mentioned above) are as follows:

<table>
<thead>
<tr>
<th>Category</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communications</td>
<td>9</td>
</tr>
<tr>
<td>Social &amp; Behavioral Sciences</td>
<td>6</td>
</tr>
</tbody>
</table>

*SOC 200 and POL 171 CANNOT be used to fulfill both Program Credit Requirements and Social & Behavioral Sciences AS Core.*

### Option Courses—Select 15 Credits from Option 1

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CRJ 101</td>
<td>Ethics in Criminal Justice</td>
<td>3</td>
</tr>
<tr>
<td>CRJ 107</td>
<td>Survey/Criminal Justice Agencies</td>
<td>3</td>
</tr>
<tr>
<td>CRJ 109</td>
<td>Theories of Interviewing</td>
<td>3</td>
</tr>
<tr>
<td>CRJ 111</td>
<td>Police and Society</td>
<td>3</td>
</tr>
<tr>
<td>CRJ 128</td>
<td>Victimology</td>
<td>3</td>
</tr>
<tr>
<td>CRJ 137</td>
<td>Juvenile Law</td>
<td>3</td>
</tr>
<tr>
<td>CRJ 141</td>
<td>Criminal Investigation</td>
<td>3</td>
</tr>
<tr>
<td>CRJ 178</td>
<td>E-Crime Investigative Methods</td>
<td>3</td>
</tr>
<tr>
<td>CRJ 195</td>
<td>Crime Scene Investigation</td>
<td>4</td>
</tr>
<tr>
<td>POL 171*</td>
<td>Intro to Public Administration</td>
<td>3</td>
</tr>
<tr>
<td>SOC 240</td>
<td>Criminology</td>
<td>3</td>
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</tbody>
</table>

**Total minimum credits required to complete the AS degree: 64**

### AS Degree—Electronic Crime

#### Term 1

<table>
<thead>
<tr>
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<th>Course Name</th>
<th>Credits</th>
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<tbody>
<tr>
<td>CRJ 100</td>
<td>Intro to Criminal Justice</td>
<td>3</td>
</tr>
<tr>
<td>NET 123</td>
<td>Computer Hardware Basics</td>
<td>4</td>
</tr>
<tr>
<td>CRJ 167</td>
<td>Operating Sys. for Forensics</td>
<td>3</td>
</tr>
</tbody>
</table>

**Select 1 Course from AS degree Core Communications**: 3

**Select 1 Course from AS degree Social & Behavioral Sciences**: 3

#### Term 2

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CRJ 130</td>
<td>Criminal Law</td>
<td>3</td>
</tr>
<tr>
<td>CRJ 141</td>
<td>Criminal Investigation</td>
<td>3</td>
</tr>
<tr>
<td>CRJ 176</td>
<td>Computer Forensics I</td>
<td>3</td>
</tr>
</tbody>
</table>

**Select 1 Course from AS degree Core Communications**: 3

**Select 1 Course from AS degree Core Math & Sciences**: 3

#### Term 3

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CRJ 178</td>
<td>E-Crime Investigative Methods</td>
<td>3</td>
</tr>
</tbody>
</table>

**Select 1 Course from AS degree Core Social & Behavioral Sci.**: 3

#### Term 4

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CRJ 276</td>
<td>Computer Forensics II</td>
<td>3</td>
</tr>
<tr>
<td>CRJ 132</td>
<td>Constitutional Law</td>
<td>3</td>
</tr>
<tr>
<td>NET 213</td>
<td>CISCO Networking</td>
<td>4</td>
</tr>
</tbody>
</table>

### Culinary Arts

The DMACC Culinary Arts program has been designated the Iowa Culinary Institute, signifying the world-class prominence of the program. The Culinary Arts program is accredited by the American Culinary Federation. The program prepares students to enter culinary positions with hotels, restaurants, clubs or institutions and some select jobs in dining room service, catering or management. By the end of the program, graduates will have taken courses in food preparation, nutrition, menu planning, purchasing, garde manger and baking. International cuisine, restaurant management and advanced culinary cuisine are practicum courses and a valuable part of the training. These courses are management-designed and offer students practical knowledge of the restaurant industry.

*In order to facilitate student success, the Culinary Arts program offers a learning community where students complete HCM 320 Intro to Hospitality Industry and SPC 101 Fundamentals of Oral Communication (speech) together. Students are required to enroll in the learning community during their first or second semester and will receive details about this when they attend orientation and registration after being admitted to the program. Only students who completed speech at DMACC prior to entering the Culinary Arts program or by transferring credit from another college or university will be permitted to fulfill this requirement with an option course other than SPC 101.*

Terms A and B are the first two terms of the program. For the first two semesters, students are divided into groups A and B. Students in group A take the courses listed below under Term A their first semester and then complete term B in their second semester. Students in group B take the courses listed below under Term B their first semester and then complete term A in their second semester. All students complete the same courses in terms 3, 4 and 5.

Upon successful completion of terms A through 5, students will receive a Culinary Arts AAS degree. Students with a shorter-term educational goal may receive a diploma upon completion of terms A, B and 3. The first three terms must be completed before enrollment is allowed in terms 4 and 5.

### Location: Ankeny
Program Entry Requirements
1. Complete an application for admission.
2. Satisfy the assessment requirement.
3. Attend any required information/registration session.

Students start Fall term.

Graduation Requirements
To earn a Culinary Arts AAS degree or diploma, a student must complete all course work as prescribed and maintain a 2.0 grade point average.

Term A

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HCM 100</td>
<td>Sanitation and Safety (lec)</td>
<td>2</td>
</tr>
<tr>
<td>HCM 104</td>
<td>Sanitation and Equipment Lab</td>
<td>1</td>
</tr>
<tr>
<td>HCM 143</td>
<td>Food Preparation I (lec)</td>
<td>3</td>
</tr>
<tr>
<td>HCM 144</td>
<td>Food Preparation I Lab</td>
<td>3</td>
</tr>
<tr>
<td>HCM 320*</td>
<td>Intro to Hospitality Industry (lec)</td>
<td>2</td>
</tr>
</tbody>
</table>

Any SPC course designated as AAS degree Requirement

Opt 1

Term B

Select 1 Course from Option 2 and 1 Course from Option 3

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HCM 200</td>
<td>Dining Room Service (lec)</td>
<td>2</td>
</tr>
<tr>
<td>HCM 231</td>
<td>Nutrition (lec)</td>
<td>2</td>
</tr>
<tr>
<td>HCM 510</td>
<td>Work Experience</td>
<td>3</td>
</tr>
<tr>
<td>MGT 145</td>
<td>Human Relations in Business</td>
<td>3</td>
</tr>
<tr>
<td>COM 703</td>
<td>Communication Skills</td>
<td>Opt 2</td>
</tr>
<tr>
<td>Any SPC course designated as AAS degree Requirement</td>
<td>Opt 2</td>
<td></td>
</tr>
</tbody>
</table>

Opt 1

Term 3

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>HCM 152</td>
<td>Food Preparation II (lec)</td>
<td>2</td>
</tr>
<tr>
<td>HCM 153</td>
<td>Food Preparation II Lab</td>
<td>2</td>
</tr>
<tr>
<td>HCM 270</td>
<td>Garde Manger (lab)</td>
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Total credits required to complete the diploma................. 38

Term 4

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>HCM 240</td>
<td>Menu Planning &amp; Design (lec)</td>
<td>2</td>
</tr>
<tr>
<td>HCM 250</td>
<td>Purchasing (lec)</td>
<td>2</td>
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<tr>
<td>HCM 173</td>
<td>International Cuisine (lec)</td>
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<tr>
<td>HCM 172</td>
<td>International Cuisine (lab)</td>
<td>3</td>
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<tr>
<td>HCM 210</td>
<td>Dining Management (lec)</td>
<td>2</td>
</tr>
<tr>
<td>HCM 167</td>
<td>Culinary Skills Development (lab)</td>
<td>3</td>
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Term 5

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<tr>
<td>HCM 175</td>
<td>International Cuisine Lab II</td>
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<tr>
<td>HCM 124</td>
<td>Advanced Baking/Buffet Decorating (lab)</td>
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<tr>
<td>HCM 169</td>
<td>Culinary Cuisine Lab</td>
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<tr>
<td>HCM 168</td>
<td>Advanced Culinary Cuisine (lec)</td>
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<tr>
<td>HCM 300</td>
<td>Beverage Management (lec)</td>
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<tr>
<td>SDV 153</td>
<td>Pre-Employment Strategies</td>
<td>2</td>
</tr>
</tbody>
</table>

Total credits required to complete the AAS degree ........ 67

Data Entry I and Database Specialist Certificates
(see Certificate Section, page 114)

Dental Assistant

The Dental Assistant program prepares the student, as a member of the dental health team, to assist the dentist in all phases of dentistry. The program includes general and specialty dentistry, chair-side procedures, radiology and laboratory and business office assisting.

An integral part of the educational program is clinical experience; this is provided by rotation through various dental facilities.

The Dental Assistant program is accredited by the Commission on Dental Accreditation, a specialized accrediting body recognized by the Council of Postsecondary Accreditation and the United States Department of Education.

Note: Criminal background checks will be completed on each student. Criminal convictions or documented history of abuse may delay or prevent students from participating in clinical education experiences. Students unable to participate in clinical education will be unable to complete the Dental Assistant program.

Location: Ankeny

Program Entry Requirements
1. Complete an application for admission.
2. Satisfy the assessment requirement.
3. Attend any required information/registration session.
4. Keyboard skills of 35 WPM with no more than 5 errors is strongly recommended.
5. Submit proof of high school graduation or GED prior to enrollment.
6. High School Biology or equivalent with a grade of “C” or better is required.

Students start Fall term.

Graduation Requirements
To earn a Dental Assistant diploma, a student must complete all course work as prescribed and maintain a 2.0 grade point average.

Term 1

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
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<tbody>
<tr>
<td>DEA 253</td>
<td>Dental Science I</td>
<td>4</td>
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<tr>
<td>DEA 256</td>
<td>Dental Anatomy</td>
<td>2</td>
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<tr>
<td>DEA 424</td>
<td>Dental Materials Lab</td>
<td>1</td>
</tr>
<tr>
<td>DEA 507</td>
<td>Principles of Dental Assisting</td>
<td>6</td>
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<tr>
<td>DHY 221</td>
<td>Dental Materials</td>
<td>2</td>
</tr>
<tr>
<td>DHY 161</td>
<td>Oral Radiology</td>
<td>3</td>
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Term 2

<table>
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<th>Credits</th>
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<tbody>
<tr>
<td>DEA 321</td>
<td>Dental Radiography II</td>
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<tr>
<td>DEA 591</td>
<td>Dental Assisting Seminar</td>
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<tr>
<td>DEA 576</td>
<td>Dental Assisting Clinic I</td>
<td>3</td>
</tr>
<tr>
<td>DEA 263</td>
<td>Dental Science II</td>
<td>2</td>
</tr>
<tr>
<td>DEA 615</td>
<td>Clinical Dental Assisting</td>
<td>5</td>
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<tr>
<td>DEA 702</td>
<td>Dental Office Procedures</td>
<td>2</td>
</tr>
<tr>
<td>ENG 105</td>
<td>Composition I</td>
<td>3</td>
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</tbody>
</table>
**Programs Available**

**Term 3**
- DEA 297 Ethics/Jurisprudence Seminar  1
- DEA 577 Dental Assisting Clinic II  4
- PSY 102 Human & Work Relations  3
- SPC 101 Fund of Oral Communication  3

Graduates may immediately sit for the National Board exam to become a Certified Dental Assistant.

Total credits required to complete this program .......... 47

**Dental Hygiene**

The Dental Hygiene curriculum is designed to prepare graduates for positions in general and specialty dental offices, hospitals, schools, public health agencies and industrial agencies.

Students are trained in educational methods and preventive clinical services that qualify them as dental health educators and competent clinicians. Emphasis is placed on the correlation between prevention, education and the clinical phases of dental hygiene practice, as well as basic and social sciences.

The Dental Hygiene program is accredited by the Commission on Dental Accreditation, a specialized accrediting body recognized by the Council of Postsecondary Accreditation and the United States Department of Education.

**Location: Ankeny**

**Program Entry Requirements**
1. Complete an application for admission.
2. Attend a Dental Hygiene program information session.
3. Provide proof of high school graduation or GED completion.
4. Complete required COMPASS testing, obtaining satisfactory scores in Reading (81 or above) and Writing (70 or above) or ACT scores in Reading (19 or above) and English (19 or above).
5. Complete BIO 164 Essential Anatomy/Physiology OR BOTH BIO 733 Health Science Anatomy AND BIO 734 Health Science Physiology with a grade of “C” (not C-) or better.
6. Complete CHM 122 Introduction to General Chemistry with a grade of “C” (not C-) or better.
7. Complete BIO 187 Microbiology w/lab OR BIO 732 Health Science Microbiology with a grade of “C” (not C-) or better.

When transferring equivalent courses to DMACC, an official transcript must be sent to the Admissions Office as courses are completed.

**Wait List Processing**

Position on the Wait List will be determined by the number of support courses completed:
- CHM 132 Intro to Organic/Biochemistry
- PSY 111 Intro to Psychology

Note: Criminal background checks will be completed on each student. Criminal convictions or documented history of abuse may prevent students from participating in clinical experiences. Students who do not participate in clinical education will be unable to complete the program.

**Graduation Requirements**

To earn a Dental Hygiene AAS degree, a student must successfully complete all dental hygiene and Liberal Arts support courses required in the curriculum, achieving a grade of “C” (not C-) or better in each course. In order to progress to the next term of the Dental Hygiene program, all required courses in the current term must be completed with a grade of “C” or better.

**Term 1—CPR Certification**
- CHM 132 Intro to Organic/Biochemistry  4
- DHY 170 Principles of Dental Hygiene  2
- DHY 171 Principles of Dental Hygiene Practicum  3
- DHY 121 Oral Histology and Embryology  2
- DHY 114 Dental Hygiene Anatomical Science  4
- DHY 161 Oral Radiology  3

**Term 2—Select the Option 1 Course or both Option 2 Courses**
- DHY 181 Dental Hygiene I  2
- DHY 182 Clinical Dental Hygiene I  2
- DHY 164 Oral Radiology II  2
- DHY 141 General and Oral Pathology  3
- DHY 232 Nutrition & Preventative Dentistry Opt 1  4
- HSC 240 Human Nutrition Opt 2  3
- DHY 234 Nutrition/Dental Counseling Opt 2  1

**Term 3**
- DHY 281 Dental Hygiene II  2
- DHY 282 Clinical Dental Hygiene II  2
- DHY 211 Periodontology  2
- DHY 133 Pharmacology  3
- PSY 111 Intro to Psychology  3

**Term 4**
- DHY 221 Dental Materials  2
- DHY 223 Dental Materials Lab  1
- DHY 261 Dental Health Education  3
- DHY 291 Dental Hygiene III  2
- DHY 292 Clinical Dental Hygiene III  5
- SOC 110 Introduction to Sociology  3

**Term 5—Select 1 Course from Option 3**
- DHY 251 Community Oral Health  3
- DHY 301 Dental Hygiene IV  2
- DHY 302 Clinical Dental Hygiene IV  5
- ENG 105 Composition I  3
- SPC 101 Fund of Oral Communication Opt 3  3
- SPC 126 Interpersonal & Small Group Communication Opt 3  3

Total credits required to complete this program .......... 77
Diemaking  
(See Tool & Diemaking, page 107–108)

Diesel Technology

The Diesel Technology program prepares students for a career in the area of diesel repair. Instruction is in the repair, maintenance and testing of diesel engines, power trains and components of trucks and heavy construction equipment.

This program is accredited by the AED Associated Equipment Distributors www.AEDnet.org.

Location: Ankeny

Program Entry Requirements
1. Complete an application for admission.
2. Satisfy the assessment requirement.
3. Complete a mechanical aptitude and ability test.
4. Attend any required information/registration session.

Students start any term.

Graduation Requirements
To earn a Diesel Technology diploma or AAS degree, a student must complete all course work as prescribed and maintain a 2.0 grade point average.

Required Courses–Diploma
DSL 356 Diesel Engines I  6
DSL 366 Diesel Engines II  6
DSL 546 Power Trains I  6
DSL 605 Hydraulics and Brakes  5
DSL 145 Basic Electricity  5
DSL 733 Air Conditioning  3
DSL 830 Operation and Maintenance  5

Select 1 Course from Each Option
COM 703 Communication Skills  Opt 1 3
ENG 105 Composition I  Opt 1 3
MAT 772 Applied Math  Opt 2 3
MAT 141 Finite Math  Opt 2 4
MAT 130 Trigonometry  Opt 2 3
MGT 145 Human Relations in Business  Opt 3 3
PSY 111 Introduction to Psychology  Opt 3 3
PSY 102 Human and Work Relations  Opt 3 3
SOC 110 Introduction to Sociology  Opt 3 3
PHY 106 Survey of Physics  Opt 4 4
PHY 710 Technical Physics  Opt 4 3

Total credits required to complete the diploma .......... 42

Required Courses–AAS
DSL 356 Diesel Engines I  6
DSL 366 Diesel Engines II  6
DSL 546 Power Trains I  6
DSL 605 Hydraulics and Brakes  5
DSL 145 Basic Electricity  5
DSL 733 Air Conditioning  3
DSL 830 Operation and Maintenance  5
DSL 555 Power Trains II  5
DSL 409 Diesel Electronics  5
DSL 407 Diesel Fuel Systems  6
DSL 155 Advanced Electricity  4
DSL 845 Heavy Equipment Repair  5
DSL 855 Truck Repair  5
AUT 140 Welding for Automotive Mechanics  2

Select 1 Course from Each Option
COM 703 Communication Skills  Opt 1 3
ENG 105 Composition I  Opt 1 3
MAT 772 Applied Math  Opt 2 3
MAT 141 Finite Math  Opt 2 4
MAT 130 Trigonometry  Opt 2 3
MGT 145 Human Relations in Business  Opt 3 3
PSY 111 Introduction to Psychology  Opt 3 3
PSY 102 Human and Work Relations  Opt 3 3
SOC 110 Introduction to Sociology  Opt 3 3
PHY 106 Survey of Physics  Opt 4 4
PHY 710 Technical Physics  Opt 4 3

Total credits required to complete the AAS degree ........ 80

Dietary Manager
(see Certificate Section, page 114–115)

Digital Forensic Investigation
(see Certificate Section, page 115)

Digital Publishing
(see Certificate Section, page 115)

Early Childhood Education
(see Certificate Section, page 115)

E-Commerce Design
(see Certificate Section, page 115)

Early Childhood Education
The Early Childhood Education program prepares students for careers working with young children in a variety of settings. Students who successfully complete the program are competent to assume a position of responsibility in early childhood education.

Course work includes child growth and development, guidance techniques, curriculum planning and assessment, infant and toddler care, health, safety and nutrition.

Students will have the opportunity to participate in the Des Moines Area Community College Child Development Center, as they develop their competencies in the field of early childhood education.

When course work is completed, students will assume positions in a variety of settings such as child care centers, preschools, child development homes and public and private schools working with infants and toddlers, preschoolers or school-age children. A second degree option, Early Childhood Education Associate, is also available.

DHS criminal history record checks will be completed on each student. Criminal convictions or documented history of abuse will prevent students from participating in lab and field experiences. Students unable to complete these classes will not receive a degree in Early Childhood Education.
Early Childhood Education–Associate

The Early Childhood Education Associate program is designed to build on those skills developed in the Early Childhood Education diploma program and to broaden the student’s background in general education. Further competence in early childhood education is developed through course work in building relationships between home, program and community, administration of programs for children and internship.

Students completing the Early Childhood Education diploma program plus the additional requirements listed will earn an Early Childhood Education Associate in Science degree. They may take one of the many jobs available in early childhood education including teaching in child care centers, preschools, child development homes, and public and private schools, working with infants and toddlers, preschoolers or school-age children, as well as administrative positions in early childhood programs. Students who intend to transfer should contact the Early Childhood Education program chair or program counselor regarding important information concerning transfer agreements with four-year institutions. This program is not intended for students who are pursuing a degree in Elementary Education.

DHS criminal history record checks will be completed on each student. Criminal convictions or documented history of abuse will prevent students from participating in lab and field experiences and internship. Students unable to complete these classes will not receive a degree in Early Childhood Education.

Location: Ankeny

Selected courses in this program are offered at other campuses.

Program Entry Requirements
1. Complete an application for admission.
2. Satisfy the assessment requirement.
3. Attend any required information/registration session.

Students start any term.

Graduation Requirements
To earn an Early Childhood Education diploma, a student must complete all course work as prescribed and maintain a 2.0 grade point average.

Recommended Course of Study

A recommended course of study, listed below, has been created to insure that each student completes the program in the minimal amount of time required. However, the course of study can be tailored to meet the specific needs of each student.

Term 1

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>ECE 103</td>
<td>Intro to Early Childhood Ed</td>
<td>3</td>
</tr>
<tr>
<td>ECE 158</td>
<td>Early Childhood Curriculum I</td>
<td>3</td>
</tr>
<tr>
<td>ECE 243</td>
<td>Early Childhood Guidance</td>
<td>3</td>
</tr>
<tr>
<td>ECE 343</td>
<td>Early Childhood Guidance Lab</td>
<td>1</td>
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*Select 1 Course from AS or AAS degree Core Social/Behavioral Sciences 3

*Select 1 Course from AS or AAS degree Core Communications 3

TOTAL 16

Term 2

<table>
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<th>Course Code</th>
<th>Course Title</th>
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</thead>
<tbody>
<tr>
<td>ECE 133</td>
<td>Child Health, Safety &amp; Nutrition</td>
<td>3</td>
</tr>
<tr>
<td>ECE 159</td>
<td>Early Childhood Curriculum II</td>
<td>3</td>
</tr>
<tr>
<td>ECE 359</td>
<td>ECE Curriculum II Lab</td>
<td>1</td>
</tr>
<tr>
<td>ECE 170</td>
<td>Child Growth &amp; Development</td>
<td>3</td>
</tr>
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</table>

*Select 1 Course from AS or AAS degree Core Math & Sciences 3

TOTAL 13

Term 3

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ECE 221</td>
<td>Infant/Toddler Care and Educ.</td>
<td>3</td>
</tr>
<tr>
<td>ECE 262</td>
<td>Early Childhood Field Exper</td>
<td>3</td>
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</tbody>
</table>

TOTAL 6

Total credits required to complete this program ............35

*NOTE: Core courses chosen from the AAS degree list may not be accepted for the Early Childhood Education AS degree, if students choose to go beyond the diploma to earn the AS degree.
Programs Available

Education

Students planning to major in secondary or elementary education at a four-year college/university can satisfy many of their general education requirements at Des Moines Area Community College. Since degree requirements vary at senior institutions, students should become familiar with the specific course requirements of their selected transfer institution. Students are also encouraged to contact the four-year major advisor as early as possible to develop a transfer plan. DMACC advisors and/or counselors can also help by providing transfer materials and course planning assistance.

Electrical Construction Trades

The Electrical Construction Trades program prepares students for entry-level positions in residential, commercial and industrial wiring. At the completion of the program, students should be able to install electrical wiring to meet National Electric Code® (NEC code) in residential and commercial settings. In addition, students should be able to install motor-controlled equipment in industrial operations using more complex systems such as Programmable Logic Controllers.

Location: Newton

Selected courses in this program are offered at other campuses.

Degrees and Diplomas

Program Entry Requirements
1. Complete an application for admission.
2. Satisfy the assessment requirement.
3. Attend any required information/registration session.

Students start Fall term.

Graduation Requirements
To earn an Electrical Construction Trades diploma, a student must complete all course work as prescribed and maintain a 2.0 grade point average.

Electronics, Robotics & Automation

The Electronics, Robotics & Automation program prepares students for a career as a technician in industrial manufacturing. At the end of the program, students should be able to diagnose and repair industrial equipment ranging from the basic motor control devices used in hard automation to the sophisticated industrial robots and computer-integrated manufacturing cells that utilize microprocessors for programming and servo control.

The curriculum includes both the fundamental technologies and system applications. Upon program completion, students may seek employment with area manufacturers, maintaining plant equipment, or with companies that produce process control or robotic devices.

Location: Ankeny

Program Entry Requirements
1. Complete an application for admission.
2. Satisfy the assessment requirement.
3. Attend any required information/registration session.
4. Complete the required COMPASS testing, obtaining a satisfactory score in Algebra (49 or higher) or ACT scores with a Math sub score of 19 or higher, or completion of MAT 063 with a grade of "C" or better.
5. Successful completion of CSC 110 Intro to Computers or equivalent; or approval of the program counselor.
Electronics Systems Servicing Technology

The Electronics Systems Servicing Technology program prepares the student for a career as a technician for servicing electronic systems. Upon completion of this program, students should be able to diagnose and repair electronic equipment including personal security systems, business machines and medical electronics.

The curriculum includes the fundamental technologies, systems applications and an internship. Upon program completion, graduates may seek employment with local and regional electronic systems servicing companies.

The last term of the ESST program requires an internship (ELT 932). Before students enroll in the ELT 932 Internship course, they will be required to achieve a grade of “C” or higher in the DMACC courses pertaining to their chosen internship area. Students may choose an internship emphasis from one of the following four categories:

**Consumer Electronics:** Courses requiring a grade of “C” or higher are ELT 474 and 475.

**Security Systems:** Courses requiring a grade of “C” or higher are ELT 482 and 483.

**Business Machines:** Courses requiring a grade of “C” or higher are ELT 478 and 479.

**Medical Electronics:** Courses requiring a grade of “C” or higher are ELT 484 and 485.

**Location:** Ankeny

**Program Entry Requirements**

1. Complete an application for admission.
2. Satisfy the assessment requirement.
3. Attend any required information/registration session.
4. Complete the required COMPASS testing, obtaining a satisfactory score in Algebra (49 or higher) or ACT scores with a Math sub score of 19 or higher, or completion of MAT 063 with a grade of “C” or better.
5. Successful completion of CSC 110 Intro to Computers or equivalent; or approval of the program counselor.

**Students start Fall term.**

**Graduation Requirements**

To earn an Electronics Systems Servicing Technology AAS degree, a student must complete all course work as prescribed and maintain a 2.0 grade point average.

**Term 1—Select 1 Course from Option 1**

<table>
<thead>
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<tbody>
<tr>
<td>ELT 385</td>
<td>Electric Circuit Analysis I</td>
<td>4</td>
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<tr>
<td>ELT 386</td>
<td>Electric Circuit Analysis I Lab</td>
<td>2</td>
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<tr>
<td>ELT 389</td>
<td>Fabrication Techniques</td>
<td>3</td>
</tr>
<tr>
<td>ELT 108</td>
<td>Math for Electronics &amp; Computers</td>
<td>4</td>
</tr>
<tr>
<td>ENG 105</td>
<td>Composition I</td>
<td>Opt 1</td>
</tr>
<tr>
<td>COM 703</td>
<td>Communication Skills</td>
<td>Opt 1</td>
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**Term 2—Select 1 Course from Option 2**

<table>
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<tbody>
<tr>
<td>ELT 325</td>
<td>Digital Electronics</td>
<td>3</td>
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<tr>
<td>ELT 326</td>
<td>Digital Electronics Lab</td>
<td>3</td>
</tr>
<tr>
<td>ELT 387</td>
<td>Electronic Circuit Analysis II</td>
<td>3</td>
</tr>
<tr>
<td>ELT 388</td>
<td>Elec. Circuit Analysis II Lab</td>
<td>3</td>
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<tr>
<td>ELT 181</td>
<td>Adv. Math for Electronics Technicians</td>
<td>1</td>
</tr>
<tr>
<td>MGT 145</td>
<td>Human Relations in Business</td>
<td>Opt 2</td>
</tr>
<tr>
<td>PSY 111</td>
<td>Intro to Psychology</td>
<td>Opt 2</td>
</tr>
<tr>
<td>PSY 102</td>
<td>Human &amp; Work Relations</td>
<td>Opt 2</td>
</tr>
<tr>
<td>SOC 110</td>
<td>Introduction to Sociology</td>
<td>Opt 2</td>
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</table>

**Term 3**

<table>
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<th>Title</th>
<th>Credits</th>
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</thead>
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<tr>
<td>CIS 130</td>
<td>Computer Programming</td>
<td>3</td>
</tr>
<tr>
<td>ELT 134</td>
<td>Motor Controls</td>
<td>3</td>
</tr>
<tr>
<td>ELT 126</td>
<td>Industrial Electronics</td>
<td>2</td>
</tr>
<tr>
<td>ELT 143</td>
<td>Mechanisms</td>
<td>3</td>
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**Term 4**

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<tbody>
<tr>
<td>ELT 611</td>
<td>Microprocessors</td>
<td>2</td>
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<tr>
<td>ELT 612</td>
<td>Microprocessors Lab</td>
<td>3</td>
</tr>
<tr>
<td>NET 213</td>
<td>CISCO Networking</td>
<td>4</td>
</tr>
<tr>
<td>ELT 119</td>
<td>Programmable Logic Controllers</td>
<td>3</td>
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<tr>
<td>ELT 721</td>
<td>Robotics</td>
<td>2</td>
</tr>
<tr>
<td>ECN 120</td>
<td>Principles of Macroeconomics</td>
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**Term 5**

<table>
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<th>Credits</th>
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<tbody>
<tr>
<td>ELT 791</td>
<td>Hydraulics and Pneumatics</td>
<td>3</td>
</tr>
<tr>
<td>ELT 792</td>
<td>Hydraulics and Pneumatics Lab</td>
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</tr>
<tr>
<td>ELT 643</td>
<td>Process Control Instrument</td>
<td>3</td>
</tr>
<tr>
<td>ELT 644</td>
<td>Process Control Instrument Lab</td>
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</tr>
<tr>
<td>ELT 725</td>
<td>Introduction to FMS Cell</td>
<td>2</td>
</tr>
<tr>
<td>ELT 125</td>
<td>Advanced PLC</td>
<td>3</td>
</tr>
<tr>
<td>ELT 870</td>
<td>Electronic Capstone Project</td>
<td>3</td>
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**Total credits required to complete this program ..........78**
Entrepreneurship

The many rewards and challenges of owning your own business are being realized by increasing numbers of people. The Entrepreneurship program will help you put together or improve your plans for being successful in owning or operating a small business. In addition to innovative marketing strategies, creative financing methods and employee development skills, the program emphasizes personal development in accounting, supervision, communication and relationship management. Both day and evening courses are offered.

Location: Ankeny, Boone, Urban
Selected courses in this program are offered at other campuses.

Program Entry Requirements
1. Complete an application for admission.
2. Satisfy the assessment requirement.
3. Attend any required information/registration session.

Students start any term.

Graduation Requirements
To earn an Entrepreneurship diploma, a student must complete all course work as prescribed and maintain a 2.0 grade point average.

Required Courses
- ACC 311 Computer Accounting 3
- BUS 112 Business Math 3
- BUS 220 Intro to International Business 3
- BUS 148 Small Business Management 3
- BUS 131 Small Business Management Strategies 3
- BUS 138 Small Business Marketing 3
- BUS 141 Small Business Start-Up 3
- BUS 150 E-Commerce on the Web 3
- BUS 181 Basic Law for Entrepreneurs 2

Option Courses—Select 1 Course from Each Option
- ACC 131 Principles of Accounting I Opt 1 4
- ACC 111 Intro to Accounting Opt 1 3
- ENG 105 Composition I Opt 2 3
- COM 703 Communication Skills Opt 2 3
- MGT 145 Human Relations in Business Opt 3 3
- PSY 117 Introduction to Psychology Opt 3 3
- BUS 240 Virtual Business Firm Opt 4 3
- CSC 110 Intro to Computers Opt 4 3
- MKT 140 Selling Opt 4 3
- BCA 212 Intro Computer Business Appl Opt 4 3

Total credits required to complete this program ............. 38
PROGRAMS AVAILABLE

Environmental Science

The Environmental Science program is designed to prepare students for a career within the field of environmental science. Students graduating from our two-year program will be immediately qualified for some related employment opportunities, including entry-level positions with local parks and recreation departments, local utilities, and field technician/monitoring positions. Other careers in environmental science include positions as ecologists, environmental chemists, soil scientists, hydrologists, climatologists, environmental microbiologists, data collection/sampling/monitoring/field technician positions, wildlife biologists, public health officials and many others. Most of these positions require a four-year degree. Our program is designed to transfer smoothly to area institutions offering four-year degrees in environmental science and other closely related fields.

Location: Ankeny, Boone, Urban

Program Entry Requirements

1. Complete an application for admission.
2. Satisfy the assessment requirement.
3. Attend any required information/registration session.
4. Complete one year of high school Chemistry, or CHM 122, with a grade of “C” or better.
5. Complete one year of high school Biology, or BIO 156 or BIO 104, with a grade of “C” or better.
6. Complete two years of high school Algebra, or MAT 073, with a grade of “C” or better.

Students start any term.

Graduation Requirements

To earn an Environmental Science AA degree, a student must complete all course work as prescribed and maintain a 2.0 grade point average.

Term 1 (Fall)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENV 115</td>
<td>Environmental Science</td>
<td>3</td>
</tr>
<tr>
<td>ENV 116</td>
<td>Environmental Science Lab</td>
<td>1</td>
</tr>
<tr>
<td>ENV 103</td>
<td>Sustainable Living</td>
<td>1</td>
</tr>
<tr>
<td>BIO 112</td>
<td>General Biology I</td>
<td>4</td>
</tr>
<tr>
<td>*BIO 138</td>
<td>Field Ecology</td>
<td>3</td>
</tr>
<tr>
<td>*ENG 105</td>
<td>Composition I</td>
<td>3</td>
</tr>
</tbody>
</table>

*Select 1 AA degree Core Social/Behavioral Sciences course 3

TOTAL 18

Term 2 (Spring)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENV 145</td>
<td>Conservation Biology</td>
<td>4</td>
</tr>
<tr>
<td>BIO 113</td>
<td>General Biology II</td>
<td>4</td>
</tr>
<tr>
<td>ENG 106</td>
<td>Composition II</td>
<td>3</td>
</tr>
<tr>
<td>*SPC 101</td>
<td>Fund of Oral Communication</td>
<td>3</td>
</tr>
</tbody>
</table>

*Select 1 AA degree Core Humanities course 3

TOTAL 17

Term 3 (Fall)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHM 165</td>
<td>General/Inorg Chemistry I</td>
<td>4</td>
</tr>
<tr>
<td>MAT 157</td>
<td>Statistics</td>
<td>4</td>
</tr>
<tr>
<td>BIO 295</td>
<td>General Ecology and Lab</td>
<td>4</td>
</tr>
<tr>
<td>*Select 1 AA degree Core Social/Behavioral Sciences course 3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>*Select 1 AA degree Core Humanities course 3</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

TOTAL 18

Term 4 (Spring)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHM 175</td>
<td>General/Inorg Chemistry II</td>
<td>4</td>
</tr>
<tr>
<td>*Select 1 AA degree Core Social/Behavioral Sciences course 3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>*Select 1 AA degree Core Humanities course 3</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

TOTAL 15

Total minimum credits required to complete this program..................................................... 68

 NOTE: Students are encouraged to take some of the courses marked with an * during the summer semesters, to lighten their load in the fall and spring terms. But, students are cautioned to make sure they don’t take too many credits in the summer, causing them to fall below the minimum credits needed in fall and spring terms for financial aid purposes.

NOTE: One of the Social/Behavioral Sciences or Humanities courses must meet the Diversity Requirement. See the AA catalog list of courses for a list of appropriate course options.

Fashion Certificate

(see Certificate Section, page 116)

Fashion/Design

Challenges and rapid advancement opportunities set in an exciting atmosphere of change, fast-paced business decisions and competition are offered to you in a fashion career. Take part in the action where style becomes a way of expression in apparel and accessories, as well as interior design. A career in the fashion industry could include management, designing, buying, marketing or promotion, sales, customer service or visual merchandising.

The curriculum has been designed with the help of employers in both the apparel and interior design industries. Many students achieve management positions upon graduation or shortly thereafter because of the specialized course work and individual effort. Graduates interested in apparel design or interior design usually transfer to a four-year program.
Programs Available

Instruction is based on lectures, labs, internships, speakers and a variety of conferences and field studies in fashion centers such as New York City. These activities offer the student a chance to interact with key industry professionals and develop an invaluable employment network.

Two awards are offered in the Fashion program. Upon successful completion of the Fashion/Design program, students will receive an AAS degree. Students with a shorter-term educational goal may receive a diploma.

Fashion/Design emphasizes career development along with transfer options for students planning on attending a four-year college. Contact a DMACC Fashion/Design instructor, counselor or advisor for transfer planning assistance.

Location: Ankeny
Selected courses in this program are offered at other campuses.

Program Entry Requirements
1. Complete an application for admission.
2. Satisfy the assessment requirement.
3. Attend any required information/registration session.

Students start any term.

Graduation Requirements
To earn a Fashion diploma or AAS degree, a student must complete all course work as prescribed and maintain a 2.0 grade point average.

Required Courses–Fashion/Design AAS degree

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>APP 260</td>
<td>Fashion Analysis &amp; Design</td>
<td>3</td>
</tr>
<tr>
<td>INT 124</td>
<td>Interior Design Analysis</td>
<td>3</td>
</tr>
<tr>
<td>APP 111</td>
<td>Visual Merchandising &amp; Design</td>
<td>3</td>
</tr>
<tr>
<td>APP 230</td>
<td>Fashion Coordination/Promotion</td>
<td>3</td>
</tr>
<tr>
<td>APP 211</td>
<td>Textiles</td>
<td>3</td>
</tr>
<tr>
<td>MKT 110</td>
<td>Principles of Marketing</td>
<td>3</td>
</tr>
<tr>
<td>MKT 140</td>
<td>Selling</td>
<td>3</td>
</tr>
<tr>
<td>MKT 150</td>
<td>Principles of Advertising</td>
<td>3</td>
</tr>
<tr>
<td>MGT 147</td>
<td>Leadership Development</td>
<td>3</td>
</tr>
<tr>
<td>MGT 800</td>
<td>Business Internship I</td>
<td>6</td>
</tr>
<tr>
<td>MGT 802</td>
<td>Business Internship Seminar I</td>
<td>2</td>
</tr>
<tr>
<td>MGT 805</td>
<td>Business Internship II</td>
<td>4</td>
</tr>
<tr>
<td>MGT 807</td>
<td>Business Internship Seminar II</td>
<td>1</td>
</tr>
<tr>
<td>MGT 194</td>
<td>Relationship Strategies in Business</td>
<td>2</td>
</tr>
<tr>
<td>SDV 153</td>
<td>Pre-Employment Strategies</td>
<td>2</td>
</tr>
</tbody>
</table>

Option Courses–Select 1 Course from Each Option

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>MGT 160</td>
<td>Principles of Retailing</td>
<td>3</td>
</tr>
<tr>
<td>BUS 102</td>
<td>Introduction to Business</td>
<td>3</td>
</tr>
<tr>
<td>MGT 145</td>
<td>Human Relations in Business</td>
<td>3</td>
</tr>
<tr>
<td>PSY 111</td>
<td>Introduction to Psychology</td>
<td>3</td>
</tr>
<tr>
<td>MAT 141</td>
<td>Finite Math</td>
<td>4</td>
</tr>
<tr>
<td>SPC 101</td>
<td>Fundamentals of Oral Communication</td>
<td>3</td>
</tr>
<tr>
<td>SPC 126</td>
<td>Interpersonal &amp; Small Group Comm</td>
<td>3</td>
</tr>
</tbody>
</table>

Total credits required to complete the AAS degree ........ 68

Required Courses–Fashion/Design Diploma

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>APP 260</td>
<td>Fashion Analysis &amp; Design</td>
<td>3</td>
</tr>
<tr>
<td>INT 124</td>
<td>Interior Design Analysis</td>
<td>3</td>
</tr>
<tr>
<td>APP 111</td>
<td>Visual Merchandising &amp; Design</td>
<td>3</td>
</tr>
<tr>
<td>APP 211</td>
<td>Textiles</td>
<td>3</td>
</tr>
<tr>
<td>MKT 110</td>
<td>Principles of Marketing</td>
<td>3</td>
</tr>
<tr>
<td>MKT 140</td>
<td>Selling</td>
<td>3</td>
</tr>
<tr>
<td>MGT 147</td>
<td>Leadership Development</td>
<td>3</td>
</tr>
<tr>
<td>MGT 800</td>
<td>Business Internship I</td>
<td>6</td>
</tr>
<tr>
<td>MGT 802</td>
<td>Business Internship Seminar I</td>
<td>2</td>
</tr>
<tr>
<td>MGT 194</td>
<td>Relationship Strategies in Business</td>
<td>2</td>
</tr>
</tbody>
</table>

Option Courses–Select 1 Course from Each Option

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>MGT 160</td>
<td>Principles of Retailing</td>
<td>3</td>
</tr>
<tr>
<td>BUS 102</td>
<td>Introduction to Business</td>
<td>3</td>
</tr>
<tr>
<td>MGT 145</td>
<td>Human Relations in Business</td>
<td>3</td>
</tr>
<tr>
<td>PSY 111</td>
<td>Introduction to Psychology</td>
<td>3</td>
</tr>
<tr>
<td>MAT 141</td>
<td>Finite Math</td>
<td>4</td>
</tr>
<tr>
<td>ENG 105</td>
<td>Composition I</td>
<td>3</td>
</tr>
<tr>
<td>COM 703</td>
<td>Communication Skills</td>
<td>3</td>
</tr>
</tbody>
</table>

Total credits required to complete the diploma.............. 45

Fire Science Technology

The Fire Science Technology program provides a fundamental base of knowledge for people seeking career opportunities in the broad field of fire protection.

During the program, students complete general education core requirements and specific fire science courses. The latter examine the causes and behavior of fire and the means of minimizing its destructive effects through design, detection, suppression and prevention.

Students who possess a Fire Fighter I Certification can apply for four elective credits toward the AS degree in Fire Science Technology. Students who possess a Fire Fighter II Certification can apply for three elective credits toward the AS degree in Fire Science Technology. The Certification is based on the National Fire Protection Association Standard NFPA 1001 and accredited by a nationally recognized fire service accreditation agency.

Location: Ankeny

Program Entry Requirements
1. Complete an application for admission.
2. Satisfy the assessment requirement.
3. Attend any required information/registration session.
Programs Available

Degrees and Diplomas

Students start any term.

Graduation Requirements
To earn a Fire Science Technology AS degree, a student must complete the standard core requirements for the degree, plus the Fire Science Technology required courses and maintain a 2.0 grade point average.

Required Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHM 122</td>
<td>Intro to General Chemistry</td>
<td>4</td>
</tr>
<tr>
<td>ENG 105</td>
<td>Composition I</td>
<td>3</td>
</tr>
<tr>
<td>ENG 106</td>
<td>Composition II</td>
<td>3</td>
</tr>
<tr>
<td>ENG 108</td>
<td>Composition II: Technical Writing</td>
<td>3</td>
</tr>
<tr>
<td>FIR 230</td>
<td>Fire Behavior and Investigation</td>
<td>3</td>
</tr>
<tr>
<td>FIR 232</td>
<td>Property Insurance–Fraud Investigation</td>
<td>3</td>
</tr>
<tr>
<td>FIR 124</td>
<td>Building Construction</td>
<td>3</td>
</tr>
<tr>
<td>FIR 152</td>
<td>Fire Protection Systems</td>
<td>3</td>
</tr>
<tr>
<td>FIR 182</td>
<td>Hazardous Materials</td>
<td>3</td>
</tr>
<tr>
<td>FIR 220</td>
<td>Planning for Fire Protection</td>
<td>3</td>
</tr>
<tr>
<td>FIR 212</td>
<td>Emergency Scene Management</td>
<td>3</td>
</tr>
<tr>
<td>FIR 200</td>
<td>Occupational Safety/Health in Emergency Services</td>
<td>3</td>
</tr>
<tr>
<td>FIR 138</td>
<td>Principles of Fire Prevention</td>
<td>3</td>
</tr>
<tr>
<td>MGT 101</td>
<td>Principles of Management</td>
<td>3</td>
</tr>
<tr>
<td>PHI 105</td>
<td>Introduction to Ethics</td>
<td>3</td>
</tr>
<tr>
<td>POL 112</td>
<td>American State &amp; Local Government</td>
<td>3</td>
</tr>
<tr>
<td>PSY 111</td>
<td>Introduction to Psychology</td>
<td>3</td>
</tr>
<tr>
<td>AS degree Core MAT</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>AS degree Core SPC</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Electives</td>
<td></td>
<td>6–7</td>
</tr>
</tbody>
</table>

The Courses Below are Recommended to Fulfill the Elective 6–7 Credits

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MGT 130</td>
<td>Principles of Supervision</td>
<td>3</td>
</tr>
<tr>
<td>MGT 145</td>
<td>Human Relations in Business</td>
<td>3</td>
</tr>
<tr>
<td>MGT 147</td>
<td>Leadership Development</td>
<td>3</td>
</tr>
<tr>
<td>PSY 102</td>
<td>Human and Work Relations</td>
<td>3</td>
</tr>
<tr>
<td>EMS 210</td>
<td>Emergency Med Tech Basic</td>
<td></td>
</tr>
</tbody>
</table>

Total minimum credits required to complete this program.............................................. 64

Fire Specialist  (see Certificate Section, page 116)

Fitness and Sports Management
Fitness and Sports Management is designed to give students three different areas to choose from: Fitness Management, Sports Management, or Health.

This degree is designed to be a two-year degree for individuals who would like to pursue a career in the fitness, sports, recreation or health fields.

The Fitness and Sports Management AS degree is a transfer degree, designed to prepare students for a Fitness Management, Sports Management or Health program at a four-year school. Graduates from the program may also be able to find entry-level positions at parks and recreation departments, YMCA/YWCAs, private health clubs, golf courses, schools, hospitals or other facility management positions.

Location: Boone
Selected courses in this program are offered at other campuses.

Program Entry Requirements
1. Complete an application for admission.
2. Satisfy the assessment requirement.
3. Attend any required information/registration session.
4. A program orientation will be required for all students entering the program.

Students start any term.

Graduation Requirements
To earn a Fitness and Sports Management AS degree, a student must complete all course work as prescribed and maintain a 2.0 grade point average.

Required Courses–All Students

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO 168</td>
<td>Anatomy &amp; Physiology I</td>
<td>4</td>
</tr>
<tr>
<td>BIO 173</td>
<td>Anatomy &amp; Physiology II</td>
<td>4</td>
</tr>
<tr>
<td>CSC 110</td>
<td>Intro to Computers</td>
<td>3</td>
</tr>
<tr>
<td>ECN 130</td>
<td>Principles of Microeconomics</td>
<td>3</td>
</tr>
<tr>
<td>ENG 105</td>
<td>Composition I</td>
<td>3</td>
</tr>
<tr>
<td>ENG 106</td>
<td>Composition II</td>
<td>3</td>
</tr>
<tr>
<td>PEH 920</td>
<td>Field Experience</td>
<td>2</td>
</tr>
<tr>
<td>PEA 144</td>
<td>Physical Fitness &amp; Conditioning</td>
<td>2</td>
</tr>
<tr>
<td>HSC 240</td>
<td>Human Nutrition</td>
<td>3</td>
</tr>
<tr>
<td>PEH 162</td>
<td>Intro to Physical Education</td>
<td>3</td>
</tr>
<tr>
<td>PEH 102</td>
<td>Health</td>
<td>3</td>
</tr>
<tr>
<td>SPC 101</td>
<td>Fund of Oral Communication</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Required Courses–All Students .................................................. 36

In addition to the required courses for all students, each student must choose one of the following emphasis plans: Fitness Management, Health, or Sports Management and complete the requirements for their chosen emphasis.

Fitness Management Emphasis

Required Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PEH 141</td>
<td>First Aid</td>
<td>2</td>
</tr>
<tr>
<td>PEH 265</td>
<td>Leadership Techniques for Fitness Program</td>
<td>2</td>
</tr>
<tr>
<td>MGT 101</td>
<td>Principles of Management</td>
<td>3</td>
</tr>
<tr>
<td>PET 110</td>
<td>Intro to Athletic Training</td>
<td>2</td>
</tr>
<tr>
<td>PSY 121</td>
<td>Developmental Psychology</td>
<td>3</td>
</tr>
<tr>
<td>Any AS degree Core Humanities</td>
<td></td>
<td>6</td>
</tr>
<tr>
<td>Any AS degree Core Social Sciences</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Elective</td>
<td></td>
<td>1</td>
</tr>
</tbody>
</table>

Option Courses–Select 1 Course from Each Option

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAT 130</td>
<td>Trigonometry</td>
<td>Opt 1</td>
</tr>
<tr>
<td>MAT 157</td>
<td>Statistics</td>
<td>Opt 1</td>
</tr>
<tr>
<td>PHY 106</td>
<td>Survey of Physics</td>
<td>Opt 2</td>
</tr>
<tr>
<td>PHY 160</td>
<td>General Physics I</td>
<td>Opt 2</td>
</tr>
</tbody>
</table>

Health Emphasis

Required Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO 112</td>
<td>General Biology I</td>
<td>4</td>
</tr>
<tr>
<td>PEH 141</td>
<td>First Aid</td>
<td>2</td>
</tr>
<tr>
<td>MAT 157</td>
<td>Statistics</td>
<td>4</td>
</tr>
</tbody>
</table>
Fluid Power Technology

(pending Department of Education approval)

Fluid Power, commonly known as hydraulics and pneumatics, is an ever-increasing technology in many industries. This program is designed to cover many of the facets that a hydraulics technician would need in order to build a foundation for a successful career in this field. This program was developed as a cooperative venture between DMACC and Sauer Danfoss, but is designed for any occupation primarily involving hydraulics. Students can obtain a one-year diploma or a two-year AAS degree in Fluid Power Technology.

Program Entry Requirements
1. Complete an application for admission.
2. Satisfy the assessment requirement.
3. Attend any required information/registration session.

Diploma students start Fall term. AAS students start any term.

Graduation Requirements
To earn a Fluid Power Technology diploma or AAS degree, a student must complete all course work as prescribed and maintain a 2.0 grade point average.

Term 1
- ELT 106 Basic Math for Electronics 3
- CSC 110 Intro to Computers 3
- ELT 303 Principles of Electricity 3
- COM 703 Communication Skills 3
- MFG 121 Machine Trade Printreading I 2
- MFG 276 Hand & Bench Machine Tools 1

TOTAL 15

Term 2
- PHY 710 Technical Physics 3
- ELT 791 Hydraulics & Pneumatics 3
- ELT 792 Hydraulics & Pneumatics Lab 2
- IND 144 Pump Overhaul & Repair 4

Select 1 Course from the AAS degree Requirements for Social/Behavioral Sciences or Humanities 3

TOTAL 15

Total credits required to complete the diploma .......................... 30

Term 3
- MFG 818 IMT Internship 5
- ELT 134 Motor Controls 3

TOTAL 8

Term 4-Select 1 Course from Option 1
- MFG 524 PM & Diagnosing Mech/Elec Sys 3
- NET 144 Digital & Computer Electronics 3
- ELT 119 Programmable Logic Controllers 3
- SPC 101 Fund of Oral Communication Opt 1 3
- SPC 126 Interpersonal & Small Grp Comm Opt 1 3

TOTAL 12

Term 5-Select 2 Courses from Option 2
- ELT 793 Advanced Fluid Power 3
- ELT 643 Process Control Instrumentation 3
- ELT 644 Process Control Instrument Lab 2
- ELT 125 Advanced PLC Opt 2 3
- ELT 143 Mechanisms Opt 2 3
- CAD 119 Intro Computer Aided Drafting Opt 2 3
- MFG 105 Machine Shop Measuring Opt 2 3
- MGT 164 Total Quality Management Opt 2 3

TOTAL 14

Total credits required to complete the AAS degree ........... 64

Location: Ankeny
PROGRAMS AVAILABLE

Gerontology Specialist  
(see Certificate Section, page 117)

Graphic Design  
(previously Commercial Art)
If you are interested in turning your passion for art into a career, we offer:
• A no-nonsense design and technical education.
• Classes taught by professionals with real-world experience.
• State-of-the-art computer labs with industry standard hardware and software.
• Small class sizes.

Culminating in a personal portfolio and AAS degree at a price you can afford!

Since 1970, the Graphic Design program has been closely aligned with local business to understand their “real world” needs and develop those skills in our students. Our classes provide you with design skills, software skills and professional work practices needed to get a position in this highly competitive field.

Although most graduates who gain employment begin in entry-level positions, hard-working and talented students have started as high-level designers and owners of successful freelance businesses. The Graphic Design program prepares students to find employment with advertising agencies, corporate design departments, book and magazine publishing, digital media companies, graphic design firms, printing companies, newspapers and marketing firms. Upon completion of the program, graduates will have taken courses in communication design, web design, typography, illustration, digital imaging, page layout and digital file preparation.

Location: Ankeny

Program Entry Requirements
1. Complete an application for admission.
2. Satisfy the assessment requirement by taking all three sections of the COMPASS test and:
   3. Obtain a minimum score of 61 in Reading and
   4. Obtain a minimum score of 25 in Math.
5. Attend a required Graphic Design program information session.
6. Obtain a satisfactory score on a portfolio evaluation.

Students start Fall term.
This is a full-time program. To complete this program, students must take daytime classes; not all classes are offered at night.

Graduation Requirements
To earn a Graphic Design AAS degree, a student must complete all course work as prescribed and maintain a 2.0 grade point average. Students are required to produce a portfolio of graphic design work that demonstrates their ability to conceptualize and produce a variety of creative and effective multichannel communication collateral. The evaluation of the portfolio will be a part of the Graphic Design Internship course grade, and students must earn a “C” or better in that class.

Term 2 (Spring)—Select 1 Course from Option 2
GRD 403  Communication Design I  3
GRD 405  Typography I  3
GRD 463  Photoshop  3
GRT 400  Intro to Printing Methods  4
ENG105  Composition I  Opt 2  3
COM 703  Communication Skills  Opt 2  3
ADM 157  Business English  Opt 2  3

Term 3 (Summer)
GRD 411  Communication Design II  3
GRD 464  Digital Artistry  3
GRD 470  Interactive Media I  3

Term 4 (Fall)—Select 1 Course from Option 3
GRD 404  Typography II  3
GRD 421  Internship Preparation  3
GRD 426  Communication Design III  3
GRD 471  Interactive Media II  3
HUM 116  Encounters in Humanities  Opt 3  3
ART 101  Art Appreciation  Opt 3  3
MGT 145  Human Relations in Business  Opt 3  3

Term 5 (Spring)—Select 1 Course from Option 4 and 1
Course from Option 5
GRD 424  Graphic Design Internship  3
GRD 430  InDesign II  3
GRD 437  Communication Design IV  3
GRD 414  Illustration II  Opt 4  3
MKT 150  Principles of Advertising  Opt 4  3
GRT 430  Emerging Technologies  Opt 4  3
(For Option 5, choose any additional course listed in Options 2 or 3 or choose one of the following:)
SPC 101  Fund of Oral Communication  Opt 5  3
SPC 126  Interpersonal & Small Grp Comm  Opt 5  3
ENG 105  Composition II  Opt 5  3
ENG 108  Comp II: Technical Writing  Opt 5  3

Total minimum credits required to complete this program..................................................... 70

Graphic Sales and Customer Service  
(see Certificate section, page 117)
Graphic Technologies

The Graphic Technologies program prepares students for a variety of careers in the Graphic Communications industry including printing, graphic design, prepress and customer service. Students are exposed to and learn a variety of skills relevant to this high-tech and challenging field. Through a variety of courses providing hands-on instruction, students learn the basics of printing technologies, layout and design, digital imaging, project management, web design and emerging technologies that include the most current techniques and applications. Throughout this program, students work individually and collaboratively to produce and publish a variety of projects in a variety of media. Students not only design and develop projects, but also mass-produce them via offset printing and other methods.

After taking some introductory courses, students may choose an area of emphasis: printing technologies or graphic design. Students choosing a printing technologies emphasis take advanced courses in offset, flexography and specialty printing methods. Students choosing a graphic design emphasis take advanced courses in digital imaging and graphic design principles.

To finalize their education, students in the Graphic Technologies program complete an internship, as well as work collaboratively on a capstone project and individually prepare their portfolio. Many Graphic Technologies graduates have found careers in small and large printing companies, in-house printing and graphics departments, publishing firms and other businesses in need of graphic communications professionals.

Location: Ankeny

Program Entry Requirements
1. Complete an application for admission.
2. Satisfy the assessment requirement by obtaining a minimum score of 42 in English on the COMPASS test.
3. Obtain a minimum score of 25 in Math on the COMPASS test.
4. Attend a Graphic Technologies information session.
5. Basic keyboarding skills are recommended.

Students start Fall term.

Graduation Requirements
To earn a Graphic Technologies diploma or AAS degree, a student must complete all course work as prescribed and maintain a 2.0 grade point average.

Term 1 (Fall)
GRT 400  Intro to Printing Methods  4
GRT 401  Intro to Graphic Communication  3
GRT 406  Digital Publishing I  3
BCA 212  Intro to Computer Business Appl  3
AAS degree Requirement Communications  3

Term 2 (Spring)
GRT 409  Project Planning & Management  3
GRT 410  Printing Methods I  4
GRT 415  Digital Imaging I  4
GRT 416  Digital Publishing II  3
AAS degree Requirement Social & Behavioral Sciences/ Humanities (MGT 145 or PSY 102 recommended)  3

Term 3 (Summer)
All Graphic Technologies students must take: AAS degree Requirement Math & Sciences (MAT 772 or BUS 112 recommended )  3

Students who choose an emphasis in Printing Technologies should select Option 1 and 1 Course from Option 5.
GRT 420  Advanced Printing Methods  Opt 1  4
GRT 427  Specialty Printing Methods  Opt 1  4
Select 1 Course from the Option 5 list below  Opt 1  3

Students who choose an emphasis in Graphic Design should select Option 2.
GRT 424  Digital Imaging II  Opt 2  4
GRT 426  Digital Publishing III  Opt 2  4
GRD 405  Typography I  Opt 2  3

Total credits required to complete the diploma............... 47

Term 4 (Fall)
All Graphic Technologies students must take:
GRT 430  Emerging Technologies  3
GRT 932  Internship  4
AAS degree Requirement Distributed Credit  3
Students who choose an emphasis in Printing Technologies in Term 3 should select option 3 and 1 Course from option 5.
GRT 453  Printing Methods Capstone  Opt 3  4
Select 1 Course from the Option 5 list below  Opt 3  3

Students who choose an emphasis in Graphic Design in Term 3 should select option 4.
GRT 455  Digital Publishing Capstone  Opt 4  4
GRD 470  Interactive Media I  Opt 4  3

Option 5 Course List
MGT 101  Principles of Management  Opt 5  3
MGT 128  Organizational Behavior  Opt 5  3
MGT 130  Principles of Supervision  Opt 5  3
MKT 184  Customer Service  Opt 5  3
BUS 102  Introduction to Business  Opt 5  3
ADM 259  Professional Development  Opt 5  3

Total credits required to complete the AAS degree .......... 64

Greenhouse Production
(see Certificate Section, page 117)

Heating, Air Conditioning, Refrigeration Technology

The Heating, Air Conditioning, Refrigeration Technology program provides the theory, knowledge and skills of refrigeration, air conditioning, heating and ventilation equipment for systems in residential and light commercial structures. Students in air conditioning and refrigeration are taught in the classroom and laboratory on models and equipment to prepare the student for satisfactory entrance and advancement in the HVAC-R field.

By completing the first three terms, a student can receive a diploma. An AAS degree will be awarded upon completion of all five terms.

Location: Ankeny

VISIT US ONLINE: www.DMACC.edu
Hospitality Business

The Hospitality Business program prepares students to enter either the food service field or lodging industry at an entry-level position. Students who have completed the program will have taken courses in subject areas including sanitation, dining room fundamentals, business math, food preparation, career-seeking skills and marketing. Positions that are filled by graduates include guest services clerk, night auditor and cooks.

Location: Ankeny

Program Entry Requirements
1. Complete an application for admission.
2. Satisfy the assessment requirement.
3. Attend any required information/registration session.
4. Obtain a satisfactory score on a math proficiency assessment.

Students start Fall term.

Graduation Requirements
To earn a Heating, Air Conditioning, Refrigeration Technology diploma or AAS degree, a student must complete all course work as prescribed and maintain a 2.0 grade point average.

Term 1
HCR 307 Fundamentals of Refrigeration  5
HCR 260 HVAC Trade Skills I  3
HCR 404 Electricity  5
MAT 772 Applied Math  3

Term 2—Select 1 Course from Option 1
HCR 253 Residential Heating and AC  5
HCR 440 Electrical Controls and Circuits  5
HCR 515 Sheet Metal Fabrication  3
ENG 105 Composition I  Opt 1 3
COM 703 Communication Skills  Opt 1 3

Term 3
HCR 256 Applied Heating and AC  5
HCR 932 Internship  4

Total credits required to complete the diploma................. 41

Term 4
HCR 270 Advanced Heating and AC  5
HCR 506 Air Distribution  3
HCR 717 Blueprint Reading  3
PHY 710 Technical Physics  3

Term 5—Select 1 Course from Option 2
HCR 290 Commercial HVAC and Refrigeration  5
HCR 840 Computer Load Calculations  2
HCR 803 Environmental Controls  5
MGT 145 Human Relations in Business  Opt 2 3
PSY 111 Introduction to Psychology  Opt 2 3
SOC 110 Introduction to Sociology  Opt 2 3
SOC 115 Social Problems  Opt 2 3

Total credits required to complete the AAS degree........... 70

Terms

Term 1
COM 703 Communication Skills  3
HCM 100 Sanitation and Safety  2
HCM 200 Dining Room Service  2
HCM 320 Intro to Hospitality Industry  2
MGT 145 Human Relations in Business  3
ADM 131 Office Calculators  1
ADM 105 Intro to Keyboarding  1

Term 2
BUS 112 Business Math  3
HCM 143 Food Preparation I  3
HCM 104 Sanitation and Equipment Lab  1
HCM 144 Food Preparation I Lab  3
MKT 140 Selling  3
BCA 212 Intro to Computer Business Appl  3

Term 3
HCR 256 Applied Heating and AC  5
HCR 932 Internship  4

Total credits required to complete the diploma................. 41

Term 4
HCR 270 Advanced Heating and AC  5
HCR 506 Air Distribution  3
HCR 717 Blueprint Reading  3
PHY 710 Technical Physics  3

Term 5—Select 1 Course from Option 2
HCR 290 Commercial HVAC and Refrigeration  5
HCR 840 Computer Load Calculations  2
HCR 803 Environmental Controls  5
MGT 145 Human Relations in Business  Opt 2 3
PSY 111 Introduction to Psychology  Opt 2 3
SOC 110 Introduction to Sociology  Opt 2 3
SOC 115 Social Problems  Opt 2 3

Total credits required to complete the AAS degree........... 70

Terms

Term 1
COM 703 Communication Skills  3
HCM 100 Sanitation and Safety  2
HCM 200 Dining Room Service  2
HCM 320 Intro to Hospitality Industry  2
MGT 145 Human Relations in Business  3
ADM 131 Office Calculators  1
ADM 105 Intro to Keyboarding  1

Term 2
BUS 112 Business Math  3
HCM 143 Food Preparation I  3
HCM 104 Sanitation and Equipment Lab  1
HCM 144 Food Preparation I Lab  3
MKT 140 Selling  3
BCA 212 Intro to Computer Business Appl  3

Term 3
• Students seeking a restaurant management emphasis should select the Option 1 courses.
• Students seeking a hotel management emphasis should select the Option 2 course.

SDV 153 Pre-Employment Strategies  2
HCM 510 Work Experience  3
HCM 152 Food Preparation II (Lec)  Opt 1 2
HCM 153 Food Preparation II Lab  Opt 1 2
MKT 110 Principles of Marketing  Opt 2 3

Total minimum credits required
to complete this program................................. 38
Programs Available

Hotel and Restaurant Management

The Hotel and Restaurant Management program prepares students for a career in the hospitality field. Most graduates will enter the industry either in cooking positions or line management positions with hotels, restaurants and clubs. Students who complete the program will have taken courses in sanitation, dining room fundamentals, business math, food preparation, marketing, purchasing, hotel services, menu planning and hotel administration. These courses are management-designed and offer the student practical knowledge of either the restaurant management industry or the hotel management industry, depending on the student’s chosen emphasis.

Terms 1, 2 & 3 must be completed before entry is allowed into terms 4 & 5 to receive the AAS degree. Students planning on transferring to a four-year college should see an advisor or the program chair before registration.

Location: Ankeny

Program Entry Requirements
1. Complete an application for admission.
2. Satisfy the assessment requirement.
3. Attend any required information/registration session.

Students start Fall term.

Graduation Requirements
To earn a Hotel and Restaurant Management AAS degree, a student must complete all course work as prescribed and maintain a 2.0 grade point average.

Required Courses

Term 1—Select 1 Course from Option 1

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>HCM 100</td>
<td>Sanitation and Safety</td>
<td>2</td>
</tr>
<tr>
<td>HCM 200</td>
<td>Dining Room Service</td>
<td>2</td>
</tr>
<tr>
<td>HCM 320</td>
<td>Intro to Hospitality Industry</td>
<td>2</td>
</tr>
<tr>
<td>MGT 145</td>
<td>Human Relations in Business</td>
<td>3</td>
</tr>
<tr>
<td>ADM 131</td>
<td>Office Calculators</td>
<td>1</td>
</tr>
<tr>
<td>ADM 105</td>
<td>Intro to Keyboarding</td>
<td>1</td>
</tr>
<tr>
<td>COM 703</td>
<td>Communication Skills Opt 1</td>
<td>3</td>
</tr>
<tr>
<td>Any ENG course designated as AAS degree Requirement Opt 1</td>
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</table>

Term 2—Select 1 Course from Option 2

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HCM 143</td>
<td>Food Preparation I</td>
<td>3</td>
</tr>
<tr>
<td>HCM 104</td>
<td>Sanitation and Equipment Lab</td>
<td>1</td>
</tr>
<tr>
<td>HCM 144</td>
<td>Food Preparation I Lab</td>
<td>3</td>
</tr>
<tr>
<td>MKT 140</td>
<td>Selling</td>
<td>3</td>
</tr>
<tr>
<td>BCA 212</td>
<td>Intro Computer Business Appl</td>
<td>3</td>
</tr>
<tr>
<td>BUS 112</td>
<td>Business Math</td>
<td>Opt 2</td>
</tr>
<tr>
<td>Any MAT course designated as AAS degree Requirement Opt 2</td>
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Term 3

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>SDV 153</td>
<td>Pre-Employment Strategies</td>
<td>2</td>
</tr>
<tr>
<td>HCM 510</td>
<td>Work Experience</td>
<td>3</td>
</tr>
<tr>
<td>HCM 152</td>
<td>Food Preparation II</td>
<td>Opt 3</td>
</tr>
<tr>
<td>HCM 153</td>
<td>Food Preparation II Lab</td>
<td>Opt 3</td>
</tr>
<tr>
<td>MKT 110</td>
<td>Principles of Marketing</td>
<td>Opt 4</td>
</tr>
</tbody>
</table>

Human Resource Management

(see Certificate Section, page 117)

Human Services

The Human Services program prepares students for entry-level jobs or for transfer to a four-year degree program. By the end of the program, students will be able to interact effectively with clients in a human services agency.

The program emphasizes skills needed in working with clients such as interviewing, determining eligibility for services, making appropriate referrals and assisting with counseling. A supervised field experience allows students to apply their skills in a work setting.

A specialization certificate is offered in chemical dependency counseling. When the program is completed, students may find employment in a wide variety of settings, including public and private social services agencies, treatment centers, group homes, hospitals, supported living and work programs and state or county departments of social services.

Degrees and Diplomas
**Programs Available**

**Locations: Ankeny, Newton, Urban**

Selected courses in this program are offered at other campuses.

**Program Entry Requirements**
1. Complete an application for admission.
2. Satisfy the assessment requirement.
3. Attend any required information/registration session.

**Graduation Requirements**
To earn a Human Services AS degree, a student must complete the standard core requirements for the degree, plus the Human Services required courses and options and maintain a 2.0 grade point average.

**Required Courses**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HSV 109</td>
<td>Introduction to Human Services</td>
<td>3</td>
</tr>
<tr>
<td>HSV 230</td>
<td>Community Organization</td>
<td>3</td>
</tr>
<tr>
<td>HSV 220</td>
<td>Intro to Counseling Theories</td>
<td>3</td>
</tr>
<tr>
<td>HSV 130</td>
<td>Interviewing/Interpersonal Relations</td>
<td>3</td>
</tr>
<tr>
<td>HSV 286</td>
<td>Intervention Theories/Practice I</td>
<td>3</td>
</tr>
<tr>
<td>HSV 288</td>
<td>Intervention Theories/Practice II</td>
<td>3</td>
</tr>
<tr>
<td>HSV 802</td>
<td>Internship</td>
<td>3</td>
</tr>
<tr>
<td>HSV 185</td>
<td>Discrimination and Diversity</td>
<td>3</td>
</tr>
<tr>
<td>PSY 121</td>
<td>Developmental Psychology</td>
<td>3</td>
</tr>
<tr>
<td>PSY 241</td>
<td>Abnormal Psychology</td>
<td>3</td>
</tr>
</tbody>
</table>

**Option Courses—Select 2 Courses from Option 1 and 1 Course from Option 2**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>ANT 100</td>
<td>Introduction to Anthropology</td>
<td>3</td>
</tr>
<tr>
<td>PHI 105</td>
<td>Introduction to Ethics</td>
<td>3</td>
</tr>
<tr>
<td>POL 112</td>
<td>American State &amp; Local Government</td>
<td>3</td>
</tr>
<tr>
<td>HSV 135</td>
<td>Women’s Issues</td>
<td>3</td>
</tr>
<tr>
<td>HSV 811</td>
<td>Pract: Chemical Depend Counseling I</td>
<td>3</td>
</tr>
<tr>
<td>HSV 812</td>
<td>Pract: Chemical Depend Counseling II</td>
<td>3</td>
</tr>
<tr>
<td>SOC 120</td>
<td>Marriage and Family</td>
<td>3</td>
</tr>
<tr>
<td>SOC 200</td>
<td>Minority Group Relations</td>
<td>3</td>
</tr>
<tr>
<td>SOC 230</td>
<td>Juvenile Delinquency</td>
<td>3</td>
</tr>
<tr>
<td>SOC 240</td>
<td>Criminology</td>
<td>3</td>
</tr>
<tr>
<td>SOC 225</td>
<td>Social Gerontology/Applications</td>
<td>4</td>
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<tr>
<td>*PSY 111</td>
<td>Introduction to Psychology</td>
<td>3</td>
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<tr>
<td>*PSY 251</td>
<td>Social Psychology</td>
<td>3</td>
</tr>
<tr>
<td>PSY 291</td>
<td>Principles of Behavior Modification</td>
<td>3</td>
</tr>
<tr>
<td>*PSY 261</td>
<td>Human Sexuality</td>
<td>3</td>
</tr>
<tr>
<td>PSY 281</td>
<td>Educational Psychology</td>
<td>3</td>
</tr>
<tr>
<td>HSV 133</td>
<td>Conflict Resolution</td>
<td>3</td>
</tr>
<tr>
<td>HSV 255</td>
<td>Addictive Disease Concepts</td>
<td>3</td>
</tr>
<tr>
<td>PSY 102</td>
<td>Human and Work Relations</td>
<td>3</td>
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<tr>
<td>SOC 110</td>
<td>Introduction to Sociology</td>
<td>3</td>
</tr>
<tr>
<td>SOC 115</td>
<td>Social Problems</td>
<td>3</td>
</tr>
</tbody>
</table>

**Complete Remaining AS degree Core Requirements...... 28**

*Note: PSY 111, PSY 251 and PSY 261 are option courses that may also be used to fulfill Social & Behavioral Sciences AS Core.

Total minimum credits required to complete this program................................................. 64

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**Industrial Electro-Mechanical Technology**

The Industrial Electro-Mechanical Technology program prepares students for a career as a maintenance technician in industrial manufacturing. At the completion of the program, students should be able to troubleshoot and repair industrial equipment ranging from basic mechanical equipment and electrical motor controls to the more complex systems used in manufacturing environments.

**Location: Ankeny**

Selected courses in this program are offered at other campuses.

**Program Entry Requirements**
1. Complete an application for admission.
2. Satisfy the assessment requirement.
3. Attend any required information/registration session.

**Graduation Requirements**
To earn an Industrial Electro-Mechanical Technology AAS degree, a student must complete all course work as prescribed and maintain a 2.0 grade point average.

**Term 1**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>MAT 772</td>
<td>Applied Math</td>
<td>3</td>
</tr>
<tr>
<td>CSC 110</td>
<td>Introduction to Computers</td>
<td>3</td>
</tr>
<tr>
<td>MFG 276</td>
<td>Hand &amp; Bench Machine Tools</td>
<td>3</td>
</tr>
<tr>
<td>ELT 303</td>
<td>Principles of Electricity</td>
<td>3</td>
</tr>
</tbody>
</table>

**Select Emphasis 1 or Emphasis 2 or Emphasis 3:**

**Emphasis 1 Manufacturing Maintenance Technologies**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>MFG 121</td>
<td>Machine Trade Print-Reading I</td>
<td>3</td>
</tr>
<tr>
<td>CON 336</td>
<td>Care/Use of Hand/Power Tools</td>
<td>3</td>
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**Emphasis 2 Biomass Maintenance Technologies**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>BPT 102</td>
<td>Intro to Biomass Process Tech</td>
<td>3</td>
</tr>
<tr>
<td>RRO 101</td>
<td>Railcar Safety</td>
<td>3</td>
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**Emphasis 3 Wind Turbine Technologies**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>WTT 103</td>
<td>Introduction to Wind Energy</td>
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**Term 2**

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>MAT 773</td>
<td>Applied Math II</td>
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<tr>
<td>COM 703</td>
<td>Communication Skills</td>
<td>3</td>
</tr>
<tr>
<td>ELT 134</td>
<td>Motor Controls</td>
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**Emphasis 1 Manufacturing Maintenance Technologies**

<table>
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<tr>
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<tbody>
<tr>
<td>MGT 164</td>
<td>Total Quality Management</td>
<td>3</td>
</tr>
<tr>
<td>IND 146</td>
<td>Mechanical Power Transmission I</td>
<td>3</td>
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</table>

**Emphasis 2 Biomass Maintenance Technologies**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>BPT 111</td>
<td>Biomass Equipment and Systems</td>
<td>3</td>
</tr>
<tr>
<td>IND 146</td>
<td>Mechanical Power Transmission I</td>
<td>3</td>
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</table>

**Emphasis 3 Wind Turbine Technologies**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>WTT 133</td>
<td>Wind Turbine Mechanical Systems</td>
<td>3</td>
</tr>
<tr>
<td>WTT 223</td>
<td>Airfoils and Composite Repair</td>
<td>3</td>
</tr>
</tbody>
</table>
**Information Technology/Network Administration**

The ITNA program will provide students with a foundation in the basic technologies of computer networking, both as an objective and measurable skill set, as well as a preface to certification. In addition, students may also prepare for CISCO certification by choosing to take the CISCO option courses. The modular design of the core/certification integration is designed to allow the future addition of other professional certifications.

**Location:** Ankeny

Selected courses in this program are offered at other campuses.

**Program Entry Requirements**

1. Complete an application for admission.
2. Satisfy the assessment requirement.
3. Attend any required information/registration session.
4. Complete the required COMPASS testing, obtaining a satisfactory score in Pre-Algebra (44 or higher) or ACT scores with a Math sub score of 19 or higher, or completion of MAT 053 with a grade of “C” or better.
5. Successful completion of CSC 110 Intro to Computers or equivalent; or approval of the program counselor.

**Students start Fall term.**

**Graduation Requirements**

To earn an Information Technology Network Administration AAS degree, a student must complete all course work as prescribed and maintain a 2.0 grade point average.

All students take the first three terms.

**Term 1—Select 1 Course from Each Option**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>NET 144</td>
<td>Digital &amp; Computer Electronics</td>
<td>3</td>
</tr>
<tr>
<td>NET 213</td>
<td>CISCO Networking</td>
<td>4</td>
</tr>
<tr>
<td>MGT 145</td>
<td>Human Relations in Business</td>
<td>3</td>
</tr>
<tr>
<td>NET 615</td>
<td>Human &amp; Work Relations</td>
<td>3</td>
</tr>
<tr>
<td>ENG 105</td>
<td>Composition I</td>
<td>3</td>
</tr>
<tr>
<td>COM 703</td>
<td>Communication Skills</td>
<td>3</td>
</tr>
<tr>
<td>ELE 106</td>
<td>Basic Math for Electronics</td>
<td>3</td>
</tr>
<tr>
<td>ELE 108</td>
<td>Math for Electronics &amp; Computers</td>
<td>4</td>
</tr>
<tr>
<td>BUS 211</td>
<td>Business Statistics</td>
<td>3</td>
</tr>
<tr>
<td>Any AA/AS degree Core MAT</td>
<td>Opt 3–4</td>
<td></td>
</tr>
</tbody>
</table>

**Total minimum credits required to complete this program................................................. 66**

**Information Processing Support**

(see Certificate Section, page 118)
PROGRAMS AVAILABLE

Degrees and Diplomas

After Term 3, students must declare a Microsoft or Linux emphasis and take the respective Microsoft or Linux courses. To fulfill the program credit requirements, the student must select courses from the option list. By selecting all CISCO courses as options, the student will be prepared to test for CISCO CCNA certification.

FOR MICROSOFT SPECIALIZATION, STUDENTS MUST COMPLETE THE FOLLOWING:

Term 4

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>NET 333</td>
<td>Implementing Windows Network Infrastructure</td>
<td>3</td>
</tr>
<tr>
<td>NET 664</td>
<td>MS Windows Professional/Server</td>
<td>5</td>
</tr>
<tr>
<td>NET 343</td>
<td>Windows Directory Services</td>
<td>3</td>
</tr>
</tbody>
</table>

Courses from the Option 5 Course List Minimum 2

Term 5

Courses from the Option 5 List Minimum 12

FOR LINUX SPECIALIZATION, STUDENTS MUST COMPLETE THE FOLLOWING:

Term 4

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>NET 412</td>
<td>Linux System Administration</td>
<td>3</td>
</tr>
<tr>
<td>NET 512</td>
<td>Linux Enterprise Administration I</td>
<td>3</td>
</tr>
<tr>
<td>CIS 210</td>
<td>Web Development I</td>
<td>3</td>
</tr>
</tbody>
</table>

Courses from the Option 5 Course List Minimum 3

Term 5

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>NET 432</td>
<td>Linux System Security</td>
<td>3</td>
</tr>
<tr>
<td>NET 422</td>
<td>Linux System Programming</td>
<td>3</td>
</tr>
<tr>
<td>CIS 211</td>
<td>Web Development II</td>
<td>3</td>
</tr>
</tbody>
</table>

Courses from the Option 5 Course List Minimum 3

Option 5 Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>NET 233</td>
<td>CISCO Switches</td>
<td>4</td>
</tr>
<tr>
<td>NET 243</td>
<td>CISCO Wide Area Networks (WAN)</td>
<td>4</td>
</tr>
<tr>
<td>NET 324</td>
<td>Windows Network Management</td>
<td>4</td>
</tr>
<tr>
<td>NET 333</td>
<td>Imp Windows Network Infrastructure</td>
<td>3</td>
</tr>
<tr>
<td>NET 343</td>
<td>Windows Directory Service</td>
<td>3</td>
</tr>
<tr>
<td>NET 365</td>
<td>Design MS Active Dir &amp; Network</td>
<td>3</td>
</tr>
<tr>
<td>NET 376</td>
<td>Designing Security for MS Net</td>
<td>3</td>
</tr>
<tr>
<td>NET 412</td>
<td>Linux System Administration</td>
<td>3</td>
</tr>
<tr>
<td>NET 422</td>
<td>Linux System Programming</td>
<td>3</td>
</tr>
<tr>
<td>NET 432</td>
<td>Linux System Security</td>
<td>3</td>
</tr>
<tr>
<td>NET 434</td>
<td>Linux Systems and Certification</td>
<td>3</td>
</tr>
<tr>
<td>NET 435</td>
<td>Linux Programming for Administration</td>
<td>3</td>
</tr>
<tr>
<td>NET 436</td>
<td>Linux Network Programming</td>
<td>3</td>
</tr>
<tr>
<td>NET 512</td>
<td>Linux Enterprise Admin I</td>
<td>3</td>
</tr>
<tr>
<td>NET 532</td>
<td>Linux Enterprise Administration II</td>
<td>3</td>
</tr>
<tr>
<td>NET 612</td>
<td>Fund of Network Security</td>
<td>3</td>
</tr>
<tr>
<td>NET 653</td>
<td>Microsoft Exchange Server</td>
<td>4</td>
</tr>
<tr>
<td>NET 664</td>
<td>MS Windows Prof/Server</td>
<td>5</td>
</tr>
<tr>
<td>NET 711</td>
<td>SQL Database</td>
<td>3</td>
</tr>
<tr>
<td>NET 715</td>
<td>Database Security &amp; Auditing</td>
<td>3</td>
</tr>
<tr>
<td>NET 730</td>
<td>Computer Forensics &amp; Inv.</td>
<td>3</td>
</tr>
<tr>
<td>NET 932</td>
<td>Internship</td>
<td>3</td>
</tr>
</tbody>
</table>

Minimum number of credits required to complete this degree—Linux specialization ......................................... 67

Minimum number of credits required to complete this degree—Microsoft specialization .................................. 68

Interactive Media for Graphic Design

(see Certificate Section, page 118)

Interior Design Consultant

(see Certificate Section, page 118)

Interpretation and Translation

The Interpretation and Translation program prepares functionally bilingual students for entry-level employment in the rapidly expanding language interpretation and translation field or for transfer to a four-year degree program in translation/interpretation studies. At the completion of the program, students will be able to provide basic interpreting and translation service between English and their other language(s) in general contexts, as well as in at least one specialty area: judicial or healthcare. The program is designed for students who wish to add interpretation and translation skills to their current set of job skills, as well as those students who wish to prepare themselves for the certification exams and further academic studies that are necessary to become professional interpreters and translators.

Students in the program complete general education core requirements, a generalist track in interpretation/translation, and one of the following emphases in interpretation/translation: judicial or healthcare. All students complete an internship under the supervision of a professional interpreter/translator, during which they use the skills and apply the knowledge gained in the classroom. Interested applicants who hold a prior college degree may seek the Interpretation and Translation–Generalist Certificate, plus one or both of the following: Interpretation and Translation–Judiciary Certificate or Interpretation and Translation–Healthcare Certificate.

A program chairperson and a program counselor are available to assist students with educational and career planning.

Graduates of the Interpretation and Translation program may find employment in the courts, law enforcement agencies, healthcare institutions, social services agencies, educational institutions, nonprofit organizations, government agencies and businesses. The program also prepares students for certification exams or for further studies in the field.

Location: Urban

Selected courses in this program may be offered at other campuses or through distance learning.

Program Entry Requirements

1. Complete an application for admission.
2. Attend any required information/registration session or a program conference.
3. Provide evidence of proficiency in English with one of the following:
   a. ACT score on the English subtest of 19 or above
   b. A minimum COMPASS writing score of 70
   c. Completion of ENG 105 with a grade of “C” or better
   d. TOEFL score of 173 on the computer test or 500 on the paper test
   e. Completion of two years of college study with a minimum GPA of 2.0 (or equivalent) at an institution where English is the medium of instruction
   f. Other evidence demonstrating English proficiency may be approved by the program chair
4. Show proficiency in a second language with one of the following:
   a. Evidence of completion of high school in a country where the second language is spoken
   b. Two years of college study with a minimum GPA of 2.0 (or equivalent) at an institution where the second language is spoken
   c. Completion of a college minor in the second language with a minimum grade of “C” for all courses taken in the second language
   d. Proficiency may be demonstrated with other evidence, but must be approved by the program chair

Note: Students will need computer skills to be successful in the program. If students do not have these skills, completion of CSC 110 or BCA 212 is strongly recommended.

Students start any term; however, close contact with an academic advisor is strongly recommended for planning, because many courses are only offered once per year.

Graduation Requirements
To earn an Interpretation and Translation AS degree, a student must complete the standard core requirements for the degree, plus the Interpretation and Translation required courses and options, maintain a 2.0 grade point average and receive a grade of “C” or above in all ITR course work.

Required Courses

Complete AS degree Core Requirements ....................... 28

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ITR 101</td>
<td>Introduction to Interpretation and Translation</td>
<td>3</td>
</tr>
<tr>
<td>ITR 102</td>
<td>Tools for the Interpreter and Translator</td>
<td>3</td>
</tr>
<tr>
<td>ITR 111</td>
<td>Fundamentals of Interpretation</td>
<td>3</td>
</tr>
<tr>
<td>ITR 115</td>
<td>Fundamentals of Translation</td>
<td>3</td>
</tr>
<tr>
<td>ITR 910</td>
<td>Emphasis Seminar</td>
<td>3</td>
</tr>
<tr>
<td>ITR 120</td>
<td>Ethics for the Interpreter/Translator</td>
<td>1</td>
</tr>
</tbody>
</table>

In addition to the required courses, students are required to select one of the following Emphasis Options:

Judicial Interpretation/Translation Emphasis (17 credits)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRL 103</td>
<td>Introduction to Law</td>
<td>3</td>
</tr>
<tr>
<td>ITR 128</td>
<td>Legal Terminology &amp; Sight Translation</td>
<td>3</td>
</tr>
<tr>
<td>ITR 130</td>
<td>Judiciary Interpreting I</td>
<td>3</td>
</tr>
<tr>
<td>ITR 132</td>
<td>Judiciary Interpreting II</td>
<td>3</td>
</tr>
<tr>
<td>ITR 137</td>
<td>Judiciary Translation</td>
<td>3</td>
</tr>
<tr>
<td>ITR 800</td>
<td>Judiciary Interpreting/Translation Internship</td>
<td>2</td>
</tr>
<tr>
<td>Electives</td>
<td></td>
<td>3</td>
</tr>
</tbody>
</table>

Students in the Judiciary Interpreting/Translation Emphasis are encouraged to take POL 111 or POL 112 as part of their core requirements, and PRL 112 as their elective choice.

Healthcare Interpretation/Translation Emphasis (17 credits)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO 156</td>
<td>Human Biology w/Lab</td>
<td>3</td>
</tr>
<tr>
<td>ITR 150</td>
<td>Healthcare Interpreting I</td>
<td>3</td>
</tr>
<tr>
<td>ITR 152</td>
<td>Healthcare Interpreting II</td>
<td>3</td>
</tr>
<tr>
<td>ITR 148</td>
<td>Healthcare Terminology &amp; Sight Translation</td>
<td>3</td>
</tr>
<tr>
<td>ITR 158</td>
<td>Healthcare Translation</td>
<td>3</td>
</tr>
<tr>
<td>ITR 810</td>
<td>Healthcare Interpreting &amp; Translation Internship</td>
<td>2</td>
</tr>
<tr>
<td>Electives</td>
<td></td>
<td>3</td>
</tr>
</tbody>
</table>

Students in the Healthcare Interpretation/Translation Emphasis are encouraged to take CHM 105 as part of their core requirements, and BIO 733 or BIO 734 as their elective choice.

Total minimum credits required to complete this program.................................................. 64

Interpretation & Translation–Generalist, Healthcare and Judiciary Certificates
(see Certificate Section, pages, 118–120)

Land Surveying

The Land Surveying program prepares students for a career as a land surveyor in the state of Iowa. This program is designed to fill an increasing demand for technically skilled people in the land surveying field, and demand is expected to continue well into the 21st century. A graduate of this program may be eligible to sit for the Iowa Professional Land Surveying exam after completing state licensing board requirements.

Career opportunities are with surveying firms; construction firms; consulting engineering firms; federal, state and local government agencies; and many other areas of the private sector that support the surveying industry. Many licensed surveyors own and operate their own surveying firms.

Location: Boone

Program Entry Requirements
1. Complete an application for admission.
2. Satisfy the assessment requirement.
3. Attend any required information/registration session.
4. Students must have earned a grade of “C” or above in a high school Algebra course, or be placed in MAT 773 by the results of a COMPASS test. If students are not placed in MAT 773, they will be required to take remedial math courses to be brought up to the level of MAT 773 before taking that course.

This program is designed to start in the Fall semester.

Students who desire to start other terms may be accepted but may not graduate in four semesters due to the sequencing of course work. If starting other than Fall, please contact the Land Surveying department.

Terms 1–3 of the Land Surveying AAS degree are identical to Terms 1–3 of the Civil Engineering AAS degree. Prior to the start of Term 4, students must choose the Land Surveying emphasis or the Civil

VISIT US ONLINE: www.DMACC.edu 89
Programs Available

Engineering emphasis. Students who were accepted into the Land Surveying program must contact the Counseling/Advising office to switch their major to Civil Engineering.

Graduation Requirements

To earn a Land Surveying AAS degree, a student must complete all course work as prescribed and maintain a 2.0 grade point average.

Required Courses

**Term 1**
- CET 102 Fundamentals of Civil Engineering 3
- CET 119 Survey I 3
- CET 135 Materials I 3
- MAT 773 Applied Math II 3
- CSC 110 Intro to Computers 3

**Select 1 Course from Option 1 or 2 (see Option Courses below)** 3

**Option Courses**

**Term 2**
- CET 138 Construction I 3
- CET 178 Automated Design I 4
- CET 169 Survey II 4

**Select 1 Course from Option 1 or 2 (see Option Courses below)** 3

**Select 1 AAS Social/Behavioral Sciences degree requirement (Opt. 3)** 3

**Term 3**
- SRV 305 Field Coop 5
  *(With Department approval, students may complete BOTH Option 4 courses OR BOTH Option 5 courses in place of SRV 305.)*
- CET 307 Field Orientation Opt 4 2
- MGT 145 Human Relations in Business Opt 4 3
- CET 307 Field Orientation Opt 5 2
- PSY 102 Human and Work Relations Opt 5 3

Prior to the beginning of Term 4, students must choose the Land Surveying emphasis or the Civil Engineering emphasis. Students must contact the Counseling/Advising Office if they wish to switch their major to Civil Engineering.

*(See Civil Engineering, Terms 4 and 5, for specific courses pertaining to the Civil Engineering degree.)*

**Term 4**
- CET 219 Survey III 4
- SRV 120 US Public Lands Survey System 5
- SRV 230 Land Subdivision 3
- SRV 240 Boundary Law 4

**Term 5**
- SRV 225 Surveying Ethics 2
- SRV 215 Intro to Land Info Sys 2
- SRV 220 Boundary Surveying 3
- SRV 235 Intro to Geodesy 5
- BUS 185 Business Law I 3

Total credits required to complete AAS degree ............... 71

Law

Students planning to major in pre-law or go to law school after receiving a bachelor’s degree at a four-year college/university can satisfy many of their general education requirements at Des Moines Area Community College. Since degree requirements vary at senior institutions, students should become familiar with the specific course requirements of their selected transfer institution. Students are also encouraged to contact the four-year major advisor as early as possible to develop a transfer plan. DMACC advisors and/or counselors can also help by providing transfer materials and course planning assistance.

Legal Assistant

Legal Assistants perform a variety of legal tasks under the supervision of an attorney. Legal Assistants are also known as Paralegals. They work for attorneys in private practice, state agencies and public service organizations. Legal assistants work with the attorney in virtually every area of legal practice. They do not give advice or represent clients since that would be the actual practice of law.

Our objective is to educate students to become legal assistants who are capable of performing a variety of legal tasks. Graduates of the program should be able to provide a broad spectrum of services needed by attorneys. This objective is met by providing intensive and practical instruction by attorneys with experience and expertise in their fields of instruction. This program is approved by the American Bar Association.

Students in the program complete general education core requirements and legal specialty courses. Course offerings include torts and litigation, family law, business law, probate and income tax. All students complete an internship, under the supervision of an attorney, during which they use the skills and apply the knowledge gained in the classroom. Interested applicants who hold a prior college degree may seek the Legal Assistant Certificate.
A program chairperson and a program counselor are available to assist students with educational and career planning.

Graduates of the Legal Assistant program are employed in private law firms, the courts, public agencies and legal departments of large companies. Additionally, some students work in law-related jobs such as investigation, collections and bank trust departments.

**Location:** Urban

**Program Entry Requirements**
1. Complete an application for admission.
2. Satisfy the assessment requirement.
3. Attend any required information/registration session.

*Important Note: Students entering the program need satisfactory computer skills. BCA 212 Intro to Computer Business Applications is highly recommended as a developmental course.*

**Students may start any term.**

**Graduation Requirements**
To earn a Legal Assistant AS degree, a student must complete the standard core requirements for the degree, plus the Legal Assistant required courses and options, maintain a 2.0 grade point average and receive a grade of “C” or above in all PRL course work.

**Required Courses**

**Complete AS degree Core Requirements .......................... 28**

- PRL 103 Introduction to Law .......................... 3
- PRL 131 Torts & Litigation I .......................... 3
- PRL 141 Business & Corporate Law I .......................... 3
- PRL 280 Legal Internship & Ethics .......................... 4
- PRL 112 Legal Research and Writing I .......................... 3
- PRL 113 Legal Research and Writing II .......................... 3

**Option Courses—Select 15 Credits From Option 1**

- PRL 132 Torts & Litigation II Opt 1 .......................... 3
- PRL 161 Family Law Opt 1 .......................... 3
- PRL 142 Business & Corporate Law II Opt 1 .......................... 3
- PRL 151 Real Estate Law Opt 1 .......................... 3
- PRL 167 Probate Procedure Opt 1 .......................... 3
- PRL 169 Wills/Estate Planning/Taxation Opt 1 .......................... 3
- PRL 171 Administrative Practice Opt 1 .......................... 3
- PRL 125 Evidence: Theory and Practice Opt 1 .......................... 3
- PRL 137 Debtor/Creditor Law Opt 1 .......................... 3
- PRL 118 Computerized Legal Research Opt 1 .......................... 1
- PRL 114 Adv Legal Research and Writing Opt 1 .......................... 3
- PRL 182 Mediation Opt 1 .......................... 3
- ACC 261 Income Tax Accounting Opt 1 .......................... 3
- CSC 110 Intro to Computers Opt 1 .......................... 3
- CRJ 130 Criminal Law Opt 1 .......................... 3
- CRJ 132 Constitutional Law Opt 1 .......................... 3
- HSV 130 Interviewing/Interpersonal Relations Opt 1 .......................... 3
- Electives .......................... 2

Total credits required to complete this program .......................... 64
**Programs Available**

**Management AA degree**

**Required Courses**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MGT 101</td>
<td>Principles of Management</td>
<td>3</td>
</tr>
<tr>
<td>MKT 145</td>
<td>Sales Management</td>
<td>3</td>
</tr>
<tr>
<td>MGT 128</td>
<td>Organizational Behavior</td>
<td>3</td>
</tr>
<tr>
<td>MGT 170</td>
<td>Human Resource Management</td>
<td>3</td>
</tr>
<tr>
<td>ACC 131</td>
<td>Principles of Accounting I</td>
<td>3</td>
</tr>
<tr>
<td>ECN 120</td>
<td>Principles of Macroeconomics</td>
<td>3</td>
</tr>
<tr>
<td>ECN 130*</td>
<td>Principles of Microeconomics</td>
<td>3</td>
</tr>
</tbody>
</table>

**Total** ...........................................................................................22

*ECN 120 and ECN 130 are required courses for this program and shall also be used to fulfill 3 credits of Social/Behavioral Sciences AA Core and 3 credits of Distributive AA Core.

**Complete Remaining AA degree Core Requirements as Follows:** ................................................... 42

- Communications 9 credits
- Social & Behavioral Sciences 6 credits
- Math & Science 9 credits
- Humanities 9 credits
- Distributive 9 credits

**Total minimum credits required to complete the Management AA degree** ................................................. 64

**Management AAS degree**

**Required Courses**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MGT 130</td>
<td>Principles of Supervision</td>
<td>3</td>
</tr>
<tr>
<td>MGT 101</td>
<td>Principles of Management</td>
<td>3</td>
</tr>
<tr>
<td>MKT 145</td>
<td>Sales Management</td>
<td>3</td>
</tr>
<tr>
<td>MGT 128</td>
<td>Organizational Behavior</td>
<td>3</td>
</tr>
<tr>
<td>MGT 170</td>
<td>Human Resource Management</td>
<td>3</td>
</tr>
<tr>
<td>MGT 802</td>
<td>Business Internship Seminar I</td>
<td>2</td>
</tr>
<tr>
<td>MGT 800</td>
<td>Business Internship I</td>
<td>6</td>
</tr>
<tr>
<td>MGT 194</td>
<td>Relationship Strategies in Business</td>
<td>2</td>
</tr>
<tr>
<td>MGT 164</td>
<td>Total Quality Management</td>
<td>3</td>
</tr>
<tr>
<td>MGT 147</td>
<td>Leadership Development</td>
<td>3</td>
</tr>
<tr>
<td>MKT 110</td>
<td>Principles of Marketing</td>
<td>3</td>
</tr>
<tr>
<td>MKT 140</td>
<td>Selling</td>
<td>3</td>
</tr>
<tr>
<td>SDV 153</td>
<td>Pre-Employment Strategies</td>
<td>2</td>
</tr>
</tbody>
</table>

**Option Courses–Select 1 Course from Options 1–6 and 3 Courses from Option 7**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Option</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSC 110</td>
<td>Intro to Computers</td>
<td>Opt 1</td>
<td>3</td>
</tr>
<tr>
<td>GRD 301</td>
<td>Intro to Desktop Publishing</td>
<td>Opt 1</td>
<td>3</td>
</tr>
<tr>
<td>BCA 212</td>
<td>Intro to Computer Business Applications</td>
<td>Opt 1</td>
<td>3</td>
</tr>
<tr>
<td>ENG 105</td>
<td>Composition I</td>
<td>Opt 2</td>
<td>3</td>
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<tr>
<td>COM 703</td>
<td>Communication Skills</td>
<td>Opt 2</td>
<td>3</td>
</tr>
<tr>
<td>ACC 131</td>
<td>Principles of Accounting I</td>
<td>Opt 3</td>
<td>4</td>
</tr>
<tr>
<td>ACC 111</td>
<td>Intro to Accounting</td>
<td>Opt 3</td>
<td>4</td>
</tr>
<tr>
<td>SPC 101</td>
<td>Fundamentals of Oral Communication</td>
<td>Opt 4</td>
<td>3</td>
</tr>
<tr>
<td>SPC 126</td>
<td>Interpersonal &amp; Small Group Comm</td>
<td>Opt 4</td>
<td>3</td>
</tr>
<tr>
<td>MGT 145</td>
<td>Human Relations in Business</td>
<td>Opt 5</td>
<td>3</td>
</tr>
<tr>
<td>PSY 111</td>
<td>Intro to Psychology</td>
<td>Opt 5</td>
<td>3</td>
</tr>
<tr>
<td>BUS 112</td>
<td>Business Math</td>
<td>Opt 6</td>
<td>3</td>
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<tr>
<td>MAT 141</td>
<td>Finite Math</td>
<td>Opt 6</td>
<td>4</td>
</tr>
<tr>
<td>MGT 248</td>
<td>Systems &amp; Information Management</td>
<td>Opt 7</td>
<td>3</td>
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<tr>
<td>BUS 102</td>
<td>Intro to Business</td>
<td>Opt 7</td>
<td>3</td>
</tr>
<tr>
<td>BUS 148</td>
<td>Small Business Management</td>
<td>Opt 7</td>
<td>3</td>
</tr>
<tr>
<td>BUS 150</td>
<td>E-Commerce on the Web</td>
<td>Opt 7</td>
<td>3</td>
</tr>
<tr>
<td>BUS 278</td>
<td>Employment Law</td>
<td>Opt 7</td>
<td>3</td>
</tr>
<tr>
<td>MGT 160</td>
<td>Principles of Retailing</td>
<td>Opt 7</td>
<td>3</td>
</tr>
<tr>
<td>BUS 185</td>
<td>Business Law I</td>
<td>Opt 7</td>
<td>3</td>
</tr>
<tr>
<td>ECN 120</td>
<td>Principles of Macroeconomics</td>
<td>Opt 7</td>
<td>3</td>
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<tr>
<td>ACC 132</td>
<td>Principles of Accounting II</td>
<td>Opt 7</td>
<td>4</td>
</tr>
</tbody>
</table>

**Total minimum credits required to complete the Management AAS degree** ................................................. 66

**Management Certificate**

(See Certificate Section, page 121)

**Management Information Systems (MIS)**

The Management Information Systems (MIS) program is designed to allow students to transfer to a four-year program and additionally qualifies the students for positions as programmers and programmer analysts. The program emphasizes business applications programming. The student studies several programming languages, various levels of operating systems, various types of computer systems, and the peripheral equipment available in the field.

**Location: Urban**

Selected courses in this program are offered at other campuses, as well as on the internet as online courses.

**Program Entry Requirements**

1. Complete an application for admission.
2. Satisfy the assessment requirement.
3. Attend any required information/registration session.
4. Submit evidence of grade “C” or better in one year of high school Algebra or equivalent (DMACC Academic Achievement Center Algebra I &/or MAT 063).

**Students start any term.**

**Graduation Requirements**

To earn a Management Information Systems (MIS) AS degree, a student must complete all course work as prescribed and maintain a 2.0 grade point average.
## PROGRAMS AVAILABLE

### Term 1
- ACC 131 Principles of Accounting I  
- CIS 125 Intro to Programming Logic w/Lang  
- CSC 110 Intro to Computers  
- ENG 105 Composition I  
- Any AA/AS degree Core BIO, CHM, ENV or PHY course

### Term 2
- CIS 152 Data Structures  
- CIS 402 COBOL  
- ACC 132 Principles of Accounting II  
- ENG 106 Composition II  
- SPC 101 Fund of Oral Communication

### Term 3—Select 1 Course from Option 1
- CIS 505 Structured Systems Analysis  
- CIS 604 Visual Basic  
- CIS 303 Introduction to Data Base  
- ECN 120 Principles of Macroeconomics  
- MAT 141 Finite Mathematics

### Term 4—Select 2 Courses from Option 2
- CIS 154 Computational Structures  
- ECN 130 Principles of Microeconomics  
- AA/AS degree Core Humanities course  
- AA/AS degree Core Distributed course  
- CIS 413 COBOL II

### Total minimum credits required to complete this program......................................................... 69

### Manufacturing Technology

The DMACC Manufacturing Technology program prepares applicants for a wide variety of manufacturing tasks in industry. Successful applicants will learn the basic elements of welding, automation, computer numerical controlled machine operation, computer-aided drafting and design, machining and workplace skills. Graduates will be positioned for employment by a wide variety of manufacturers throughout the state and nation.

At completion of this two-year Associate of Applied Science degree program, graduates will be prepared for a large number of skilled careers in the manufacturing industry. Opportunities exist in many different types of manufacturing.

To apply for this program, call 515-964-6277 during business hours to request information.

Location: Ankeny, Newton

### Program Entry Requirements
1. Complete an application for admission.
2. Satisfy the assessment requirement.
3. Attend any required information/registration session.

### Students start Fall term.

### Graduation Requirements
To earn a Manufacturing Technology AAS degree, a student must complete all course work as prescribed and maintain a 2.0 grade point average.

### Term 1
- MFG 523 Controlling Mfg. Business Costs  
- COM 703 Communication Skills  
- MAT 772 Applied Math  
- MFG 171 Manufacturing Welding I

### Term 2
- MFG 250 Engine Lathe Theory  
- MFG 260 Mill Operations Theory  
- MFG 261 Milling Operations Lab  
- MFG 132 Machine Trade Printreading II

### Term 3
- MFG 818 IMT Internship  
- WEL 181 Gas Metal Arc Welding

### Term 4—Select 1 Course from Option 1
- MGT 164 Total Quality Management  
- CAD 119 Intro Computer-Aided Drafting/CADD  
- ELT 721 Robotics  
- ELT 303 Principles of Electricity  
- MGT 145 Human Relations in Business

### Term 5
- MFG 521 Measuring Devices–SPC  
- CAD 125 Intermediate CADD–Mechanical  
- CAD 139 Introduction to CAD/CAM  
- IND 124 Control Systems Overview  
- MAT 773 Applied Math II

### Total minimum credits required to complete the AAS degree......................................................... 67
PROGRAMS AVAILABLE

Marketing

Looking for a growth-oriented career? Something fast-paced, ever-changing and challenging, with opportunities for advancement and pay to match? Today, a career in Marketing offers all of this and more. You could be working for some of the fastest-growing companies and brightest leaders in business. By using your skills and creativity, you will become part of the future in American business.

Course work is designed with the help of successful marketers who know what it takes to succeed. Classroom instruction is based on lectures, labs, speakers, internships and study tours. Major areas of study include marketing, sales, advertising, promotion and understanding buyer behavior in small business, retail and business-to-business marketing environments. The Marketing program also offers many opportunities to develop and demonstrate leadership skills.

Many graduates of the Marketing program have gone on to become marketing managers, regional marketing supervisors, professional sales and customer service representatives. Some have gone on to own their own businesses and others have found careers as managers, merchandisers and buyers in the retail community. Graduates from the Marketing program are responsible for creating and/or executing marketing strategies, hiring, training and supervising employees. They are also responsible for buying and selling product offerings and planning promotions and advertising campaigns. Careers in marketing are listed as one of the fastest-growing areas for the foreseeable future. Research indicates that about one-third of the labor force is now employed in marketing. Marketing careers offer flexibility, mobility and pay to match your ability.

The Marketing program emphasizes career development along with transfer options for students planning on attending a four-year college. Contact a DMACC Marketing instructor, counselor or advisor for transfer planning assistance.

Location: Ankeny

Selected courses in this program are offered at other campuses.

Program Entry Requirements
1. Complete an application for admission.
2. Satisfy the assessment requirement.
3. Attend any required information/registration session.

Students start any term.

Graduation Requirements
To earn a Marketing AAS degree, a student must complete all course work as prescribed and maintain a 2.0 grade point average.

Required Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MKT 110</td>
<td>Principles of Marketing</td>
<td>3</td>
</tr>
<tr>
<td>MKT 140</td>
<td>Selling</td>
<td>3</td>
</tr>
<tr>
<td>MKT 150</td>
<td>Principles of Advertising</td>
<td>3</td>
</tr>
<tr>
<td>MKT 115</td>
<td>Business-to-Business Marketing</td>
<td>3</td>
</tr>
<tr>
<td>MKT 141</td>
<td>Advanced Selling Strategies</td>
<td>3</td>
</tr>
<tr>
<td>MKT 160</td>
<td>Principles of Retailing</td>
<td>3</td>
</tr>
<tr>
<td>APP 111</td>
<td>Visual Merchandising &amp; Design</td>
<td>3</td>
</tr>
<tr>
<td>MGT 130</td>
<td>Principles of Supervision</td>
<td>3</td>
</tr>
<tr>
<td>MGT 147</td>
<td>Leadership Development</td>
<td>3</td>
</tr>
<tr>
<td>MGT 800</td>
<td>Business Internship I</td>
<td>6</td>
</tr>
</tbody>
</table>

Total minimum credits required to complete this program ..................................................... 68

Medical Assistant

The Medical Assistant program is designed to prepare students to be employed in a private physician’s office, a clinic, hospital or laboratory. As multiskilled health professionals, medical assistants perform a variety of clinical procedures and administrative functions in these settings.

Students gain a basic knowledge of anatomy and physiology, laboratory procedures, administrative procedures and patient care techniques. These subjects are presented in the classroom, through laboratory experience and in a 10-week supervised clinical experience in the field. The students will not receive pay during the clinical rotation.

The DMACC Medical Assistant program is accredited by the Commission on Accreditation of Allied Health Education Programs (CAAHEP), www.caahep.org, 1361 Park Street, Clearwater, Florida 33756, phone 727-210-2350, upon the recommendation of the Medical Assisting Education Review Board (MAERB) of the American Association of Medical Assistants Endowment (AAMAE), 20 North Wacker Drive, Suite 1575, Chicago, IL 60606. DMACC graduates are eligible to take the certification examination (CMA (AAMA)) given by the certifying board of the American Association of Medical Assistants. Graduates are also able to take the State of Iowa Limited Radiographer examination upon completion of the program.
Criminal background checks will be completed on each student. Criminal convictions or documented history of abuse may delay or prevent students from participating in clinical education experiences. Students unable to participate in clinical education will be unable to complete the Medical Assistant program. A felony conviction may prevent applicants from being eligible for the AAMA Certified Medical Assistant examination.

**Location: Ankeny**

**Program Entry Requirements**

1. Complete an application for admission.
2. Satisfy the assessment requirement.
3. Attend any required information/registration session.
4. Submit evidence of grade “C” or better in one year of high school Biology or equivalent (DMACC Academic Achievement Center Biology I & II or BIO 156).
5. Submit evidence of typing/word processing skill of 35 WPM with 5 errors or less.
6. Submit proof of high school graduation or GED prior to enrollment.

**Students start Fall term.**

**Graduation Requirements**

To earn a Medical Assistant diploma, a student must complete all course work as prescribed and maintain a 2.0 grade point average. A grade of 2.0 (C) or better is required in all MAP courses. A student must receive a grade of “C” or better in the first course of a sequential course offering before enrolling in the second-level course of the sequence. Sequential courses include MAP 544 & MAP 554; MAP 225 & MAP 228; MAP 347 & MAP 348; MAP 110 & MAP 118; MAP 250 & MAP 252; and MAP 118 & MAP 130. Several courses have corequisites as listed in the catalog.

**Term 1—Select 1 Course from Option 1**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>MAP 544</td>
<td>Human Body–Health and Disease I</td>
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<tr>
<td>MAP 129</td>
<td>Medical Terminology</td>
<td>1</td>
</tr>
<tr>
<td>MAP 225</td>
<td>Medical Laboratory Procedures I</td>
<td>4</td>
</tr>
<tr>
<td>MAP 347</td>
<td>Medical Office Procedures I</td>
<td>3</td>
</tr>
<tr>
<td>MAP 110</td>
<td>Medical Office Management I</td>
<td>2</td>
</tr>
<tr>
<td>MAP 423</td>
<td>Professional Development</td>
<td>3</td>
</tr>
<tr>
<td>ENG 105</td>
<td>Composition I</td>
<td>3 Opt 1</td>
</tr>
<tr>
<td>COM 703</td>
<td>Communication Skills</td>
<td>3 Opt 1</td>
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</table>

**Term 2**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>MAP 554</td>
<td>Human Body–Health and Disease II</td>
<td>4</td>
</tr>
<tr>
<td>MAP 250</td>
<td>Diagnostic Radiography I</td>
<td>2</td>
</tr>
<tr>
<td>MAP 118</td>
<td>Medical Office Management II</td>
<td>4</td>
</tr>
<tr>
<td>MAP 228</td>
<td>Medical Laboratory Procedures II</td>
<td>3</td>
</tr>
<tr>
<td>MAP 348</td>
<td>Medical Office Procedures II</td>
<td>3</td>
</tr>
<tr>
<td>PSY 111</td>
<td>Introduction to Psychology</td>
<td>3</td>
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</tbody>
</table>

**Term 3**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>MAP 606</td>
<td>Professional Development III</td>
<td>1</td>
</tr>
<tr>
<td>MAP 252</td>
<td>Diagnostic Radiography II</td>
<td>2</td>
</tr>
<tr>
<td>MAP 130</td>
<td>Transcription</td>
<td>1</td>
</tr>
<tr>
<td>MAP 624</td>
<td>Practicum</td>
<td>5</td>
</tr>
</tbody>
</table>

**Total credits required to complete this program .......... 48**

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**Medical Insurance and Coding**

see Certificate Section, page 122)

**Medical Laboratory Technology**

The Medical Laboratory Technology program prepares the student to perform complex laboratory procedures with a limited amount of supervision. This training includes a six-month hospital laboratory assignment.

The program is accredited by the National Accrediting Agency for Clinical Laboratory Sciences (NAACLS), 5600 N. River Road, Ste. 720, Rosemont, IL 60018, info@naacls.org, www.naacls.org.

Graduates are eligible to take national certification examinations. Job opportunities are found in hospitals, clinics, doctors’ offices, public health laboratories, veterinarians’ offices and industrial laboratories.

Background checks for criminal history may be done by clinical affiliates. This may prevent placement for clinical/practicum courses, which will affect successful program completion.

**Location: Ankeny**

**Program Entry Requirements**

1. Complete an application for admission.
2. Satisfy the assessment requirement.
3. Attend a required information/registration session or obtain the approval of the Program chair.
4. Submit to the Admissions Office evidence of high school graduation or GED prior to enrollment. Recommended GPA of 2.5 or GED of 55.
5. Submit to Admissions Office evidence of grade “C” or better in one year of high school Algebra or the equivalent (MAT 063).
6. Submit to the Admissions Office evidence of grade “C” or better in one year of high school Biology or the equivalent (BIO 156 or Academic Achievement Center Biology I and II).
7. Submit to the Admissions Office evidence of grade “C” or better in one year of high school Chemistry or the equivalent (CHM 122 or Academic Achievement Center Chemistry I and II).
8. The following criteria are recommended: grade of “C” or better in high school-level Algebra II, ACT score of 20 or above, COMPASS scores (Writing 70, Reading 81, Algebra 49).
9. BIO 164 Essentials Anatomy/Physiology is a required course in the MLT program. Students are strongly encouraged to take this course or an equivalent anatomy and physiology course(s) prior to starting the MLT program. Will accept BIO 733 Health Science Anatomy and BIO 734 Health Science Physiology or BIO 168 Anatomy & Physiology I and BIO 173 Anatomy & Physiology II (or equivalent courses) in place of BIO 164 Essentials Anatomy/Physiology.

**Students start Fall term.**

**Graduation Requirements**

To earn a Medical Laboratory Technology AAS degree, a student must complete all course work as prescribed and maintain a 2.0 grade point average. A grade of “C” or better is required in all MLT courses.
Programs Available

Medical Office Specialist
The Medical Office Specialist program is designed to prepare the student to work in a variety of medical settings, including hospitals/medical centers, clinics, health insurance companies and other health-related businesses. The office specialist works with administrative areas in the practice including front office, transcription, insurance and billing and is often the first contact with the patient; however, this program is not designed to prepare the student for direct patient care.

The student is responsible for obtaining their internship site and must submit for faculty approval. Internship sites may require a background check for criminal history. Failure to pass the background check may prevent successful completion of the degree program.

Upon successful completion of all four terms, the student is eligible to receive an AAS degree. A student completing the first three terms only is eligible to receive a diploma.

Location: Ankeny
Selected courses in this program are offered at other campuses.

Program Entry Requirements
1. Complete an application for admission.
2. Satisfy the assessment requirement.
3. Attend any required information/registration session.
4. Complete the required COMPASS testing, obtaining a satisfactory score in writing skills (70 or higher) or ACT writing score of 19 or higher or completion of ADM 157 Business English with a grade of “C” or better.
5. Keyboarding speed of 40 NWPM or above as demonstrated by a five-minute test.

Students start Fall term.

Graduation Requirements
To earn a Medical Office Specialist diploma or AAS degree, a student must complete all course work as prescribed and maintain a 2.0 grade point average.

Term 1
Select 1 Course from Options 1, 2 & 3

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>MLT 120</td>
<td>Urinalysis</td>
<td>3</td>
</tr>
<tr>
<td>MLT 115</td>
<td>Clinical Lab Fundamentals</td>
<td>3</td>
</tr>
<tr>
<td>BIO 164*</td>
<td>Essentials Anatomy/Physiology</td>
<td>*Opt 1a 5</td>
</tr>
<tr>
<td>CHM 122</td>
<td>Intro to General Chemistry</td>
<td>Opt 2  4</td>
</tr>
<tr>
<td>CHM 165</td>
<td>General/Inorg Chemistry I</td>
<td>Opt 2  4</td>
</tr>
<tr>
<td>PSY 111</td>
<td>Introduction to Psychology</td>
<td>Opt 3  3</td>
</tr>
<tr>
<td>SOC 110</td>
<td>Introduction to Sociology</td>
<td>Opt 3  3</td>
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</table>

Term 2
Select 1 Course from Options 4 & 5

<table>
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<th>Course Name</th>
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<tbody>
<tr>
<td>MLT 232</td>
<td>Advanced Hematology &amp; Coagulation</td>
<td>5</td>
</tr>
<tr>
<td>ENG 105</td>
<td>Composition I</td>
<td>3</td>
</tr>
<tr>
<td>BIO 732</td>
<td>Health Science Microbiology</td>
<td>Opt 4  4</td>
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<tr>
<td>BIO 187</td>
<td>Microbiology w/Lab</td>
<td>Opt 4  4</td>
</tr>
<tr>
<td>CHM 132</td>
<td>Intro to Organic/Biochemistry</td>
<td>Opt 5  4</td>
</tr>
<tr>
<td>CHM 263</td>
<td>Organic Chemistry I</td>
<td>Opt 5  5</td>
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Term 3

<table>
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<tr>
<td>MLT 261</td>
<td>Immunohematology</td>
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<tr>
<td>MLT 270</td>
<td>Immunology &amp; Serology</td>
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<tr>
<td>MLT 180</td>
<td>Clinical Lab Practicum I</td>
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Term 4
Select 1 Course from Option 6

<table>
<thead>
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<th>Course Name</th>
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<tbody>
<tr>
<td>MLT 242</td>
<td>Clinical Chemistry</td>
<td>8</td>
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<tr>
<td>MLT 251</td>
<td>Clinical Microbiology</td>
<td>6</td>
</tr>
<tr>
<td>SPC 101</td>
<td>Fund of Oral Communication</td>
<td>Opt 6  3</td>
</tr>
<tr>
<td>SPC 126</td>
<td>Interpersonal &amp; Small Grp Comm</td>
<td>Opt 6  3</td>
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</table>

Term 5

<table>
<thead>
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<th>Course Name</th>
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<tbody>
<tr>
<td>MLT 282</td>
<td>Clinical Laboratory Practicum II</td>
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<tr>
<td>MLT 290</td>
<td>Clinical Seminar and Review</td>
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Total credits required to complete this program .............. 73

Course options for anatomy and physiology in place of BIO 164:

<table>
<thead>
<tr>
<th>Course Code</th>
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<th>Credits</th>
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<tbody>
<tr>
<td>BIO 733</td>
<td>Health Science Anatomy</td>
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<tr>
<td>AND</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BIO 734</td>
<td>Health Science Physiology</td>
<td>Opt 1b  3</td>
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<tr>
<td>OR</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BIO 168</td>
<td>Anatomy &amp; Physiology I</td>
<td>Opt 1c  4</td>
</tr>
<tr>
<td>AND</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BIO 173</td>
<td>Anatomy &amp; Physiology II</td>
<td>Opt 1c  4</td>
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Term 1

<table>
<thead>
<tr>
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<th>Course Name</th>
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<tr>
<td>MGT 145</td>
<td>Human Relations in Business</td>
<td>3</td>
</tr>
<tr>
<td>ADM 157</td>
<td>Business English</td>
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<td>BUS 112</td>
<td>Business Math</td>
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<td>HSC 120*</td>
<td>Medical Terminology I</td>
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<tr>
<td>BCA 133</td>
<td>Word Processing Skill Development I</td>
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<tr>
<td>BCA 212</td>
<td>Intro Computer Business Applications</td>
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Term 2

<table>
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<th>Course Name</th>
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<tbody>
<tr>
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<tr>
<td>HSC 121*</td>
<td>Medical Terminology II</td>
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</tr>
<tr>
<td>BCA 137</td>
<td>Word Processing Skill Dev II</td>
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<tr>
<td>ADM 131</td>
<td>Office Calculators</td>
<td>1</td>
</tr>
<tr>
<td>MAP 141</td>
<td>Medical Insurance</td>
<td>3</td>
</tr>
<tr>
<td>ADM 259</td>
<td>Professional Development</td>
<td>3</td>
</tr>
<tr>
<td>MTR 120</td>
<td>Medical Transcription I</td>
<td>3</td>
</tr>
</tbody>
</table>
**Programs Available**

**Term 3**
- MAP 532 Human Body–Health & Disease  
- ADM 215 Medical Office Procedures  
- MTR 121 Medical Transcription II  

Total credits required to complete the diploma................. 46

**Term 4—Select 1 Course from Option 1 and Select 1 Course from Option 2**
- ACC 111 Intro to Accounting  
- ADM 154 Business Communication  
- MAP 803 Internship—Medical Office Spec.  
- BCA 213 Intermediate Computer Business Appl  
- MAP 150 Adv Medical Billing/Coding  
- MTR 122 Medical Transcription III  
- SPC 101 Fund of Oral Communication  
- SPC 126 Interpersonal & Small Group Comm  

Total credits required to complete aas degree................. 64

*Challenge test available. Must earn 74%.

---

**Medical Transcriptionist**

(see Certificate Section, page 122)

**Medicine**

Students planning to major in premed or go to medical school after receiving the bachelor’s degree at a four-year college/university can satisfy many of their general education requirements at Des Moines Area Community College. Since degree requirements vary at senior institutions, students should become familiar with the specific course requirements of their selected transfer institution. Students are also encouraged to contact the four-year major advisor as early as possible to develop a transfer plan. DMACC advisors and/or counselors can also help by providing transfer materials and course planning assistance.

**Microcomputers**

(see Certificate Section, page 122)

**Mortuary Science—Advanced Standing**

The Mortuary Science program will prepare students who have earned a minimum of an Associate Degree to work within the funeral service profession. The Mortuary Science program is a field of human and community services that prepares an individual to become a funeral director.


The Aims and Purposes of the Mortuary Science program at DMACC are:

1. To enlarge the background and knowledge of students about the funeral service profession.
2. To educate students in every phase of funeral service, and to help enable them to develop the proficiency and skills necessary of the profession.
3. To educate students concerning the responsibilities of the funeral service profession to the community at large.

4. To emphasize high standards of ethical conduct.
5. To provide a curriculum at the postsecondary level of instruction.
6. To encourage research in the field of funeral service.
7. To provide students the business and legal knowledge, philosophical/ethical principles, and specific techniques and skills to enable them to be successful within the funeral service profession.
8. To educate and prepare individuals for active contribution to the service and welfare of their communities.

**Location: Ankeny**

**Program Entry Requirements**

1. Complete an application for admission.
2. Satisfy DMACC's general assessment requirement.
3. Attend any required information/registration session.
4. a. Submit a transcript of all completed college work that indicates the awarding of a minimum of an Associate degree (AA, AS, AAS, AGS) from a regionally accredited college or university, or
   b. Submit a transcript of all completed college work that indicates having earned a minimum of 64 college credits from a regionally accredited college or university with a grade average of “C” or above.
5. Submit evidence of a minimum of 15 credits earned in general education core; that includes one communications course, one mathematics course, and one Social & Behavioral Sciences course. A list of courses that meet general education core requirements can be found in the DMACC catalog or linked from the Mortuary Science program website at http://funeral.dmacc.edu.

**Classes start Fall term only.**

**Graduation Requirements**

To earn a Mortuary Science—Advanced Standing diploma, a student must complete all course work as prescribed, maintain a 2.0 grade point average, and earn a grade of “C” or above in all courses in the program.

To prevent delays in the scheduling of courses and graduation, students should complete a required human anatomy course (BIO 733 or BIO 164) and the required business courses (ACC 111 or ACC 131, and BUS 185) prior to beginning the MOR courses.

**Required Courses**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Options</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACC 131</td>
<td>Principles of Accounting I</td>
<td>Opt 1</td>
<td>4</td>
</tr>
<tr>
<td>ACC 111</td>
<td>Intro to Accounting</td>
<td>Opt 1</td>
<td>3</td>
</tr>
<tr>
<td>BIO 733</td>
<td>Health Science Anatomy</td>
<td>Opt 2</td>
<td>3</td>
</tr>
<tr>
<td>BIO 164</td>
<td>Essentials Anatomy/Physiology</td>
<td>Opt 2</td>
<td>5</td>
</tr>
<tr>
<td>Human Anatomy Course Approved by the Program chair</td>
<td>Opt 2</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>BUS 185</td>
<td>Business Law I</td>
<td></td>
<td>3</td>
</tr>
</tbody>
</table>

(A list of approved Anatomy courses can be found on the program website.)

**MOR Courses**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MOR 305</td>
<td>History of Funeral Service</td>
<td>2</td>
</tr>
<tr>
<td>MOR 310</td>
<td>Pathology for Mortuary Science</td>
<td>3</td>
</tr>
<tr>
<td>MOR 315</td>
<td>Funeral Law</td>
<td>3</td>
</tr>
<tr>
<td>MOR 320</td>
<td>Thanatology</td>
<td>3</td>
</tr>
<tr>
<td>MOR 325</td>
<td>Funeral Directing</td>
<td>3</td>
</tr>
</tbody>
</table>
### Programs Available

- **MOR 330** Funeral Merchandising 3
- **MOR 335** Embalming I 3
- **MOR 336** Embalming I Clinical 1
- **MOR 340** Embalming II 3
- **MOR 341** Embalming II Clinical 1
- **MOR 345** Restorative Art 3
- **MOR 346** Restorative Art Lab 1
- **MOR 354** Funeral Home Operations I 1
- **MOR 355** Funeral Home Operations II 1
- **MOR 360** Thanatotechnology 2
- **MOR 365** Survey of Infectious Diseases 2
- **MOR 941** Practicum* 4

**Total minimum credits required to complete this program: 48**

*During MOR 941 Practicum, each student is required to take the National Board Exam as a graduation requirement.

The annual passage rate of first-time takers on the National Board Examination (NBE) for the most recent three-year period for this institution and all ABFSE-accredited funeral service education programs is posted on the ABFSE website (www.abfse.org).

State licensure requirements vary from state to state. Applicants must meet all state requirements. For complete licensure requirements, contact the State Board of Professional Licensure in the state in which you intend to practice. In Iowa, call 515-281-4287.

### Network Security Manager

(see Certificate Section, page 123)

### Nursing-Advanced Standing

This program offers the opportunity for current Iowa Licensed Practical Nurses to complete an Associate degree in Nursing. Students enter the third term of the Associate degree Nursing curriculum. Upon successful completion of Terms 3, 4 and 5, students are eligible to take the NCLEX exam for Registered Nurse Licensure (NCLEX-RN). The program is approved by the Iowa Board of Nursing and accredited by the National League for Nursing Accrediting Commission (NLNAC), Inc., 61 Broadway–33rd Floor, New York City, NY 10006, 212-363–5555.

**Locations: Ankeny, Boone-Summer and Fall term Carroll-Summer Term Only**

Part-time option may be available on select campuses. Liberal Arts courses may be taken on any campus where they are offered.

The new requirements as listed below will be enforced for all students effective Fall term 2009.

**Program Entry Requirements**

1. Complete an application for admission to the Advanced Standing Nursing program.
2. Attend required Nursing information session, registration session and a Nursing program orientation.
3. Provide proof of completion of an approved Practical Nursing program comparable to DMACC Practical Nursing as determined by the Director of Nursing Education and with a cumulative GPA of 2.0 or above.

**Term 3-Select 1 Course from Option 1**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADN 126</td>
<td>2</td>
</tr>
<tr>
<td>SPC 126</td>
<td>3</td>
</tr>
<tr>
<td>BIO 187</td>
<td>4</td>
</tr>
<tr>
<td>BIO 732</td>
<td>4</td>
</tr>
</tbody>
</table>

**Term 3-Select 1 Course from Option 1**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO 733</td>
<td>3</td>
</tr>
<tr>
<td>BIO 734</td>
<td>3</td>
</tr>
<tr>
<td>ENG 105</td>
<td>3</td>
</tr>
<tr>
<td>PSY 111</td>
<td>3</td>
</tr>
<tr>
<td>PSY 121</td>
<td>3</td>
</tr>
</tbody>
</table>

### Degrees and Diplomas

4. Provide a copy of current Iowa LPN licensure (or other state licensure, recognized by Iowa pursuant to the Nurse Licensure Compact).
5. Complete DMACC’s assessment requirement.
6. Complete Nursing program admissions testing with satisfactory minimum scores in Reading, Writing and Mathematics.
7. Meet the minimum established score (775) on the required PN-to-ADN Assessment Test (HESI–PN exit).
8. Complete the following courses with a grade of “C” (not C-) or better in each:
   - BIO 733–Health Science Anatomy
   - BIO 734–Health Science Physiology
   - ENG 105–Composition I
   - PSY 111–Introduction to Psychology
   - PSY 121–Developmental Psychology
9. Provide proof of high school graduation or GED completion.

Criminal background checks will be completed on each student. Criminal convictions or documented history of abuse may delay or prevent students from participating in clinical education experiences. Results of the criminal record/child and adult abuse registry checks will be released to the Department of Human Services, which will determine if the crime or founded abuse warrants prohibition from clinical education experience. Students unable to participate in clinical education will be unable to complete the Nursing program.

Proof of immunizations is required of all Nursing students. Completion of the Student Health and Immunization Record form and current certification by either the American Heart Association (CPR for the Healthcare Provider) or American Red Cross (CPR for the Professional Rescuer) are required prior to beginning clinical rotations. Proof of a current flu vaccination is required of all Nursing students by January of each year. Further information is available on the Nursing program website at www.dmacc.edu/programs/nursing.

### Graduation Requirements

To earn an Associate degree (AAS) in Nursing, a student must complete all course work as prescribed and have a grade of “C” or above in all ADN and support courses in the curriculum.

In both the Practical and Associate degree levels of the Nursing program, all Nursing and Liberal Arts support courses must be successfully completed with a grade of “C” or above. In order to progress to the next term, courses must be successfully completed in the term identified or in a previous term.

**Prerequisites**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO 733</td>
<td>3</td>
</tr>
<tr>
<td>BIO 734</td>
<td>3</td>
</tr>
<tr>
<td>ENG 105</td>
<td>3</td>
</tr>
<tr>
<td>PSY 111</td>
<td>3</td>
</tr>
<tr>
<td>PSY 121</td>
<td>3</td>
</tr>
</tbody>
</table>

**Term 3-Select 1 Course from Option 1**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADN 126</td>
<td>2</td>
</tr>
<tr>
<td>SPC 126</td>
<td>3</td>
</tr>
<tr>
<td>BIO 187</td>
<td>4</td>
</tr>
<tr>
<td>BIO 732</td>
<td>4</td>
</tr>
</tbody>
</table>

98 DES MOINES AREA COMMUNITY COLLEGE CATALOG 2009–2010
Term 4
ADN 611 Professional Nursing Practice 2
ADN 416 Family Health Nursing 5
ADN 474 Mental Health Nursing 5
SOC 110 Introduction to Sociology 3

Term 5—Select 1 Course from Option 2
ADN 551 Adult Health Nursing 7
ADN 821 Nursing Seminar 3
HUM 116 Encounters in Humanities Opt 2 3
LIT 101 Introduction to Literature Opt 2 3
PHI 101 Introduction to Philosophy Opt 2 3
PHI 110 Introduction to Logic Opt 2 3
PHI 105 Introduction to Ethics Opt 2 3
REL 101 Survey of World Religions Opt 2 3

Total additional credits required to complete this program ......................................................52

Nursing programs

Practical Nursing and Associate Degree Nursing

The Nursing program is designed as a career ladder program. The first two semesters provide a common core of nursing theory and skills for both the Practical Nursing and Associate degree Nursing students. The student who completes Term 1 and 2 of the Practical Nursing program is prepared to become a Licensed Practical Nurse (LPN). LPNs provide nursing care under the supervision of a Registered Nurse or a physician. The LPN is prepared to provide basic therapeutic, rehabilitative and preventive care for individuals of all ages, primarily in a structured care setting such as hospitals, long-term care facilities or clinics. Upon successful completion of two terms, the student is eligible to take the National Council Licensure Exam for Practical Nurse Licensure (NCLEX–PN).

An Associate degree in Nursing and a career as a Registered Nurse are available to students who continue in the program and successfully complete Terms 3, 4 and 5. As members of the nursing profession, registered nurses are accountable for their own nursing practice. The Associate degree Nurse (ADN) utilizes more complex nursing knowledge and skills to assess, plan, provide, evaluate and manage nursing care for patients in hospitals, long-term care facilities and a variety of community-based healthcare settings. Upon successful completion of two terms, the student is eligible to take the National Council Licensure Exam for Practical Nurse Licensure (NCLEX–PN).

An Associate degree in Nursing and a career as a Registered Nurse are available to students who continue in the program and successfully complete Terms 3, 4 and 5. As members of the nursing profession, registered nurses are accountable for their own nursing practice. The Associate degree Nurse (ADN) utilizes more complex nursing knowledge and skills to assess, plan, provide, evaluate and manage nursing care for patients in hospitals, long-term care facilities and a variety of community-based healthcare settings. Upon successful completion of two terms, the student is eligible to take the National Council Licensure Exam for Practical Nurse Licensure (NCLEX–PN).

Program Locations: Ankeny, Boone, Carroll, Newton—Practical Nursing only, Urban—part-time option

Selected Liberal Arts courses in this program are offered at other campuses. The Nursing program is approved by the Iowa Board of Nursing and accredited by the National League for Nursing Accrediting Commission (NLNAC), Inc., 61 Broadway–33rd Floor, New York City, NY 10006, 212-363-5555.

Program Entry Requirements

1. Complete an application for admission to the Nursing program.
2. Attend required Nursing information session, registration meetings and a Nursing program orientation for PN and ADN levels.
3. Complete DMACC’s assessment requirement.
4. Complete required Nursing program admissions testing with satisfactory minimum scores in Reading, Writing and Mathematics.
5. Successfully complete HSC 172 plus HSC 182 or an equivalent 120-hour (or more) Certified Nurse Assistant course from an approved program, January 1992 or after.
6. Submit proof of successful completion of Nurse Aide written (NRAO 858) and skills (NRAO 859) tests for placement on the Direct Care Worker Registry.
7. Complete the following courses with a grade of “C” (not C-) or better in each: BIO 733—Health Science Anatomy
PSY 111—Introduction to Psychology

8. Proof of high school graduation or GED completion.

Criminal background checks will be completed on each student. Criminal convictions or documented history of abuse may delay or prevent students from participating in clinical education experiences. Results of the criminal record/child and adult abuse registry checks will be released to the Department of Human Services, which will determine if the crime or founded abuse warrants prohibition from clinical education experience. Students unable to participate in clinical education will be unable to complete the Nursing program.

Proof of immunizations is required of all Nursing students. Completion of the Student Health and Immunization Record form and current certification by either the American Heart Association (CPR for the Healthcare Provider) or American Red Cross (CPR for the Professional Rescuer) are required prior to beginning clinical rotations. Proof of a current flu vaccination is required of all nursing students by January of each year.

Practical Nursing starts:
Ankeny, Boone—Fall and Spring terms; Carroll, Newton—Fall term only; Urban—Part-time, Summer term only in even-numbered years

Associate Degree Nursing starts:
Ankeny, Boone—Summer and Fall terms; Carroll—Summer term only; Urban—Part-time, Summer term only in even-numbered years

In both the Practical and Associate Degree levels of the program, all Nursing and Liberal Arts support courses must be successfully completed with a grade of “C” or above. In order to progress to the next term, these courses must be successfully completed in the term identified or in a previous term.

Effective Fall 2009, continuation in the Associate Degree program at the Ankeny, Boone, Carroll and Urban Campuses requires successful completion of the following progression requirements: Term 1 courses at 78% or better and successful completion of all Term 2 courses (PNN 605, PNN 606 and PNN 351) at 80% or better OR a score of 775 or better on the HESI–PN exam taken during Term 2. Students who successfully complete the Practical Nursing program at Newton Campus and satisfy the progression requirements may apply to special start into the ADN program on a different campus, pending space available. Further information is available on the Nursing program website at www.DMACC.edu 99
**Programs Available**

www.dmacc.edu/programs/nursing.

**Graduation Requirements**

To earn a Practical Nursing diploma, a student must complete all course work as prescribed in Terms 1 and 2 and have “C” or above in all Nursing and support courses in the curriculum.

To earn an Associate degree (AAS) in Nursing, a student must complete all course work as prescribed in Terms 1-5, meet the progression requirements and have a grade of “C” or above in all PNN, ADN and support courses in the curriculum.

**Practical Nursing**

Students should take required Liberal Arts support courses in advance when possible.

In the Practical Nursing level of the program, all Nursing and Liberal Arts support courses must be successfully completed with a grade of “C” or above. In order to progress to the next term, these courses must be successfully completed in the term identified or in a previous term.

Continuation to the Associate degree program requires successful completion of all Term 1 Nursing courses at 78% or better and all Term 2 Nursing courses at 80% or better OR a score of 775 or better on the HESI–PN exam taken during Term 2 of the Practical Nursing Curriculum.

**Prerequisite**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO 733</td>
<td>Health Science Anatomy</td>
<td>3</td>
</tr>
<tr>
<td>PSY 111</td>
<td>Introduction to Psychology</td>
<td>3</td>
</tr>
</tbody>
</table>

**Term 1**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO 734</td>
<td>Health Science Physiology</td>
<td>3</td>
</tr>
<tr>
<td>PNN 151</td>
<td>Fundamentals of Nursing</td>
<td>4</td>
</tr>
<tr>
<td>PNN 152</td>
<td>Nursing Practice I</td>
<td>4</td>
</tr>
<tr>
<td>PNN 153</td>
<td>Success in Nursing</td>
<td>2</td>
</tr>
<tr>
<td>PSY 121</td>
<td>Developmental Psychology</td>
<td>3</td>
</tr>
</tbody>
</table>

**Term 2**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG 105</td>
<td>Composition I</td>
<td>3</td>
</tr>
<tr>
<td>PNN 605</td>
<td>Nursing Practice II</td>
<td>5</td>
</tr>
<tr>
<td>PNN 606</td>
<td>Nursing Practice III</td>
<td>5</td>
</tr>
<tr>
<td>PNN 351</td>
<td>Practical Nursing Roles</td>
<td>1</td>
</tr>
</tbody>
</table>

**Total credits required to complete the diploma................. 36**

**Associate Degree Nursing**

Students should take required Liberal Arts support courses in advance when possible.

Progression to the Associate degree level requires successful completion of all Term 1 Nursing courses at 78% or better and all Term 2 Nursing courses at 80% or better OR a score of 775 or better on the HESI–PN exam taken during Term 2 of the Practical Nursing Curriculum.

In the Associate degree program, all Nursing and Liberal Arts support courses must be successfully completed with a grade of “C” or above. In order to progress to the next term, these courses must be successfully completed in the term identified or in a previous term.

Students must complete Terms 1 and 2 and satisfy progression requirements prior to enrolling in ADN courses.

**Term 3—Select 1 Course from Option 1**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPC 126</td>
<td>Interpersonal and Small Group Comm.</td>
<td>3</td>
</tr>
<tr>
<td>BIO 732</td>
<td>Health Science Microbiology</td>
<td>Opt 1</td>
</tr>
<tr>
<td>BIO 187</td>
<td>Microbiology w/Lab</td>
<td>Opt 1</td>
</tr>
</tbody>
</table>

**Term 4**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADN 611</td>
<td>Professional Nursing Practice</td>
<td>2</td>
</tr>
<tr>
<td>ADN 416</td>
<td>Family Health Nursing</td>
<td>5</td>
</tr>
<tr>
<td>ADN 474</td>
<td>Mental Health Nursing</td>
<td>5</td>
</tr>
<tr>
<td>SOC 110</td>
<td>Introduction to Sociology</td>
<td>3</td>
</tr>
</tbody>
</table>

**Term 5—Select 1 Course from Option 2**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADN 551</td>
<td>Adult Health Nursing</td>
<td>7</td>
</tr>
<tr>
<td>ADN 821</td>
<td>Nursing Seminar</td>
<td>3</td>
</tr>
<tr>
<td>HUM 116</td>
<td>Encounters in Humanities</td>
<td>Opt 2</td>
</tr>
<tr>
<td>LIT 101</td>
<td>Introduction to Literature</td>
<td>Opt 2</td>
</tr>
<tr>
<td>PHI 101</td>
<td>Introduction to Philosophy</td>
<td>Opt 2</td>
</tr>
<tr>
<td>PHI 110</td>
<td>Introduction to Logic</td>
<td>Opt 2</td>
</tr>
<tr>
<td>PHI 105</td>
<td>Introduction to Ethics</td>
<td>Opt 2</td>
</tr>
<tr>
<td>REL 101</td>
<td>Survey of World Religions</td>
<td>Opt 2</td>
</tr>
</tbody>
</table>

**Office Assistant**

The Office Assistant diploma curriculum is for individuals who want to develop or refresh their office skills in order to qualify for general office work. Students gain a basic knowledge of English, math, computer applications and human relations skills. By selecting an emphasis during Term 2, students are able to customize their curriculum and gain specialized skills.

**Locations: Ankeny, Boone, Carroll, Urban**

Selected courses in this program are offered at other campuses.

**Program Entry Requirements**

1. Complete an application for admission.
2. Satisfy the assessment requirement.
3. Attend any required information/registration session.

**Students start any term.**

**Graduation Requirements**

To earn an Office Assistant diploma, a student must complete all course work as prescribed and maintain a 2.0 grade point average.

**Term 1**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUS 112</td>
<td>Business Math</td>
<td>3</td>
</tr>
<tr>
<td>MGT 145</td>
<td>Human Relations in Business</td>
<td>3</td>
</tr>
<tr>
<td>ADM 157</td>
<td>Business English</td>
<td>3</td>
</tr>
<tr>
<td>BCA 133</td>
<td>Word Processing Skill Development</td>
<td>4</td>
</tr>
<tr>
<td>ADM 131</td>
<td>Office Calculators</td>
<td>1</td>
</tr>
<tr>
<td>BCA 212</td>
<td>Intro Computer Business Appl</td>
<td>3</td>
</tr>
</tbody>
</table>

**Term 2**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SDV 153</td>
<td>Pre-Employment Strategies</td>
<td>2</td>
</tr>
<tr>
<td>ADM 162</td>
<td>Office Procedures</td>
<td>3</td>
</tr>
<tr>
<td>ADM 154</td>
<td>Business Communication</td>
<td>3</td>
</tr>
<tr>
<td>ADM 259</td>
<td>Professional Development</td>
<td>3</td>
</tr>
</tbody>
</table>
PROGRAMS AVAILABLE

In addition to the required courses in Term 2, students are required to select one of the following Emphasis Options:

**Professional Emphasis Option**
- BCA 137 Word Processing Skill Dev II  3
- ADM 265 Supervised Practical Experience  2
- ADM 937 Prof Office Careers Seminar  1

**Information Processing Emphasis Option**
- BCA 137 Word Processing Skill Development II  3
- BCA 213 Intermediate Computer Business Appl  3

**Office Management Emphasis Option**
- BCA 113 Computer Network Literacy  3
- MGT 115 Administrative Management  3

**Bookkeeping Emphasis Option**
- ACC 111 Intro to Accounting  3
- BCA 213 Intermediate Computer Business Appl  3

**Legal Emphasis Option**
- BUS 185 Business Law I  3
- ADM 208 Legal Terminology  3

**Data Entry Emphasis Option**
- ADM 138 Data Entry  3
- BCA 213 Intermediate Computer Business Appl  3

Total credits required to complete the diploma ............... 34

**Office Specialist**
(see Certificate Section, page 123)

**Optometric/Ophthalmic Technician**
An optometric/ophthalmic technician works in eye care to provide quality vision care services to patients. Technicians conduct unique eye testing procedures and implement special patient instruction. Technicians may work in optometry practices, ophthalmology practices or medical clinics, optical dispensaries, optical laboratories, medical and optical equipment businesses, lens, frame or contact lens companies, pharmaceutical companies, research laboratories or in academia.

This program is designed to prepare students with the skills necessary to assist practitioners of optometry, ophthalmology and opticianry to provide a full scope of vision care and prepare them to pass national certification exams.

Criminal background checks will be completed on each student. Criminal convictions or documented history of abuse may delay or prevent students from participating in clinical education experiences. Students unable to participate in clinical education will be unable to complete the Optometric/Ophthalmic Technician program.

**Location: Ankeny**

**Program Entry Requirements**
1. Complete an application for admission.
2. Satisfy the assessment requirement.
3. Attend any required information/registration session.
4. Obtain a minimum score of 24 in Mathematics on the COMPASS test.
5. Obtain a score of at least 35 NWPM with 5 errors or fewer on the typing/word processing skill test.
6. Completion of one year of high school Biology with a “C” or better is strongly recommended.

**Students start Fall term.**

**Graduation Requirements**
To earn an Optometric/Ophthalmic Technician diploma, a student must complete all course work as prescribed and maintain a 2.0 grade point average. A grade of 2.0 (C) or better is required in all OPT courses. To remain in the program, a student must maintain a grade of “C” or higher in each required course.

This program is designed to start in the Fall semester.

Students who desire to start other terms may be accepted, but may not graduate in three semesters due to the sequencing of the coursework. If starting other than Fall, please contact the Optometric/Ophthalmic Technician program.

**Term 1**
- MAT 772 Applied Math  3
- BIO 733 Health Science Anatomy  3
- MAP 129 Medical Terminology  1
- OPT 110 Ophthalmic Pretesting  2
- OPT 120 Basic Optical Concepts/Optics  3
- OPT 123 Ocular Anatomy and Physiology  2
- OPT 130 Ophthalmic Dispensing I  2

**Term 2—Select 1 Course from Option 1 and 1 Course from Option 2**
- OPT 132 Ophthalmic Dispensing II  2
- OPT 140 Contact Lenses  3
- OPT 112 Ophthalmic Specialty Testing  3
- OPT 803 Preclinical  1
- ENG 105 Composition I Opt 1 3
- COM 703 Communication Skills Opt 1 3
- PSY 102 Human and Work Relations Opt 2 3
- PSY 111 Introduction to Psychology Opt 2 3
- SOC 110 Introduction to Sociology Opt 2 3
- MGT 145 Human Relations in Business Opt 2 3

**Term 3—Summer**
- OPT 818 Clinical Externship  8

Total credits required to complete this program  ............ 39
Programs Available

Pharmacy Technician

A pharmacy technician is an individual who, under the supervision of a pharmacist, assists in the performance of activities of the pharmacy department not requiring the professional judgment of a pharmacist. Pharmacy technicians assist and support licensed pharmacists in providing healthcare to patients. Pharmacy technicians have been called pharmacy clinicians, pharmacy support personnel and various other titles, depending on their location. In all parts of the country, pharmacy technicians must have a broad knowledge of pharmacy practice and must be skilled in the techniques required to order, stock, package and prepare medications, but they do not need the advanced college education required of a licensed pharmacist. Pharmacy technicians may perform many of the same duties as a pharmacist; however, all of their work must be checked by a pharmacist before medication can be dispensed to a patient.

This program will prepare students for entry-level pharmacy technician positions. Medical and pharmaceutical terminology will be introduced along with pharmaceutical calculations. The basic anatomy related to the pharmacology of medications will be a major component of the coursework. This program will provide students with necessary preparatory courses for seeking certification. Certification will require a passing score on a nationally recognized certification exam such as the PTCB (Pharmacy Technician Certification Board) or ExCPT (Exam for the Certification of Pharmacy Technicians).

As a part of the Pharmacy Technician diploma, students will be required to perform two clinical rotations. Clinical rotations will include both retail experience and hospital experience. The students will choose institutions to complete this requirement. The instructor will help each student locate local facilities where they can do their clinical rotation to fulfill the requirements for the course.

Criminal background checks will be completed on each student. Criminal convictions or documented history of abuse may delay or prevent students from participating in clinical education experiences. Students unable to participate in clinical education will be unable to complete the Pharmacy Technician program.

Proof of immunizations is required of all Pharmacy Technician students. Completion of the Student Health and Immunization Record form and current certification by either the American Heart Association (CPR for the Healthcare Provider) or American Red Cross (CPR for the Professional Rescuer) are required prior to beginning clinical rotations. Proof of current flu vaccination is required of all Pharmacy Technician students by January of each year.

Location: Ankeny

Program Entry Requirements
1. Complete an application for admission.
2. Attend any required information/registration session.
3. Submit to the Admissions Office evidence of high school graduation or GED prior to enrollment.
5. Obtain COMPASS test minimum score of 42 in Writing.
6. Obtain COMPASS test minimum score of 81 in Reading.
7. Obtain a score of at least 35 NWPM with 5 errors or fewer on the typing/word processing skill test.

8. Completion of one year of high school Algebra with a “C” or better or take MAT 063 in their first semester and one year of high school Biology or Chemistry or equivalent with a “C” or better is strongly recommended.

Students start Fall term.

Graduation Requirements
To earn a Pharmacy Technician diploma, a student must complete all course work as prescribed and maintain a 2.0 grade point average. A grade of 2.0 (C) or better is required in all PHR courses. To remain in the program, a student must maintain a grade of “C” or higher in each required course.

<table>
<thead>
<tr>
<th>Term 1</th>
<th></th>
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</thead>
<tbody>
<tr>
<td>PHR 100 Pharm Technician Orientation</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>PHR 101 Pharmacy Operations I</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>PHR 123 Pharmacology I</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>BIO 733 Health Science Anatomy</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>MAP 129 Medical Terminology</td>
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<td></td>
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</table>

<table>
<thead>
<tr>
<th>Term 2</th>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td>PHR 132 Pharmaceutical Mathematics</td>
<td>3</td>
<td></td>
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<tr>
<td>PHR 102 Pharmacy Operations II</td>
<td>3</td>
<td></td>
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<tr>
<td>PHR 140 Pharmacy Law</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>PHR 801 Pharm Technician Internship I</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>PHR 124 Pharmacology II</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>PSY 102 Human and Work Relations</td>
<td>3</td>
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</table>

<table>
<thead>
<tr>
<th>Term 3—Select 1 Course from Option 1</th>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td>PHR 160 Compounding (Sterile &amp; Non-Sterile Products)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>PHR 802 Pharm Technician Internship II</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>COM 703 Communication Skills</td>
<td>Opt 1</td>
<td></td>
</tr>
<tr>
<td>ENG 105 Composition I</td>
<td>Opt 1</td>
<td></td>
</tr>
</tbody>
</table>

Total credits required to complete this program ............ 36

Photography

The Photography diploma is designed to prepare students to be employed as commercial photographers. Students gain basic knowledge in film and digital photography, photojournalism and advanced editing processes. Current industry standard software and techniques are utilized. Students also learn to communicate with customers and consider social and environmental issues in the context of their work.

Locations: Ankeny

Program Entry Requirements
1. Complete an application for admission.
2. Satisfy the assessment requirement.
3. Attend any required information/registration session.

Students start any term.
**PROGRAMS AVAILABLE**

**Gradeduation Requirements**
To earn a Photography diploma, a student must complete all required course work as prescribed and maintain a 2.0 grade point average.

**FALL START**

**Term 1–Fall**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ART 184</td>
<td>Principles of Photography</td>
<td>3</td>
</tr>
<tr>
<td>ART 186</td>
<td>Principles Digital Photography</td>
<td>3</td>
</tr>
<tr>
<td>ART 289</td>
<td>Photojournalism</td>
<td>3</td>
</tr>
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</table>

**Select 1 Course from Option 1 and 1 Course from Option 2**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPC 101</td>
<td>Fund of Oral Communication</td>
<td>Opt 1</td>
</tr>
<tr>
<td>SPC 126</td>
<td>Interpersonal &amp; Small Grp Comm</td>
<td>Opt 1</td>
</tr>
<tr>
<td>ENG 105</td>
<td>Composition I</td>
<td>Opt 1</td>
</tr>
<tr>
<td>BIO 104</td>
<td>Introductory Biology w/Lab</td>
<td>Opt 2</td>
</tr>
<tr>
<td>BIO 138</td>
<td>Field Ecology</td>
<td>Opt 2</td>
</tr>
<tr>
<td>ENV 115</td>
<td>Environmental Science</td>
<td>Opt 2</td>
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</table>

**Select 1 Course from Option 3**

<table>
<thead>
<tr>
<th>Course</th>
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<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>GEO 111</td>
<td>Introduction to Geography</td>
<td>Opt 3</td>
</tr>
<tr>
<td>HIS 153</td>
<td>U.S. History Since 1877</td>
<td>Opt 3</td>
</tr>
<tr>
<td>PSY 261</td>
<td>Human Sexuality</td>
<td>Opt 3</td>
</tr>
<tr>
<td>SOC 120</td>
<td>Marriage &amp; Family</td>
<td>Opt 3</td>
</tr>
<tr>
<td>PSY 111</td>
<td>Introduction to Psychology</td>
<td>Opt 3</td>
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</table>

**Total minimum credits required to complete this program** .............................................. 36

**SPRING START**

**Term 1–Spring**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
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<tbody>
<tr>
<td>ART 184</td>
<td>Principles of Photography</td>
<td>3</td>
</tr>
<tr>
<td>ART 186</td>
<td>Principles Digital Photography</td>
<td>3</td>
</tr>
<tr>
<td>ART 289</td>
<td>Photojournalism</td>
<td>3</td>
</tr>
</tbody>
</table>

**Select 1 Course from Option 1 and 1 Course from Option 2**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPC 101</td>
<td>Fund of Oral Communication</td>
<td>Opt 1</td>
</tr>
<tr>
<td>SPC 126</td>
<td>Interpersonal &amp; Small Grp Comm</td>
<td>Opt 1</td>
</tr>
<tr>
<td>ENG 105</td>
<td>Composition I</td>
<td>Opt 1</td>
</tr>
<tr>
<td>BIO 104</td>
<td>Introductory Biology w/Lab</td>
<td>Opt 2</td>
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<tr>
<td>BIO 138</td>
<td>Field Ecology</td>
<td>Opt 2</td>
</tr>
<tr>
<td>ENV 115</td>
<td>Environmental Science</td>
<td>Opt 2</td>
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**Select 1 Course from Option 3**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEO 111</td>
<td>Introduction to Geography</td>
<td>Opt 3</td>
</tr>
<tr>
<td>HIS 153</td>
<td>U.S. History Since 1877</td>
<td>Opt 3</td>
</tr>
<tr>
<td>PSY 261</td>
<td>Human Sexuality</td>
<td>Opt 3</td>
</tr>
<tr>
<td>SOC 120</td>
<td>Marriage &amp; Family</td>
<td>Opt 3</td>
</tr>
<tr>
<td>PSY 111</td>
<td>Introduction to Psychology</td>
<td>Opt 3</td>
</tr>
</tbody>
</table>

**Printing Technologies**
(see Certificate Section, page 123)
PROGRAMS AVAILABLE

Respiratory Therapy

The Respiratory Therapy program provides students the opportunity to learn the dynamic profession of respiratory therapy. Respiratory therapy is an allied medical specialty involved in the diagnosis, treatment and prevention of diseases and conditions that affect the respiratory and cardiovascular systems. Respiratory therapists work closely with physicians to plan, provide and evaluate direct care to persons with pulmonary and cardiovascular abnormalities.

The curriculum includes a variety of supervised clinical practicum experiences in local healthcare facilities. Graduates will acquire the knowledge, skills and attitudes needed to begin successful careers as respiratory therapists.

Graduates of the program receive an Associate of Applied Science (AAS) degree. The program is accredited by the Commission on Accreditation of Allied Health Education Programs (CAAHEP) and graduates are eligible for all credentialing examinations offered by the National Board of Respiratory Care (NBRC), as well as licensure as respiratory therapists by the Iowa Department of Public Health and all other state licensure boards for respiratory therapists.

Employment opportunities are found in hospitals, clinics, physicians’ offices, home healthcare agencies, equipment and supply sales, rehabilitation and continuing care.

Criminal background checks will be done and results shared with cooperating agencies, who may delay or deny placement for clinical/practicum courses. This will affect successful program completion.

Location: Ankeny

Selected courses in this program are offered at other campuses.

Program Entry Requirements

1. Complete an application for admission.
2. Satisfy the assessment requirement.
3. Attend any required information/registration session.
4. Meet with a Respiratory Therapy faculty advisor.
5. Submit to Admissions Office evidence of high school graduation or GED prior to enrollment.
6. Submit to Admissions Office evidence of grade “C” or above in two semesters of high school Algebra II or the equivalent (Academic Achievement Center Algebra III & IV or MAT 073 Elementary Algebra II).
7. Submit to Admissions Office evidence of grade “C” or above in two semesters of high school Chemistry or equivalent (Academic Achievement Center Chemistry I & II or CHM 122 Introduction to General Chemistry).
8. Submit to Admissions Office evidence of grade of “C” or above in BIO 733 Health Science Anatomy or BIO 164 Essentials Anatomy and Physiology or equivalent courses.

Students start Fall term.

Graduation Requirements

To earn a Respiratory Therapy AAS degree, a student must complete all course work as prescribed and maintain a 2.0 grade point average. A minimum of grade “C” is required in all RCP courses.

Term 1

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>RCP 100</td>
<td>Intro to Respiratory Care</td>
<td>3</td>
</tr>
<tr>
<td>RCP 240</td>
<td>Respiratory Therapeutics</td>
<td>4</td>
</tr>
<tr>
<td>RCP 250</td>
<td>Cardio/Pulmonary Therapeutics</td>
<td>4</td>
</tr>
<tr>
<td>CHM 122</td>
<td>Introduction to General Chemistry</td>
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Term 2—Select 1 Course from Option 1

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>RCP 360</td>
<td>Cardio/Pulmonary Renal Pathophysiology</td>
<td>5</td>
</tr>
<tr>
<td>RCP 400</td>
<td>Respiratory Therapy Pharmacology</td>
<td>3</td>
</tr>
<tr>
<td>RCP 700</td>
<td>Respiratory Therapy Practicum I</td>
<td>4</td>
</tr>
<tr>
<td>BIO 734</td>
<td>Health Science Physiology</td>
<td>Opt 1</td>
</tr>
<tr>
<td>BIO 164</td>
<td>Essentials Anatomy &amp; Physiology</td>
<td>Opt 1</td>
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Term 3—Select 1 Course from Option 2

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>RCP 601</td>
<td>Neonatal/Pediatric Respiratory Therapy</td>
<td>4</td>
</tr>
<tr>
<td>RCP 705</td>
<td>Respiratory Therapy Practicum II</td>
<td>5</td>
</tr>
<tr>
<td>ENG 105</td>
<td>Composition I</td>
<td>Opt 2</td>
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<tr>
<td>COM 703</td>
<td>Communication Skills</td>
<td>Opt 2</td>
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</table>

Term 4—Select 1 Course from Option 3

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>RCP 500</td>
<td>Advanced Respiratory Therapy</td>
<td>5</td>
</tr>
<tr>
<td>RCP 710</td>
<td>Respiratory Therapy Practicum III</td>
<td>7</td>
</tr>
<tr>
<td>BIO 732</td>
<td>Health Science Microbiology</td>
<td>Opt 3</td>
</tr>
<tr>
<td>BIO 187</td>
<td>Microbiology w/Lab</td>
<td>Opt 3</td>
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Term 5—Select 1 Course from Option 4

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>RCP 410</td>
<td>Cardio/Pulmonary Diagnostics</td>
<td>3</td>
</tr>
<tr>
<td>RCP 715</td>
<td>Respiratory Therapy Practicum IV</td>
<td>7</td>
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<tr>
<td>PSY 111</td>
<td>Intro to Psychology</td>
<td>Opt 4</td>
</tr>
<tr>
<td>PSY 102</td>
<td>Human and Work Relations</td>
<td>Opt 4</td>
</tr>
<tr>
<td>SOC 110</td>
<td>Introduction to Sociology</td>
<td>Opt 4</td>
</tr>
<tr>
<td>MGT 145</td>
<td>Human Relations in Business</td>
<td>Opt 4</td>
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Term 6

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>RCP 800</td>
<td>Respiratory Therapy Mgmt &amp; Ethics</td>
<td>3</td>
</tr>
<tr>
<td>RCP 720</td>
<td>Respiratory Therapy Practicum V</td>
<td>5</td>
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</tbody>
</table>

Total credits required to complete this program ........... 79
**Programs Available**

**Retailing**
Retail organizations are constantly recruiting individuals with training in the areas of retailing, sales, store management and customer relations. Retailing provides a dynamic and exciting work environment that rewards high performance with rapid job promotions and pay increases to match. Retailing is a growth industry with almost an endless number of career opportunities available to graduates of the program. Past graduates are now in careers that include store managers, department managers, visual merchandisers, chain store supervisors, professional sales of automotive, home improvement and computer products and owners of their own businesses.

Personal, professional and leadership development is provided through lectures, study tours, labs and speakers. Practical experience is gained through a paid internship with leading retail companies.

Students completing the Retailing program can transfer all of their credits into any of DMACC’s two-year Marketing or Management programs.

**Location: Ankeny**
Selected courses in this program are offered at other campuses.

**Program Entry Requirements**
1. Complete an application for admission.
2. Satisfy the assessment requirement.
3. Attend any required information/registration session.

**Students start any term.**

**Graduation Requirements**
To earn a Retailing diploma, a student must complete all course work as prescribed and maintain a 2.0 grade point average.

**Required Courses**
- MKT 140 Selling 3
- MKT 150 Principles of Advertising 3
- MKT 160 Principles of Retailing 3
- MKT 165 Retail Management II 3
- APP 111 Visual Merchandising & Design 3
- MGT 800 Business Internship I 6
- MGT 802 Business Internship Seminar I 2
- MGT 194 Relationship Strategies in Business 2
- MGT 147 Leadership Development 3
- SDV 153 Pre-Employment Strategies 2

**Option Courses—Select 1 Course from Each Option**
- ENG 105 Composition I Opt 1 3
- COM 703 Communication Skills Opt 1 3
- MKT 110 Principles of Marketing Opt 2 3
- MKT 120 E-Marketing Opt 2 3
- BUS 102 Intro to Business Opt 2 3
- BUS 148 Small Business Management Opt 2 3
- MGT 145 Human Relations in Business Opt 3 3
- PSY 111 Introduction to Psychology Opt 3 3
- BUS 112 Business Math Opt 4 3
- MAT 141 Finite Math Opt 4 4

**Total credits required to complete this program ............ 42**

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**Sales and Management**
The Sales and Management program offers sales and management skill development. Many opportunities exist for the highly motivated, people-oriented, goal-setting individual who wants to quickly move into a sales or management industry-sponsored training program.

Specific benefits of the program include rapid development of sales and management skills, total transferability into any of DMACC’s two-year Marketing and Management AAS degree programs and the satisfaction of gaining self-confidence as marketing skills are acquired.

Students will have the opportunity to enroll in the program for either day or evening classes at the beginning of each term. In addition, the program offers opportunities to earn as you learn through on-the-job training, opportunities to gain advanced standing with prior occupational experience (after evaluation by the program chairperson) and leadership training through involvement in the Sales and Management Club.

**Location: Ankeny**
Selected courses in this program are offered at other campuses.

**Program Entry Requirements**
1. Complete an application for admission.
2. Satisfy the assessment requirement.
3. Attend any required information/registration session.

**Students start any term.**

**Graduation Requirements**
To earn a Sales and Management diploma, a student must complete all course work as prescribed and maintain a 2.0 grade point average.

**Required Courses**
- MGT 147 Leadership Development 3
- MGT 800 Business Internship I 6
- MGT 802 Business Internship Seminar I 2
- MGT 194 Relationship Strategies in Business 2
- MKT 140 Selling 3
- MKT 141 Advanced Selling Strategies 3
- SDV 153 Pre-Employment Strategies 2

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**VISIT US ONLINE: www.DMACC.edu 105**
Programs Available

Surgical Technology
The Surgical Technology program is designed to prepare students to be employed in a hospital or surgery center. As a skilled health professional, the surgical technologist is able to circulate with a Registered Nurse and scrub independently for a variety of specialties and procedures. Students gain a basic knowledge of anatomy, physiology, microbiology, aseptic technique, surgical techniques and procedures, and patient care techniques. These subjects are presented in the classroom, through laboratory experience and in a supervised clinical setting.

Criminal background checks will be completed on each student. Criminal convictions or documented history of abuse may delay or prevent students from participation in clinical education experience. Students unable to participate in clinical education will be unable to complete the Surgical Technology program.

Location: Urban

Selected courses in this program are offered at other campuses.

Program Entry Requirements
1. Complete an application for admission.
2. Satisfy the assessment requirement.
3. Attend required Surgical Technology information session. Contact advisor for dates.
4. Submit evidence of grade “C” or better in one year of high school Biology or equivalent (DMACC Academic Achievement Center Biology I & II or BIO 156 Human Biology w/Lab).
5. One year of high school Chemistry or equivalent (DMACC Academic Achievement Center Chemistry I & II or CHM 122 Intro to General Chemistry) is recommended.
6. Submit proof of high school graduation or GED prior to enrollment.

Students start Fall term.

Graduation Requirements
To earn a Surgical Technology diploma, a student must complete all course work as prescribed in Terms 1–3 and have a “C” or better in all Surgical Technology courses and support courses.

In order to progress to the next term, these courses must be successfully completed in the term identified or in a previous term.

Term 1
SUR 130 Intro to Surgical Technology 2
BIO 733 Health Science Anatomy 3
SUR 140 Fundamentals of Surgical Tech 5
SUR 150 Med Terminology for Surg Tech 2

Select 1 Course from Each Option
MAT 772 Applied Math Opt 1 3
BUS 112 Business Math Opt 1 3
ENG 105 Composition I Opt 2 3
COM 703 Communication Skills Opt 2 3

Term 2
SUR 420 Pharmacology for the Surg Tech 2
BIO 734 Health Science Physiology 3
SUR 805 Clinical Practicum I 5
SUR 200 Surg Procedures/Techniques I 5

Select 1 Course from Option 3
MGT 145 Human Relations in Business Opt 3 3
PSY 111 Introduction to Psychology Opt 3 3
PSY 102 Human and Work Relations Opt 3 3
SOC 110 Introduction to Sociology Opt 3 3

Term 3
BIO 732 Health Science Microbiology 4
SUR 202 Surg Procedures/Techniques II 3
SUR 810 Clinical Practicum II 5

Total credits required to complete this diploma ............. 48

Telecommunications Technology
The Telecommunications Technology program begins with areas that are most familiar to the student and progresses to the new technologies that are the driving force of the information age. The program provides a blend of lecture and hands-on training courses that gradually introduce students to a variety of areas within the field of telecommunications. Graduates may pursue a career in several different areas of telecommunications including network engineering and installation and repair of network services. Careers can be found at companies ranging from local telephone companies, hospitals, financial institutions, municipalities and a variety of others.

Location: West

Selected courses in this program are offered at other campuses.
Programs Available

Program Entry Requirements
1. Complete an application for admission.
2. Attend any required information/registration session.
3. Complete required COMPASS testing, obtaining a satisfactory score in Math (40 or above) or ACT score of 19 or above.
4. Proof of high school graduation or GED completion.

Students start Fall term.

Graduation Requirements
To earn a Telecommunications Technology AAS degree, a student must complete all course work as prescribed and maintain a 2.0 grade point average.

Term 1
ELT 106 Basic Math for Electronics 3
ELT 368 DC & AC Fundamentals 3
ELT 369 DC & AC Fundamentals Lab 3
TEL 210 Telecommunications I 3
TEL 213 Introduction to Telephony Lab 3

Term 2
CSC 110 Intro to Computers 3
TEL 220 Telecommunications II 4
TEL 223 Telecom Transport Lab 3
TEL 232 Data Communications 3

Term 3
TEL 230 Advanced Topics in Telecom 4
TEL 233 Advanced Topics in Telecom Lab 3
Option 1 Course 3

Term 4
SPC 101 Fund of Oral Communication 3
TEL 240 Telecommunications Management 3
TEL 243 Internetworking Lab 3
Option 1 Course 3
Option 2 Course 3

Term 5
BUS 102 Intro to Business 3
ENG 105 Composition I 3
Option 1 Course 3
Option 1 Course 3

Option 1 Courses
Any BCA, CIS, ELT, NET or CSC course

Option 2 Courses
MGT 145 Human Relations in Business
PSY 111 Introduction to Psychology
PSY 102 Human and Work Relations
SOC 110 Introduction to Sociology

Total credits required to complete this program ................ 65

Telecommunications
(see Certificate Section, page 124)

Tool & Diemaking
The Tool & Diemaking program prepares students to meet the demands for qualified personnel in either the conventionally controlled or computer numerical controlled (CNC) tooling industry.
There are two separate diploma options available: Machinist Technology or Diemaking
1st Year: Machinist Technology graduates should have the skills required to work in a general machine shop.
2nd Year: Diemaking graduates should have the skills necessary to work as tool planners, tool makers, die makers, etc. By completing the core courses required for all students plus the courses in the two diploma options, students may receive a Tool & Diemaking AAS degree.

Location: Ankeny and Newton
Machinist Technology diploma (1st year) is available at Ankeny and Newton. Diemaking (2nd year) is available only at Ankeny.

Program Entry Requirements Machinist Technology Diploma
1. Complete an application for admission.
2. Satisfy the assessment requirement.
3. Attend any required information/registration session.

Students start Fall term.

Program Entry Requirements Diemaking Diploma
1. Complete an application for admission.
2. Satisfy the assessment requirement.
3. Attend any required information/registration session.
4. Submit proof of Machinist Technology diploma or equivalent.

Students start Fall term.

Graduation Requirements
To earn a Machinist Technology or Diemaking diploma, or a Tool & Diemaking AAS degree, a student must complete all course work as prescribed and maintain a 2.0 grade point average.

All Students Must Complete the Following AAS Degree Requirements:

Required Courses
MAT 772 Applied Math 3
MAT 773 Applied Math II 3

Select 1 Course from Each Option
COM 703 Communication Skills Opt 1 3
ENG 105 Composition I Opt 1 3
MGT 145 Human Relations in Business Opt 2 3
PSY 111 Introduction to Psychology Opt 2 3
PSY 102 Human and Work Relations Opt 2 3
SOC 110 Introduction to Sociology Opt 2 3

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PROGRAMS AVAILABLE

Machinist Technology Diploma

Students Who Choose the Machinist Technology Diploma Option Must Complete the Following Courses:

Term 1
MFG 276 Hand & Bench Machine Tools 1
MFG 121 Machine Trade Printreading I 2
MFG 105 Machine Shop Measuring 3
MFG 250 Engine Lathe Theory 1
MFG 251 Engine Lathe Operations Lab 2
MFG 260 Mill Operations Theory 1
MFG 261 Milling Operations Lab 2

Term 2
MFG 252 Engine Lathe Theory II 2
MFG 273 Mill Operations II 2
MFG 274 Mill Operations Lab II 3
MFG 132 Machine Trade Printreading II 3
MFG 290 Heat Treatments 1

Term 3–Select Both Courses in Option 3 or Option 4*
MFG 270 Grinders Theory Opt 3 1
MFG 271 Grinders Lab Opt 3 3
MFG 932* Internship Opt 4 4
MFG 350 CNC Lathe Operations Theory 1
MFG 351 CNC Lathe Operations Lab 2
MFG 330 CNC Mill Operations Theory 1
MFG 331 CNC Mill Operations Lab 2

Plus AAS degree Requirements (from above) 12

Total credits required to complete the Machinist Technology diploma ............................................ 48

Diemaking Diploma

Students must complete the Machinist Technology diploma or equivalent prior to enrolling in the Diemaking diploma.

Students Who Choose the Diemaking Diploma Option Must Complete the Following Courses:

Term 4
CAD 119 Intro to Computer-Aided Drafting 3
CAD 139 Intro to CAD/CAM 3
MFG 402 Basic Diemaking Theory 4
MFG 403 Basic Diemaking Lab 6

Term 5
MFG 411 Progressive Die Design 3
MFG 412 Advanced Diemaking Theory 4
MFG 413 Advanced Diemaking Lab 6
MFG 381 EDM Fundamentals 3

*NOTE: MFG 932 (Option 4) does not count toward the Tool & Diemaking AAS degree Requirements. Students pursuing the AAS degree are required to take MFG 270 & 271 (Option 3).

Total credits required to complete the Machinist Technology diploma ............................................ 48

Tool & Diemaking AAS degree

To Earn the Tool & Diemaking AAS degree, students must complete the AAS degree Requirements 12

Plus the Requirements for Both Diplomas 72

Total credits required to complete the Tool & Diemaking AAS degree .................................. 84

Turf Maintenance

(see Certificate Section, page 125)

Veterinary Medicine

Students planning to major in pre-veterinary medicine or go to school to become a veterinarian after receiving the bachelor’s degree at a four-year college/university can satisfy many of their general education requirements at Des Moines Area Community College. Since degree requirements vary at senior institutions, students should become familiar with the specific course requirements of their selected transfer institution. Students are also encouraged to contact the four-year major advisor as early as possible to develop a transfer plan. DMACC advisors and/or counselors can also help by providing transfer materials and course planning assistance.

Veterinary Technology

Veterinary technicians provide professional technical support to veterinarians, biomedical researchers and other scientists. As a veterinary technician, you will care for hospitalized animal patients; assist the doctor in surgery; perform physical exams, lab work and technical procedures (blood draws, IV placement); take health histories and X-rays; give and monitor anesthesia; provide client education; and perform reception duties. There will be opportunities to work with a variety of animals including dogs, cats, horses, cows, pigs, sheep, birds, lizards, snakes, turtles, amphibians, guinea pigs, hamsters, rabbits, ferrets, mice and rats. Most Veterinary Technology graduates find work in small, mixed or large animal practices. Other opportunities exist in humane societies, animal shelters, zoos, specialty veterinary practices, pet shops, biological research labs, animal control agencies, veterinary teaching hospitals, and state and federal agencies.

An Associate of Applied Science (AAS) degree will be awarded to those students who successfully complete the Veterinary Technology curriculum. This program is accredited. Students who have successfully completed the program will have the opportunity to sit for the Veterinary Technician National Examination (RVT) and the state qualifying exam.

Location: Ankeny

Program Entry Requirements
1. Complete an application for admission.
2. Satisfy the assessment requirement.
3. Attend any required information/registration session.

4. COMPASS Exam: DMACC requires assessment of all new full-time students (12 credit hours or more Fall and Spring semesters, 8 credit hours or more Summer semester). This assessment provides information about students’ academic skills in Reading, Writing and Mathematics. Assessment information is then used in course selection and schedule planning.

   ACT scores or transferred composition coursework from another institution may be submitted in lieu of the COMPASS placement exam.

   If you choose this route, make sure an original transcript is sent from your previous institution to the Admissions Office at Des Moines Area Community College.

5. Students will be expected to have developed word processing skills or may be required to enroll in a keyboarding course prior to taking the Veterinary Office Procedures course.

6. Biology Competency Exam: All applicants must take this exam and receive a minimum score of 25 out of 50 on the exam to qualify for a seat in the starting Fall class. This score does not guarantee that a seat is available to you. Your biology score and the application date as processed by the College Admissions Office will determine the 30 students who will receive an invitation for the program interview, orientation and registration.

   At the time the College formally processes your admission application, you will receive additional information regarding all required assessments for this program.

7. Program Conferences: Applicants as determined by biology scores and admission dates will be invited to a program conference with the Veterinary Technology program chair or the chairperson of the Agriculture and Natural Resources Department.

Students start Fall term.

Graduation Requirements

To earn a Veterinary Technology AAS degree, a student must complete all course work as prescribed and maintain a 2.0 grade point average.

<table>
<thead>
<tr>
<th>Term 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>AGV 120</td>
</tr>
<tr>
<td>AGV 124</td>
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<tr>
<td>AGV 129</td>
</tr>
<tr>
<td>AGV 133</td>
</tr>
<tr>
<td>AGS 245</td>
</tr>
<tr>
<td>BIO 733</td>
</tr>
</tbody>
</table>

Select 1 Course from Option 1

<table>
<thead>
<tr>
<th>Course</th>
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</thead>
<tbody>
<tr>
<td>BIO 156</td>
</tr>
<tr>
<td>BIO 112</td>
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</table>

Term 2

<table>
<thead>
<tr>
<th>Course</th>
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</thead>
<tbody>
<tr>
<td>AGV 134</td>
</tr>
<tr>
<td>AGV 139</td>
</tr>
<tr>
<td>SPC 101</td>
</tr>
<tr>
<td>AGV 166</td>
</tr>
</tbody>
</table>

Select 1 Course from Option 2 and 1 Course from Option 3

<table>
<thead>
<tr>
<th>Course</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHM 105</td>
</tr>
<tr>
<td>CHM 122</td>
</tr>
<tr>
<td>Any AAS degree Requirement MAT course Opt 3 3–5</td>
</tr>
<tr>
<td>MAT 772</td>
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</table>

Term 3

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>AGV 932</td>
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</table>

Select 1 Course from Option 4

<table>
<thead>
<tr>
<th>Course</th>
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</thead>
<tbody>
<tr>
<td>BIO 732</td>
</tr>
<tr>
<td>BIO 187</td>
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</tbody>
</table>

Term 4

<table>
<thead>
<tr>
<th>Course</th>
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</thead>
<tbody>
<tr>
<td>AGV 266</td>
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<tr>
<td>AGV 141</td>
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<tr>
<td>AGV 164</td>
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<tr>
<td>AGV 172</td>
</tr>
<tr>
<td>AGV 180</td>
</tr>
<tr>
<td>ECN 130</td>
</tr>
</tbody>
</table>

Select 1 Course from Option 5

<table>
<thead>
<tr>
<th>Course</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG 105</td>
</tr>
<tr>
<td>COM 703</td>
</tr>
</tbody>
</table>

Total minimum credits required to complete this program.................................................. 68

Viticulture

(see Certificate Section, page 119)

Welding

Welding is a joining process that produces coalescence of materials by heating them to the welding temperature, with or without the application of pressure or by the application of pressure along, and with or without the use of filler metal. It is used to make welds. A weld is a localized coalescence of metals or nonmetals produced either by heating materials to the welding temperature, with or without the application of pressure, or by the application of pressure along with or without the use of filler material. Coalescence refers to the growing together or growth into one body of the materials being welded.

Ferrous and nonferrous metals are joined using the oxy-acetylene, shielded metal arc, gas tungsten arc and gas metal arc welding processes. Freehand and machine flame cutting are also taught.

Classroom theory, blueprint reading and technical math are part of the instructional program. The listed sequence of course offerings may be altered. The Welding program offers open-entry and open-exit courses. Students will be allowed to enroll in these open-entry/open-exit courses as long as there is space available.

Location: Ankeny
PROGRAMS AVAILABLE

Program Entry Requirements
1. Complete an application for admission.
2. Satisfy the assessment requirement.
3. Attend any required information/registration session.
4. Students must meet with the program chair before admission to the program can be confirmed.

Students start any term.

Graduation Requirements
To earn a Welding diploma, a student must complete all course work as prescribed and maintain a 2.0 grade point average.

Required Courses
<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>COM 703</td>
<td>Communication Skills</td>
<td>3</td>
</tr>
<tr>
<td>MAT 772</td>
<td>Applied Math</td>
<td>3</td>
</tr>
<tr>
<td>WEL 111</td>
<td>Welding Blueprint Reading</td>
<td>3</td>
</tr>
<tr>
<td>WEL 120</td>
<td>Oxy-Fuel Welding/Cutting</td>
<td>2</td>
</tr>
<tr>
<td>WEL 150</td>
<td>Arc Welding I (SMAW)</td>
<td>2</td>
</tr>
<tr>
<td>WEL 165</td>
<td>Arc Welding II (SMAW)</td>
<td>3</td>
</tr>
<tr>
<td>WEL 166</td>
<td>Arc Welding III (SMAW)</td>
<td>2</td>
</tr>
<tr>
<td>WEL 167</td>
<td>Arc Welding IV (SMAW)</td>
<td>3</td>
</tr>
<tr>
<td>WEL 168</td>
<td>Arc Welding V (SMAW)</td>
<td>3</td>
</tr>
<tr>
<td>WEL 169</td>
<td>Arc Welding VI (SMAW)</td>
<td>2</td>
</tr>
<tr>
<td>WEL 181</td>
<td>Gas Metal Arc Welding</td>
<td>2</td>
</tr>
<tr>
<td>WEL 190</td>
<td>Gas Tungsten Arc Welding</td>
<td>2</td>
</tr>
</tbody>
</table>

Total credits required to complete this program .......... 30

Welding Certificates available: Blueprint Reading, Oxy-acetylene, Shielded Metal Arc, Gas Metal Arc, Gas Tungsten Arc, Structural Welding, and Pipe Welding (see Certificate Section, page 125).

Woodworking
(For more information, see Architectural Millwork, page 58)
PROGRAMS AVAILABLE

Certificates of Specialization

**Accounting Certificate I**

The Accounting Certificate I prepares the student for an entry-level position in the field of accounting. Upon completion, the successful candidate will be able to distinguish, analyze, summarize, communicate and record business transactions.

Employment opportunities are currently found in commercial businesses, government offices, public accounting firms and similar enterprises.

**Required Courses**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUS 112</td>
<td>Business Math</td>
<td>3</td>
</tr>
<tr>
<td>CSC 110</td>
<td>Intro to Computers</td>
<td>3</td>
</tr>
<tr>
<td>ADM 138</td>
<td>Data Entry</td>
<td>3</td>
</tr>
</tbody>
</table>

**Option Courses—Select 1 Course from Each Option**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACC 131</td>
<td>Principles of Accounting I</td>
<td>4 Opt</td>
</tr>
<tr>
<td>ACC 111</td>
<td>Intro to Accounting</td>
<td>3 Opt</td>
</tr>
<tr>
<td>ENG 105</td>
<td>Composition I</td>
<td>3 Opt</td>
</tr>
<tr>
<td>COM 703</td>
<td>Communication Skills</td>
<td>2 Opt</td>
</tr>
<tr>
<td>ADM 157</td>
<td>Business English</td>
<td>2 Opt</td>
</tr>
<tr>
<td>MGT 145</td>
<td>Human Relations in Business</td>
<td>2 Opt</td>
</tr>
<tr>
<td>SPC 101</td>
<td>Fundamentals of Oral Communication</td>
<td>2 Opt</td>
</tr>
<tr>
<td>SPC 126</td>
<td>Interpersonal &amp; Small Group Comm</td>
<td>2 Opt</td>
</tr>
<tr>
<td>SDV 153</td>
<td>Pre-Employment Strategies</td>
<td>2 Opt</td>
</tr>
<tr>
<td>ACC 124</td>
<td>Accounting Professionality</td>
<td>3 Opt</td>
</tr>
</tbody>
</table>

**Total minimum credits required to complete this certificate** ................................................... **17**

These credits are applicable to the AAS degree in Accounting Specialist. The majority of these credits are also applicable to the AS degree in Accounting Paraprofessional and the Accounting & Bookkeeping diploma.

**Accounting Certificate II**

The Accounting Certificate II prepares the student for an entry-level position in the field of Accounting & Bookkeeping. Upon completion, the successful candidate will be able to distinguish, analyze, summarize, communicate and record business transactions.

Employment opportunities are currently found in commercial businesses, government offices and public accounting firms.

**Program Entry Requirements**

- Completion of Accounting Certificate I

**Required Courses**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACC 261</td>
<td>Income Tax Accounting</td>
<td>3</td>
</tr>
<tr>
<td>ACC 161</td>
<td>Payroll Accounting</td>
<td>3</td>
</tr>
</tbody>
</table>

**Option Courses—Select 1 Course from Each Option**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACC 131</td>
<td>Principles of Accounting I</td>
<td>4 Opt</td>
</tr>
<tr>
<td>ACC 132</td>
<td>Principles of Accounting II</td>
<td>4 Opt</td>
</tr>
<tr>
<td>BCA 164</td>
<td>Basic Databases</td>
<td>1 Opt</td>
</tr>
</tbody>
</table>

**Total credits required to complete this certificate** ............ **14**

These credits are applicable to the AAS degree in Accounting Specialist. The majority of these credits are also applicable to the AS degree in Accounting Paraprofessional and the Accounting & Bookkeeping diploma.

**Adult Services**

Students in the Adult Services Specialist certificate program have the opportunity to increase their knowledge of the older adult and the agencies that provide services for this expanding population. No prior degree is required to enroll in this program.

**IMPORTANT NOTE:** Students are strongly advised to contact one of the staff members of Aging Services Management in Bldg. 24, Room 208A on the Ankeny Campus or call 515-964-6262 or 515-964-6814 for additional important information.

If you plan to work in a residential care facility, it is recommended that you also take the following courses: SOC 110 Introduction to Sociology and PSY 111 Introduction to Psychology.

**Required Courses**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASM 278</td>
<td>Management in Senior Care Services</td>
<td>3</td>
</tr>
<tr>
<td>ASM 279</td>
<td>Healthcare Human Resources</td>
<td>3</td>
</tr>
<tr>
<td>ASM 280</td>
<td>Healthcare Delivery Systems</td>
<td>2</td>
</tr>
<tr>
<td>ASM 282</td>
<td>Aging Services</td>
<td>2</td>
</tr>
<tr>
<td>ASM 283</td>
<td>Aging Policies and Government Programs</td>
<td>2</td>
</tr>
<tr>
<td>SOC 225</td>
<td>Social Gerontology/Applications</td>
<td>4</td>
</tr>
<tr>
<td>SOC 226</td>
<td>Issues in Aging</td>
<td>2</td>
</tr>
<tr>
<td>ASM 257</td>
<td>ASM Capstone</td>
<td>2</td>
</tr>
<tr>
<td>ASM 256</td>
<td>Agency Experience</td>
<td>2</td>
</tr>
<tr>
<td>ASM 239</td>
<td>Information Systems in Healthcare</td>
<td>2</td>
</tr>
<tr>
<td>ASM 274</td>
<td>Law and Ethics in Healthcare</td>
<td>3</td>
</tr>
</tbody>
</table>

**Option Courses—Select 1 Course from Option 1**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>ACC 111</td>
<td>Intro to Accounting</td>
<td>3 Opt</td>
</tr>
<tr>
<td>ACC 131</td>
<td>Principles of Accounting I</td>
<td>4 Opt</td>
</tr>
</tbody>
</table>

**Total credits required to complete this certificate** ............ **30**

These credits are applicable to the AS degree in Aging Services Management.

Certificates of Specialization

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BCA 212</td>
<td>Intro Computer Business Appl</td>
<td>3 Opt</td>
</tr>
<tr>
<td>ACC 191</td>
<td>Financial Analysis</td>
<td>3 Opt</td>
</tr>
<tr>
<td>ACC 251</td>
<td>Gov’t &amp; Nonprofit Accounting</td>
<td>3 Opt</td>
</tr>
<tr>
<td>ACC 193</td>
<td>Accounting Procedures/Mgmt.</td>
<td>3 Opt</td>
</tr>
<tr>
<td>BCA 213</td>
<td>Intermediate Computer Business Appl</td>
<td>3 Opt</td>
</tr>
</tbody>
</table>

**Total credits required to complete this certificate** ............ **17**

These credits are applicable to the AAS degree in Accounting Specialist. The majority of these credits are also applicable to the AS degree in Accounting Paraprofessional and the Accounting & Bookkeeping diploma.

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>ACC 261</td>
<td>Income Tax Accounting</td>
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</table>

**Option Courses—Select 1 Course from Each Option**

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<td>Principles of Accounting II</td>
<td>4 Opt</td>
</tr>
<tr>
<td>BCA 164</td>
<td>Basic Databases</td>
<td>1 Opt</td>
</tr>
</tbody>
</table>
Agribusiness–Agronomy
The Agronomy certificate prepares the student for an entry-level position in the agronomic field. Upon completion, the successful candidate will be able to formulate fertilizers and identify weeds, insects and soil nutrient deficiencies. Marketing skills will be enhanced through the application of enterprise analysis and current commodity management tools.

The course work within this certificate will serve as a strong preparatory base for the “Certified Crop Advisor” (CCA) program.

**Required Courses**
- AGA 381 Crop Scouting  3
- AGA 114 Principles of Agronomy  3
- AGA 157 Soil Fertility  1
- AGB 235 Intro to Agricultural Markets  3
- AGP 333 Precision Agriculture Applications  3
- AGA 154 Fundamentals of Soil Science  3
- AGA 211 Grain and Forage Crops  3

**Option Courses–Select 1 Course from Option 1**
- AGA 284 Pesticide Application Certification Opt 1  3
- AGB 802 Agribusiness Internship I Opt 1  2
- AGA 222 Grain Management Opt 1  2

**Total credits required to complete this certificate......... 21**
These credits are applicable to the AAS degree in Agribusiness.

Agribusiness–Animal Science
The Animal Science certificate prepares the student for an entry-level position in the livestock industry. Upon completion, the successful candidate will be able to formulate livestock rations, identify common diseases and select appropriate facilities for livestock handling. Marketing skills will be enhanced through the application of enterprise analysis and current commodity management tools.

**Required Courses**
- AGS 319 Animal Nutrition  3
- AGS 323 Animal Nutrition II  3
- AGS 113 Survey of the Animal Industry  3
- AGS 242 Animal Health  3
- AGB 235 Intro to Agricultural Markets  3
- AGB 802 Agribusiness Internship I  2

**Option Courses–Select 1 Course from Option 1**
- AGS 225 Swine Science Opt 1  3
- AGS 226 Beef Cattle Science Opt 1  3

**Total credits required to complete this certificate......... 20**
These credits are applicable to the AAS degree in Agribusiness.

Agribusiness–Farm Management
The Farm Management certificate prepares the student for an entry-level position in farm management. Upon completion, the successful candidate will be able to operate an entrepreneurial enterprise in the crop or livestock industry. Marketing skills will be enhanced through the application of enterprise analysis and current commodity management tools.

**Required Courses**
- AGA 381 Crop Scouting  3
- AGS 113 Survey of the Animal Industry  3
- AGA 114 Principles of Agronomy  3
- AGB 235 Intro to Agricultural Markets  3
- AGB 330 Farm Business Management  3
- AGB 101 Agricultural Economics  3

**Option Courses–Select 1 Course from Option 1**
- ACC 111 Intro to Accounting Opt 1  3
- AGB 802 Agribusiness Internship I Opt 1  2
- BUS 185 Business Law I Opt 1  3
- CSC 110 Introduction to Computers Opt 1  3

**Total credits required to complete this certificate......... 20**
These credits are applicable to the AAS degree in Agribusiness.

Agribusiness–Sales and Service
The Sales/Service certificate prepares the student for an entry-level position in the agricultural sales and service industry. Upon completion, the successful candidate will be able to utilize a general knowledge of the industry to more effectively serve the customers within the sales and service sector. Marketing skills will be enhanced through the application of enterprise analysis and management tools.

**Required Courses**
- AGS 113 Survey of the Animal Industry  3
- AGA 114 Principles of Agronomy  3
- AGB 235 Intro to Agricultural Markets  3
- AGB 331 Agribusiness Management  3
- AGB 101 Agricultural Economics  3
- MKT 140 Selling  3

**Option Courses–Select 1 Course from Option 1**
- AGB 802 Agribusiness Internship I Opt 1  2
- BUS 185 Business Law I Opt 1  3
- CSC 110 Introduction to Computers Opt 1  3
- MGT 145 Human Relations in Business Opt 1  3
- PSY 111 Intro to Psychology Opt 1  3
- SOC 110 Introduction to Sociology Opt 1  3

**Total credits required to complete this certificate......... 20**
These credits are applicable to the AAS degree in Agribusiness.
Programs Available

Airbrush Art
The purpose of the Airbrush Art certificate is to provide design theory and practice in the techniques of airbrush regardless of the specialized application. Airbrush is used in practically every phase of the graphic design field—in illustration, such as figure, mechanical, advertising, architectural and technical illustration; and in design, such as textile, plastic products, greeting cards and posters.

**Required Courses**
- GRD 449 Airbrush I  4
- GRD 451 Airbrush II  4

**Total credits required to complete this certificate**...........8

Biomass Operations Technology
The Biomass Operations Technology certificate is designed to train individuals to become operators in a biomass production facility. At the completion of the program, the students should be able to understand the basic operation of a biomass plant, as well as the chemical flow, instrumentation, environmental and safety issues, lab sampling techniques and other complex plant operations.

**Locations: Ankeny, Carroll, Newton**

**Required Courses**
- BPT 102 Intro to Biomass Process Tech  2
- BPT 111 Biomass Equipment and Systems  3
- BPT 112 Biomass Tech Health/Safety  3
- BPT 125 Piping and Instrument Diagrams  2
- BPT 128 Operator Biomass Lab Process  3
- RRO 101 Railcar Safety  2
- BMA 167 Steam Plant Operations  2

**Total credits required to complete this certificate**...........17

These credits are applicable to the AAS degree in Industrial Electro-Mechanical Technology.

Building Maintenance
The Building Maintenance certificate is a series of job-related courses that provide a person with an understanding of how to keep a commercial or industrial type of building operating efficiently and effectively. Skill training enables a maintenance specialist to do the job from the first day of employment.

**Required Courses**
- BMA 165 Boiler Room Maintenance  1
- ELT 305 Principles of Electricity  3

**Option Courses—Select 3 Credits from Option 1**
- BMA 167 Steam Plant Operations  Opt 1  2
- BMA 175 Basic Plumbing  Opt 1  2
- HSC 102 Emergency Care  Opt 1  1

**Total credits required to complete this certificate**...........7

Chemical Dependency Counseling
This certificate is designed for individuals with a Graduate, Bachelor's, Associate in Arts, Associate in Science or Associate in General Studies degree who wish to update or develop skills in chemical dependency counseling. Students must participate in a chemical dependency practicum. Students can contact the program chair of the Human Services program for possible practicum site options, or information is also available on the DMACC website. Practicums may have additional costs to the student.

**Entry Requirements**
1. Complete an application for admission.
2. Satisfy the assessment requirement.
3. Attend a chemical dependency certificate informational meeting that is offered in the Fall and Spring or view a recording of the meeting online. Contact the Human Services program chair once this step has been completed.

**Required Courses**
- ENG 105 Composition I  3
- HSV 220 Intro to Counseling Theories  3
- HSV 130 Interviewing/Interpersonal Relations  3
- HSV 286 Intervention Theories/Practice I  3
- HSV 288 Intervention Theories/Prac II  3
- HSV 802 Internship  3
- HSV 811 Practicum: Chemical Dependency Counsel I  3
- HSV 812 Practicum: Chemical Dependency Counsel II  3
- HSV 255 Addictive Disease Concepts  3

**Option Courses—Select 1 Course from Each Option**
- BIO 156 Human Biology w/Lab Opt 1  3
- PSY 121 Developmental Psychology Opt 1  3
- PSY 241 Abnormal Psychology Opt 1  3
- SOC 115 Social Problems Opt 2  3
- SPC 101 Fundamentals of Oral Communication Opt 2  3

**Total credits required to complete this certificate**...........33

These credits are applicable to the AS degree in Human Services.

Computer Applications
The Computer Applications certificate provides students with a basic understanding of the computer applications that may be performed in an office. A student will be able to use the following applications: word processing, data base, desktop publishing, graphics, presentation, spreadsheet, e-mail, internet and operating systems.

**Required Courses**
- BCA 133 Word Processing Skill Dev I  4
- BCA 137 Word Processing Skill Dev II  3
- BCA 212 Intro Computer Business Applications  3
- BCA 213 Intermediate Computer Business Applications  3
- BCA 113 Computer Network Literacy  3

**Total credits required to complete this certificate**...........16

These credits are applicable to the diploma in Office Assistant and the AAS degree in Administrative Assistant.
PROGRAMS AVAILABLE

Certificates of Specialization

Computer Languages
The purpose of the Computer Languages certificate is to provide the student who is presently employed in computer operations or who has strong business computer applications experience in word processing, spreadsheets and databases with the knowledge of how to design, write and execute computer programs to solve specific business problems.

Required Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CIS 402</td>
<td>COBOL</td>
<td>3</td>
</tr>
<tr>
<td>CIS 505</td>
<td>Structured Systems Analysis</td>
<td>4</td>
</tr>
<tr>
<td>CIS 604</td>
<td>Visual Basic</td>
<td>3</td>
</tr>
<tr>
<td>CIS 171</td>
<td>Java</td>
<td>3</td>
</tr>
<tr>
<td>CIS 161</td>
<td>C++</td>
<td>3</td>
</tr>
</tbody>
</table>

Option Courses—Select a Minimum of 6 Credits from Option 1 and a Minimum of 6 Credits from Option 2

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CIS 612</td>
<td>Advanced Visual BASIC</td>
<td>Opt 1</td>
</tr>
<tr>
<td>CIS 182</td>
<td>JSP and Servlets</td>
<td>Opt 1</td>
</tr>
<tr>
<td>CIS 413</td>
<td>COBOL II</td>
<td>Opt 1</td>
</tr>
<tr>
<td>CIS 164</td>
<td>Advanced C++</td>
<td>Opt 1</td>
</tr>
<tr>
<td>CIS 303</td>
<td>Introduction to Data Base</td>
<td>Opt 2</td>
</tr>
<tr>
<td>CIS 332</td>
<td>Data Base and SQL</td>
<td>Opt 2</td>
</tr>
<tr>
<td>CIS 338</td>
<td>SQL/Oracle</td>
<td>Opt 2</td>
</tr>
<tr>
<td>CIS 346</td>
<td>Data Base Design</td>
<td>Opt 2</td>
</tr>
</tbody>
</table>

Total credits required to complete this certificate: 28

Data Entry I
The purpose of the Data Entry I certificate is to provide classroom and simulated office experience in preparation for entry-level employment for data entry operators.

Graduates of the Data Entry I program locate employment in public and private organizations and agencies of all sizes and missions. Beyond entry-level positions as operators, one may advance to department supervisor.

Required Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SDV 153</td>
<td>Pre-Employment Strategies</td>
<td>2</td>
</tr>
<tr>
<td>MGT 145</td>
<td>Human Relations in Business</td>
<td>3</td>
</tr>
<tr>
<td>ADM 138</td>
<td>Data Entry</td>
<td>3</td>
</tr>
</tbody>
</table>

Total credits required to complete this certificate: 8

Corel Painter
This certificate is aimed at designers, photographers and artists who wish to go beyond the “computer software-generated look” and produce digital illustrations that simulate the appearance and behavior of traditional media. Beginning fundamental drawing skills using traditional media are combined with using a pressure-sensitive graphics tablet and Corel Painter software.

Required Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GRD 410</td>
<td>Illustration I</td>
<td>3</td>
</tr>
<tr>
<td>GRD 414</td>
<td>Illustration II</td>
<td>3</td>
</tr>
</tbody>
</table>

Total credits required to complete this certificate: 6

Database Specialist
The purpose of the Database Specialist certificate is to add to the specialization of study at DMACC. This certificate can also assist the student to prepare for Oracle certification as an Oracle Application Developer, which is desirable for positions in the database area.

Required Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSC 110</td>
<td>Intro to Computers</td>
<td>3</td>
</tr>
<tr>
<td>CIS 125</td>
<td>Intro to Programming Logic w/Lang</td>
<td>3</td>
</tr>
<tr>
<td>CIS 402</td>
<td>COBOL</td>
<td>3</td>
</tr>
<tr>
<td>CIS 303</td>
<td>Introduction to Data Base</td>
<td>3</td>
</tr>
<tr>
<td>CIS 332</td>
<td>Data Base and SQL</td>
<td>3</td>
</tr>
<tr>
<td>CIS 338</td>
<td>SQL/Oracle</td>
<td>3</td>
</tr>
</tbody>
</table>

Option Courses—Select 1 Course from Option 1

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CIS 346</td>
<td>Data Base Design</td>
<td>Opt 1</td>
</tr>
<tr>
<td>NET 715</td>
<td>Database Security &amp; Auditing</td>
<td>Opt 1</td>
</tr>
</tbody>
</table>

Total credits required to complete this certificate: 21

Dietary Manager
The Dietary Manager is responsible for the management of food operations in a dietary department. This includes the management of food service personnel, food/kitchen supplies and the routine nutritional aspects of food service. Working with a consultant dietitian, the dietary manager assists in providing quality nutritional care services in food service departments, hospitals, assisted living and healthcare facilities.

Background checks for criminal history will be done by employers in the healthcare field. A criminal history may affect successful program completion.

The Dietary Manager program is approved by the Dietary Managers Association. Graduates are eligible to take the CDM, CFPP national certification examination.

Required Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>DTM 350</td>
<td>Health Field</td>
<td>1</td>
</tr>
<tr>
<td>DTM 351</td>
<td>Food Preparation</td>
<td>1</td>
</tr>
<tr>
<td>DTM 352</td>
<td>Sanitation/Meal Service</td>
<td>2</td>
</tr>
</tbody>
</table>
Digital Forensic Investigation

The purpose of the Digital Forensic Investigation certificate is to provide a course of study for students to concentrate in the areas of digital forensics and data recovery from electronic devices. This certificate is best suited for people who have a background in criminal justice or technology including programming, digital electronics or computer hardware.

Entry Requirements
1. Complete an application for admission.
2. Successful completion of CSC 110 Intro to Computers or equivalent, or approval of the program counselor.

Required Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>NET 123</td>
<td>Computer Hardware Basics</td>
<td>4</td>
</tr>
<tr>
<td>NET 213</td>
<td>Cisco Networking</td>
<td>4</td>
</tr>
<tr>
<td>CRJ 167</td>
<td>Operating Sys. for Forensics</td>
<td>3</td>
</tr>
<tr>
<td>CRJ 176</td>
<td>Computer Forensics I</td>
<td>3</td>
</tr>
<tr>
<td>CRJ 178</td>
<td>E-Crime Investigative Methods</td>
<td>3</td>
</tr>
<tr>
<td>CRJ 276</td>
<td>Computer Forensics II</td>
<td>3</td>
</tr>
<tr>
<td>CRJ 277</td>
<td>Adv. Digital Forensic Methods</td>
<td>4</td>
</tr>
</tbody>
</table>

Total credits required to complete this certificate........... 24

Early Childhood Education

The Early Childhood Education certificate prepares the student for an entry-level position in a child care program. Upon completion, the successful candidate will be able to practice appropriate guidance techniques, recognize and carry out appropriate activities for young children and maintain a healthy and safe setting. This program meets the requirements for clock hours of formal child care education required for the Child Development Associate (CDA) credential.

DHS criminal history record checks will be completed on each student. Criminal convictions or documented history of abuse will prevent students from participating in the required lab experience. Students unable to complete these classes will not receive a certificate in Early Childhood Education.

Required Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECE 103</td>
<td>Intro to Early Childhood Ed</td>
<td>3</td>
</tr>
<tr>
<td>ECE 133</td>
<td>Child Health, Safety &amp; Nutrition</td>
<td>3</td>
</tr>
<tr>
<td>ECE 243</td>
<td>Early Childhood Guidance</td>
<td>3</td>
</tr>
<tr>
<td>ECE 343</td>
<td>Early Childhood Guidance Lab</td>
<td>1</td>
</tr>
</tbody>
</table>

Option Courses–Select 1 Course from Option 1

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECE 158</td>
<td>Early Childhood Curriculum I</td>
<td>3</td>
</tr>
<tr>
<td>ECE 221</td>
<td>Infant/Toddler Care and Educ.</td>
<td>3</td>
</tr>
</tbody>
</table>

Total credits required to complete this certificate........... 13

These credits are applicable to the diploma in Early Childhood Education, as well as the AS degree in Early Childhood Education.

Digital Publishing

The Digital Publishing certificate is designed for individuals with prior printing and/or design experience who are looking to update or expand their skills. The courses in this certificate are designed to provide current technical information in the areas of digital imaging, layout and design and web design, using the Adobe software applications.

Required Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GRT 416</td>
<td>Digital Publishing II</td>
<td>3</td>
</tr>
<tr>
<td>BCA 212</td>
<td>Intro to Computer Business Appl</td>
<td>3</td>
</tr>
<tr>
<td>GRT 415</td>
<td>Digital Imaging I</td>
<td>4</td>
</tr>
<tr>
<td>GRT 424</td>
<td>Digital Imaging II</td>
<td>4</td>
</tr>
<tr>
<td>GRT 426</td>
<td>Digital Publishing III</td>
<td>4</td>
</tr>
</tbody>
</table>

Total credits required to complete this certificate........... 21

E-Commerce Design

This certificate allows students to combine computer-oriented graphic skills with E-Commerce concepts and web page development skills. The student will be able to design and develop web pages for E-Commerce applications. This includes the ability to create, enhance and manipulate a variety of graphic elements to take advantage of delivery using the Internet. Students will have exposure to a variety of web development tools and graphic application tools including Dreamweaver, Photoshop, Fireworks and Flash.

Required Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUS 150</td>
<td>E-Commerce on the Web</td>
<td>3</td>
</tr>
<tr>
<td>CIS 207</td>
<td>Fund of Web Programming</td>
<td>3</td>
</tr>
<tr>
<td>CIS 240</td>
<td>E-Commerce Website II</td>
<td>3</td>
</tr>
<tr>
<td>GRD 403</td>
<td>Communication Design I</td>
<td>3</td>
</tr>
<tr>
<td>GRD 462</td>
<td>Computer Graphics II</td>
<td>3</td>
</tr>
<tr>
<td>GRD 463</td>
<td>Electronic Photo Editing</td>
<td>3</td>
</tr>
<tr>
<td>GRD 301</td>
<td>Intro to Desktop Publishing</td>
<td>3</td>
</tr>
</tbody>
</table>

Total credits required to complete this certificate........... 21

Option Courses–Select 1 Course from Option 1

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CIS 207</td>
<td>Fundamentals of Web Programming</td>
<td>3</td>
</tr>
<tr>
<td>GRD 470</td>
<td>Interactive Media I</td>
<td>3</td>
</tr>
</tbody>
</table>

Total credits required to complete this certificate........... 21
PROGRAMS AVAILABLE

Emergency Medical Technician–Basic

The Emergency Medical Technician–Basic certificate is designed to provide an introductory learning experience for persons interested in the field of emergency medicine. This course includes practical and written testing in the classroom, as well as clinical experience in area hospitals and with local ambulance services. National Registry Certification tests will be available at course completion in both the written and skill areas. Area ambulance units and some hospital emergency departments utilize EMT-Bs.

Required Course
EMS 210 Emergency Medical Tech Basic  6

Prerequisite: Proof of successful and current completion of either American Heart Association Healthcare Provider CPR or Red Cross Professional Rescuer CPR training.

Enology

The Enology certificate offers a broad range of practical skills required to work in the wine industry. It emphasizes the procedures to effectively process fruit and handle wine in the cellar. In addition, the certificate will introduce basic wine laboratory analysis. Students will attain a foundation in viticulture, allowing them to scout vineyards and assess fruit quality and potential yield. Finally, the certificate program will examine how wines are produced in other major world growing regions.

Required Courses
VIN 149 Grape and Wine Science  4
VIN 150 Introduction to Wine  3
VIN 151 Cellar Tech. and Operations  4
VIN 152 Intro. to Wine Science  4
VIN 932 Internship in Enology  3

Total credits required to complete this certificate.......... 18

Entrepreneurship

The Entrepreneurship certificate introduces the student to creative and tested ways to start and operate a small business. Innovative marketing strategies, creative financing methods and employee development skills are emphasized in the program. Both day and evening courses are offered and all course work transfers into the one-year Entrepreneurship diploma program.

Required Courses
BUS 138 Small Business Marketing  3
BUS 141 Small Business Start-Up  3
BUS 148 Small Business Management  3
BUS 220 Introduction to International Business  3

Fashion

The purpose of the Fashion certificate is to provide an individual either currently employed in or wanting to enter the apparel and accessories field with specialized skills to enhance his/her knowledge of retailing and selling, as well as to develop fashion awareness.

Required Courses
APP 260 Fashion Analysis & Design  3
APP 111 Visual Merchandising & Design  3
APP 211 Textiles  3
MKT 160 Principles of Retailing  3
MKT 140 Selling  3

Total credits required to complete this certificate.......... 15

These credits are applicable to the AAS degree in Fashion/Design.

Fire Specialist

The Fire Specialist certificate provides basic technical knowledge for people working in the fire protection field.

Course work covers the scientific principles that affect fire, its causes and behavior and the means of minimizing its destructive effects through design, detection, suppression and prevention.

Required Courses
FIR 230 Fire Behavior and Investigation  3
FIR 232 Property Insurance–Fraud Investigation  3
FIR 124 Building Construction  3
FIR 152 Fire Protection Systems  3
FIR 182 Hazardous Materials  3
FIR 220 Planning for Fire Protection  3
FIR 212 Emergency Scene Management  3
FIR 200 Occup Safety/Health in Emergency Services  3
FIR 138 Principles of Fire Prevention  3

Total credits required to complete this certificate..........27

These credits are applicable to the AS degree in Fire Science Technology.

Certificates of Specialization

Option Courses—Select 1 Course from Each Option

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACC 131</td>
<td>Principles of Accounting I</td>
<td>Opt 1 4</td>
</tr>
<tr>
<td>ACC 111</td>
<td>Intro to Accounting</td>
<td>Opt 1 3</td>
</tr>
<tr>
<td>BUS 131</td>
<td>Small Business Management Strategies</td>
<td>Opt 2 3</td>
</tr>
<tr>
<td>BUS 181</td>
<td>Basic Law for Entrepreneurs</td>
<td>Opt 2 2</td>
</tr>
<tr>
<td>ACC 311</td>
<td>Computer Accounting</td>
<td>Opt 3 3</td>
</tr>
<tr>
<td>BUS 240</td>
<td>Virtual Business Firm</td>
<td>Opt 3 3</td>
</tr>
<tr>
<td>BUS 150</td>
<td>E-Commerce on the Web</td>
<td>Opt 3 3</td>
</tr>
</tbody>
</table>

Total credits required to complete this certificate........... 20

These credits are applicable to the diploma in Entrepreneurship.

Entrepreneurship

The Entrepreneurship certificate introduces the student to creative and tested ways to start and operate a small business. Innovative marketing strategies, creative financing methods and employee development skills are emphasized in the program. Both day and evening courses are offered and all course work transfers into the one-year Entrepreneurship diploma program.

Required Courses
BUS 138 Small Business Marketing  3
BUS 141 Small Business Start-Up  3
BUS 148 Small Business Management  3
BUS 220 Introduction to International Business  3

Total credits required to complete this certificate .......... 20

These credits are applicable to the diploma in Entrepreneurship.
## Gerontology Specialist

The Gerontology Specialist certificate is designed for individuals working with our growing older population. The goal is to increase knowledge and understanding of the aging process and how to better relate to the older adult. The specialist certificate will consist of eight one-credit courses on the web with face-to-face seminars, offered to a cohort group, over a two-semester period.

ASM 150, 155, 160, 165, 180 and 200 also meet the diversity requirement. Three ASM courses must be taken to fulfill the requirement because they are one credit each.

### Required Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASM 155</td>
<td>Impact of Demographics</td>
<td>1</td>
</tr>
<tr>
<td>ASM 160</td>
<td>Aspects of Aging</td>
<td>1</td>
</tr>
<tr>
<td>ASM 150</td>
<td>Communication with the Elderly</td>
<td>1</td>
</tr>
<tr>
<td>ASM 800</td>
<td>Seminar I</td>
<td>1</td>
</tr>
<tr>
<td>ASM 165</td>
<td>Healthy Aging</td>
<td>1</td>
</tr>
<tr>
<td>ASM 180</td>
<td>Cultural Diversity</td>
<td>1</td>
</tr>
<tr>
<td>ASM 200</td>
<td>Depress, Death &amp; Grieving</td>
<td>1</td>
</tr>
<tr>
<td>ASM 805</td>
<td>Seminar II</td>
<td>1</td>
</tr>
</tbody>
</table>

**Total credits required to complete this certificate**............8

## Graphic Sales & Customer Service

The Graphic Sales & Customer Service certificate is designed for students in the Graphic Technologies or Marketing programs who wish to specialize in their degree, or for individuals with prior experience who are looking to update their skills or are seeking advancement in the area of marketing or graphic communications. The program will provide up-to-date technical information regarding printing methods, cost estimating, sales and marketing.

The curriculum and instruction are geared to provide both lecture and laboratory settings that will build upon the individual’s prior knowledge and experience. Instruction and practical experience will be provided in the areas of printing methods, cost estimating, sales and marketing.

### Required Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GRT 400</td>
<td>Intro to Printing Methods</td>
<td>4</td>
</tr>
<tr>
<td>GRT 401</td>
<td>Intro to Graphic Communication</td>
<td>3</td>
</tr>
<tr>
<td>GRT 409</td>
<td>Project Planning &amp; Management</td>
<td>3</td>
</tr>
<tr>
<td>MKT 110</td>
<td>Principles of Marketing</td>
<td>3</td>
</tr>
<tr>
<td>MKT 140</td>
<td>Selling</td>
<td>3</td>
</tr>
<tr>
<td>MKT 150</td>
<td>Principles of Advertising</td>
<td>3</td>
</tr>
</tbody>
</table>

**Total credits required to complete this certificate**............19

Some of these credits are applicable to the AAS degree in Graphic Technologies.

## Greenhouse Production

The Greenhouse Production certificate will allow students to earn recognition for work completed in the area of greenhouse production. This certificate will provide students with the opportunity to develop specific skills related to horticulture chemicals, botany and greenhouse production techniques.

### Required Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AGA 157</td>
<td>Soil Fertility</td>
<td>1</td>
</tr>
<tr>
<td>AGA 154</td>
<td>Fundamentals of Soil Science</td>
<td>3</td>
</tr>
<tr>
<td>AGH 132</td>
<td>Intro to Greenhouse</td>
<td>3</td>
</tr>
<tr>
<td>AGH 283</td>
<td>Pesticide Application Certification</td>
<td>2</td>
</tr>
<tr>
<td>AGH 221</td>
<td>Principles of Horticulture</td>
<td>3</td>
</tr>
<tr>
<td>AGH 233</td>
<td>Plant Propagation I</td>
<td>3</td>
</tr>
<tr>
<td>AGH 133</td>
<td>Greenhouse Production Techniques</td>
<td>3</td>
</tr>
<tr>
<td>MAT 772</td>
<td>Applied Math</td>
<td>3</td>
</tr>
</tbody>
</table>

**Total credits required to complete this certificate**............ 21

These credits are applicable to the AAS degree in Commercial Horticulture.

## Human Resource Management

Human Resource Management skills are increasingly important for nearly anyone pursuing a career in business. This certificate is designed to provide a background in human resource functions and law for students majoring in Management, Business Administration, Administrative Assistant and Entrepreneurship among others. This certificate is also beneficial to people employed in business who wish to upgrade their knowledge of human resource procedures.

### Required Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MGT 145</td>
<td>Human Relations in Business</td>
<td>3</td>
</tr>
<tr>
<td>MGT 101</td>
<td>Principles of Management</td>
<td>3</td>
</tr>
<tr>
<td>MGT 130</td>
<td>Principles of Supervision</td>
<td>3</td>
</tr>
<tr>
<td>MGT 170</td>
<td>Human Resource Management</td>
<td>3</td>
</tr>
<tr>
<td>BUS 185</td>
<td>Business Law I</td>
<td>3</td>
</tr>
<tr>
<td>BUS 278</td>
<td>Employment Law</td>
<td>3</td>
</tr>
<tr>
<td>MGT 128</td>
<td>Organizational Behavior</td>
<td>3</td>
</tr>
</tbody>
</table>

**Total credits required to complete this certificate**............ 21

Some of these credits are applicable to the AAS degree in Graphic Technologies.
**PROGRAMS AVAILABLE**

**Information Processing Support**

The Information Processing Support certificate prepares students for an entry-level position in an office emphasizing information support. This curriculum includes business English and written communications. Students receive training on computers using office software applications with an emphasis on word processing.

**Required Courses**

- ADM 157 Business English 3
- ADM 154 Business Communication 3
- BCA 133 Word Processing Skill Development I 4
- BCA 137 Word Processing Skill Development II 3
- BCA212 Intro to Computer Business Appl 3
- BCA213 Intermediate Computer Business Applications 3

**Total credits required to complete this certificate............ 19**

These credits are applicable to the AAS degree in Administrative Assistant.

**Interactive Media for Graphic Design**

This certificate will provide students with the opportunity to develop specific skills to design for a range of interactive media including web sites, cellular telephones, personal digital assistants and other technology. The Interactive Media for Graphic Design certificate is designed for students in the Graphic Design program or for individuals with prior graphic design experience who are looking to update their skills.

**Required Courses**

- GRD 470 Interactive Media I 3
- GRD 471 Interactive Media II 3

**Total credits required to complete this certificate............ 6**

These credits are applicable to the AAS degree in Graphic Design.

**Interior Design Consultant**

The Interior Design Consultant certificate is designed for currently employed individuals who have an interest in adding specialized training in interior home products to their credentials. The focus of the Interior Design Consultant certificate is to provide training needed at the wholesale or retail levels in interior home product sales, marketing or customer service.

**Required Courses**

- MKT 140 Selling 3
- MKT 110 Principles of Marketing 3
- INT 124 Interior Design Analysis 3
- INT 125 Interior Design Planning 3
- APP 111 Visual Merchandising & Design 3
- APP 211 Textiles 3

**Total credits required to complete this certificate............ 18**

These credits are applicable to the Fashion diploma or the AAS degree in Fashion/Design.

**Certificates of Specialization**

**Interpretation & Translation–Generalist**

The Interpretation & Translation–Generalist Certificate is a vocational credential for preparing functionally bilingual students for entry-level employment as general, nonspecialized interpreters or translators. Upon completion, students should be able to provide basic interpreting and translation services between English and their other language(s) in nonspecialized contexts. The program is designed for students who wish to add general interpreting and translation skills to their current set of job skills. Certificate students complete basic courses in interpretation and translation, as well as ethics. All students complete an internship under the supervision of a professional interpreter/translator, during which time they use the skills and apply the knowledge gained in the classroom. Some credits earned for the Interpretation & Translation–Generalist certificate can also be applied to the Healthcare Interpretation & Translation AS and certificate programs, or to the Healthcare Interpretation & Translation AS and certificate programs.

A program chairperson and a program counselor are available to assist students with education and career planning.

Employment opportunities for general Interpretation & Translation interpreters and translators are currently found in all industries and businesses where nonspecialized interpretation and translation services are needed. There are also many volunteer opportunities.

**Note:** Interpretation and translation employment in specialized areas, including legal, medical, social services, education fields and many businesses require additional specialized training and/or certification. Students interested in those fields should consider the Judiciary Interpretation & Translation AS or certificate programs or the Healthcare Interpretation & Translation certificate programs.

**Location: Urban**

**Program Entry Requirements**

1. Complete an application for admission.
2. Attend any required information/orientation or a program conference.
3. Provide evidence of proficiency in English with one of the following:
   a. ACT score on the English subtest of 19 or above
   b. Minimum COMPASS score of 70
   c. Completion of ENG 105 with grade of “C” or better
   d. TOEFL score of 173 on the computer test or 500 on the paper test
   e. Completion of two years of college study with a minimum GPA of 2.0 (or equivalent) at an institution where English is the medium of instruction
   f. Other evidence demonstrating English proficiency may be approved by the program chair
4. Show proficiency in a second language with one of the following:
   a. Evidence of completion of high school in a country where the second language is spoken
   b. Two years of college study with a minimum GPA of 2.0 (or equivalent) at an institution in a country where the second language is spoken
   c. Completion of a college minor in the second language with a minimum grade of “C” for all courses taken in the second language
   d. Proficiency may be demonstrated with other evidence, but must be approved by the program chair
   e. Students will need computer skills to be successful in the program. If students do not have these skills, completion of BCA 212 or CSC 110 is strongly recommended, but the course will be an extra course and will not apply toward program requirements.
Students may start any term; however, students should contact an academic advisor for planning, as many courses are only offered once per year.

### Required Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ITR 101</td>
<td>Intro to Interpretation &amp; Translation</td>
<td>3</td>
</tr>
<tr>
<td>ITR 102</td>
<td>Tools for the Interpreter &amp; Translator</td>
<td>3</td>
</tr>
<tr>
<td>ITR 111</td>
<td>Fundamentals of Interpretation</td>
<td>3</td>
</tr>
<tr>
<td>ITR 115</td>
<td>Fundamentals of Translation</td>
<td>3</td>
</tr>
<tr>
<td>ITR 120</td>
<td>Ethics for the Interpreter/Translator</td>
<td>1</td>
</tr>
<tr>
<td>ITR 805</td>
<td>Generalist I/T Internship</td>
<td>2</td>
</tr>
</tbody>
</table>

**Total credits required to complete this certificate............ 15**

These credits (except ITR 805) are applicable to the AS degree in Interpretation & Translation.

## Interpretation & Translation–Healthcare

The Interpretation & Translation–Healthcare certificate is for functionally bilingual students with a Bachelor’s degree, Associate in Science or Associate in Arts degree who wish to work as healthcare interpreters or translators. Upon completion, students should be able to provide basic interpreting and translation services between English and their other language(s) in healthcare contexts. The program is designed for students who wish to add healthcare interpreting and translation skills to their current set of job skills.

Certificate students complete basic courses in interpretation and translation, as well as ethics. All students complete an internship under the supervision of a professional interpreter/translator, during which time they use the skills and apply the knowledge gained in the classroom. Some credits earned for the Interpretation & Translation–Healthcare certificate can also be applied to the Judiciary Interpretation & Translation AS and certificate programs, or to the Interpretation & Translation–Generalist certificate programs.

A program chairperson and a program counselor are available to assist students with education and career planning.

Employment opportunities are currently found in healthcare facilities where specific interpretation and translation related to healthcare services are needed. There are also many volunteer opportunities.

*Note: Interpretation and translation employment in specialized areas, including legal, medical, social services, education fields and many businesses requires additional specialized training and/or certification. Students interested in legal interpretation and translation should consider the Judiciary Interpretation & Translation AS degree or certificate programs.*

### Location: Urban

#### Program Entry Requirements

1. Complete an application for admission.
2. Attend any required information/orientation or a program conference.
3. Provide evidence of completion of a Bachelor’s degree, Associate in Science degree or Associate in Arts degree.
4. Provide evidence of proficiency in English with one of the following:
   a. ACT score on the English subtest of 19 or above
   b. Minimum COMPASS score of 70
   c. Completion of ENG 105 with a grade of “C” or better
   d. TOEFL score of 173 on the computer test or 500 on the paper test
   e. Completion of two years of college study with a minimum GPA of 2.0 (or equivalent) at an institution where English is the medium of instruction

**Total credits required to complete this certificate............ 33**

These credits are applicable to the AS degree in Interpretation & Translation.

## Interpretation & Translation–Judiciary

The Interpretation & Translation–Judiciary certificate is for functionally bilingual students with a Bachelor’s degree, Associate in Science or Associate in Arts degree who wish to work as judiciary interpreters or translators. Upon completion, students should be able to provide basic interpreting and translation services between English and their other language(s) in judiciary contexts. The program is designed for students who wish to add judiciary interpreting and translation skills to their current set of job skills.

Certificate students complete basic courses in interpretation and translation, as well as ethics. All students complete an internship under the supervision of a professional interpreter/translator, during which time they use the skills and apply the knowledge gained in the classroom. Some credits earned for the Interpretation & Translation–Judiciary certificate can also be applied to the Interpretation & Translation–Healthcare certificate, or to the Interpretation & Translation–Generalist certificate program.

A program chairperson and a program counselor are available to assist students with education and career planning.

#### Required Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ITR 101</td>
<td>Intro to Interpretation &amp; Translation</td>
<td>3</td>
</tr>
<tr>
<td>ITR 102</td>
<td>Tools for the Interpreter &amp; Translator</td>
<td>3</td>
</tr>
<tr>
<td>ITR 111</td>
<td>Fundamentals of Interpretation</td>
<td>3</td>
</tr>
<tr>
<td>ITR 115</td>
<td>Fundamentals of Translation</td>
<td>3</td>
</tr>
<tr>
<td>ITR 120</td>
<td>Ethics for the Interpreter/Translator</td>
<td>1</td>
</tr>
<tr>
<td>ITR 910</td>
<td>Emphasis Seminar</td>
<td>3</td>
</tr>
<tr>
<td>BIO 156</td>
<td>Human Biology w/Lab</td>
<td>3</td>
</tr>
<tr>
<td>ITR 148</td>
<td>Healthcare Terminology &amp; Sight Translation</td>
<td>3</td>
</tr>
<tr>
<td>ITR 150</td>
<td>Healthcare Interpreting I</td>
<td>3</td>
</tr>
<tr>
<td>ITR 152</td>
<td>Healthcare Interpretation II</td>
<td>3</td>
</tr>
<tr>
<td>ITR 158</td>
<td>Healthcare Translation</td>
<td>3</td>
</tr>
<tr>
<td>ITR 810</td>
<td>Healthcare I/T Internship</td>
<td>2</td>
</tr>
</tbody>
</table>

**Total credits required to complete this certificate............ 33**

These credits are applicable to the AS degree in Interpretation & Translation.

f. Other evidence demonstrating English proficiency may be approved by the program chair.

5. Show proficiency in a second language with one of the following:
   a. Evidence of completion of high school in a country where the second language is spoken
   b. Two years of college study with a minimum GPA of 2.0 or equivalent at an institution in a country where the second language is spoken
   c. Completion of a college minor in the second language with a minimum grade of “C” for all courses taken in the second language
   d. Proficiency may be demonstrated with other evidence, but must be approved by the program chair
   e. Students will need computer skills to be successful in the program. If students do not have these skills, completion of BCA 212 or CSC 110 is strongly recommended, but the course will be an extra course and will not apply toward certificate requirements.
Employment opportunities for Interpretation & Translation–Judiciary interpreters and translators are found in law enforcement agencies, law offices and courts where interpretation and translation services are needed. There are also many volunteer opportunities.

Note: Interpretation and translation employment in specialized areas, including legal, medical, social services, education fields and many businesses requires additional specialized training and certification. Students interested in healthcare interpretation and translation should consider the Healthcare Interpretation & Translation AS or certificate programs.

Location: Urban

Program Entry Requirements
1. Complete an application for admission.
2. Attend any required information/orientation or a program conference.
3. Provide evidence of completion of a Bachelor’s degree, Associate in Science degree or Associate in Arts degree.
4. Provide evidence of proficiency in English with one of the following:
   a. ACT score on the English subtest of 19 or above
   b. Minimum COMPASS score of 70
   c. Completion of ENG 105 with a grade of “C” or better
   d. TOEFL score of 173 on the computer test or 500 on the paper test
   e. Completion of two years of college study with a minimum GPA of 2.0 (or equivalent) at an institution where English is the medium of instruction
   f. Other evidence demonstrating English proficiency may be approved by the program chair
5. Show proficiency in a second language with one of the following:
   a. Evidence of completion of high school in a country where the second language is spoken
   b. Two years of college study with a minimum GPA of 2.0 or equivalent at an institution in a country where the second language is spoken
   c. Completion of a college minor in the second language with a minimum grade of “C” for all courses taken in the second language
   d. Proficiency may be demonstrated with other evidence, but must be approved by the program chair
   e. Students will need computer skills to be successful in the program. If students do not have these skills, completion of BCA 212 or CSC 110 is strongly recommended, but the course will be an extra course and will not apply toward certificate requirements.

Students may start any term; however, students should contact an academic advisor for planning, as many courses are offered only once per year.

Required Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ITR 101</td>
<td>Intro to Interpretation &amp; Translation</td>
<td>3</td>
</tr>
<tr>
<td>ITR 102</td>
<td>Tools for the Interpreter &amp; Translator</td>
<td>3</td>
</tr>
<tr>
<td>ITR 111</td>
<td>Fundamentals of Interpretation</td>
<td>3</td>
</tr>
<tr>
<td>ITR 115</td>
<td>Fundamentals of Translation</td>
<td>3</td>
</tr>
<tr>
<td>ITR 120</td>
<td>Ethics for the Interpreter/Translator</td>
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</tr>
<tr>
<td>ITR 910</td>
<td>Emphasis Seminar</td>
<td>3</td>
</tr>
<tr>
<td>PRL 103</td>
<td>Introduction to Law</td>
<td>3</td>
</tr>
<tr>
<td>ITR 128</td>
<td>Legal Terminology &amp; Sight Translation</td>
<td>3</td>
</tr>
</tbody>
</table>

Certificates of Specialization

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ITR 130</td>
<td>Judiciary Interpreting I</td>
<td>3</td>
</tr>
<tr>
<td>ITR 132</td>
<td>Judiciary Interpreting II</td>
<td>3</td>
</tr>
<tr>
<td>ITR 137</td>
<td>Judiciary Translation</td>
<td>3</td>
</tr>
<tr>
<td>ITR 800</td>
<td>Judiciary I/T Internship</td>
<td>2</td>
</tr>
</tbody>
</table>

Total credits required to complete this certificate: 33

Landscape Design

The Landscape Design certificate will allow students to earn recognition for work completed in the area of landscape design. This certificate will provide students with the opportunity to develop specific skills related to plant materials, construction techniques and design.

Required Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AGA 157</td>
<td>Soil Fertility</td>
<td>1</td>
</tr>
<tr>
<td>AGA 154</td>
<td>Fundamentals of Soil Science</td>
<td>3</td>
</tr>
<tr>
<td>AGH 154</td>
<td>Residential Landscape Design</td>
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</tr>
<tr>
<td>AGH 159</td>
<td>Landscape Drafting</td>
<td>2</td>
</tr>
<tr>
<td>AGH 221</td>
<td>Principles of Horticulture</td>
<td>3</td>
</tr>
<tr>
<td>AGH 155</td>
<td>Landscape Design II</td>
<td>2</td>
</tr>
<tr>
<td>AGH 142</td>
<td>Construction, Safety &amp; Maintenance</td>
<td>3</td>
</tr>
<tr>
<td>AGH 123</td>
<td>Woody Plant Materials</td>
<td>3</td>
</tr>
<tr>
<td>AGH 120</td>
<td>Herbaceous Plant Materials</td>
<td>3</td>
</tr>
</tbody>
</table>

Total credits required to complete this certificate: 23

Legal Assistant

The Legal Assistant certificate is for students with a Bachelor’s degree, Associate in Science or Associate in Arts degree who wish to work as a legal assistant. A legal assistant performs a variety of legal tasks and provides a broad spectrum of services for attorneys in private practice, state agencies and public service organizations. The legal assistant works with the attorney in virtually every aspect of the legal profession except giving advice or representing clients in court (the actual practice of law). To earn a Legal Assistant certificate, a student must submit proof of having earned a prior degree. Students must receive a grade of “C” or above in all PRL course work.

Required Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRL 103</td>
<td>Introduction to Law</td>
<td>3</td>
</tr>
<tr>
<td>PRL 131</td>
<td>Torts &amp; Litigation I</td>
<td>3</td>
</tr>
<tr>
<td>PRL 141</td>
<td>Business &amp; Corporate Law I</td>
<td>3</td>
</tr>
<tr>
<td>PRL 280</td>
<td>Legal Internship &amp; Ethics</td>
<td>4</td>
</tr>
<tr>
<td>PRL 112</td>
<td>Legal Research &amp; Writing I</td>
<td>3</td>
</tr>
<tr>
<td>PRL 133</td>
<td>Legal Research &amp; Writing II</td>
<td>3</td>
</tr>
</tbody>
</table>

Option Courses–Select 15 Credits from Option 1

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRL 132</td>
<td>Torts &amp; Litigation II</td>
<td>Opt 1</td>
</tr>
<tr>
<td>PRL 161</td>
<td>Family Law</td>
<td>Opt 1</td>
</tr>
<tr>
<td>PRL 142</td>
<td>Business &amp; Corporate Law II</td>
<td>Opt 1</td>
</tr>
<tr>
<td>PRL 151</td>
<td>Real Estate Law</td>
<td>Opt 1</td>
</tr>
<tr>
<td>PRL 167</td>
<td>Probate Procedure</td>
<td>Opt 1</td>
</tr>
</tbody>
</table>
PROGRAMS AVAILABLE

Maintenance

The purpose of the Maintenance certificate is to provide a part-time, evening option for students wishing to take classes in the Diesel Technology field. Interested students can complete just one class or all of them. Those classes marked with an * are applicable toward the diploma or AAS degree program.

**Required Courses**

*DSL 145 Basic Electricity  5
*DSL 733 Air Conditioning  3
*DSL 830 Operation and Maintenance  5
*DSL 605 Hydraulics and Brakes  5

Total credits required to complete this certificate............ 21

*Classes marked with an * are applicable to the diploma and AAS degree in Diesel Technology.

Certificates of Specialization

Long-Term Care Administrator

The Long-Term Care Administrator Specialist certificate is designed for students with a prior degree who plan to sit for Nursing Home Administrator Licensure. Students must meet the Iowa Board of Examiners for Nursing Home Administrators equivalency requirements, which include verification of a four-year degree. Students are required to submit their official college transcripts to the DMACC Admissions Office.

**Important Note:** Students are strongly advised to contact one of the staff members of Aging Services Management in Bldg. 24, Room 208A on the Ankeny Campus or call 515-964-6262 or 515-964-6814 for additional important information.

**Required Courses**

ASM 278 Management in Senior Care Services  3
ASM 279 Healthcare Human Resources  3
ASM 280 Healthcare Delivery Systems  2
ASM 281 Aging Services  2
ASM 283 Aging Policies and Government Programs  2
SOC 225 Social Gerontology/Applications  4
SOC 226 Issues in Aging  2

**Practicum**

ASM 251 Governance of NF/SNF  2
ASM 252 Governance of Supported Living  2
ASM 253 LTC Practicum: Psychosocial Needs  2
ASM 254 LTC Practicum: Physical Needs  2
ASM 255 LTC Practicum: Administration  2
ASM 257 ASM Capstone  2

**Option Courses—Select 10 Credits from Option 1**

ACC 111 Intro to Accounting  Opt 1 3
ACC 131 Principles of Accounting I  Opt 1 4
ASM 238 Financial Management in AS  Opt 1 3
ASM 239 Information Systems in Healthcare  Opt 1 2
ASM 274 Law and Ethics in Healthcare  Opt 1 3

Total credits required to complete this certificate............ 40

These credits are applicable to the AS degree in Aging Services Management.

Management

The purpose of the Management certificate is to provide the currently employed person in business with broad knowledge of the principles of management and business functions. Human relations and communication skills necessary for recognition and appointment to successive levels of management are also provided. This certificate is also beneficial to people currently employed in management who wish to upgrade and improve chances for further promotion.

**Required Courses**

MGT 130 Principles of Supervision  3
MGT 101 Principles of Management  3
BUS 102 Intro to Business  3
BUS 185 Business Law I  3
CSC 110 Intro to Computers  3

**Option Courses—Select 1 Course from Each Option**

BUS 150 E-Commerce on the Web Opt 1 3
MKT 145 Sales Management Opt 1 3
MGT 115 Administrative Management Opt 1 3
MKT 115 Business-to-Business Marketing Opt 1 3
MKT 160 Principles of Retailing Opt 1 3
BUS 148 Small Business Management Opt 1 3
ACC 131 Principles of Accounting I Opt 2 4
ACC 111 Intro to Accounting Opt 2 3
ENG 105 Composition I Opt 3 3
COM 703 Communication Skills Opt 3 3
MKT 145 Human Relations in Business Opt 4 3
PSY 111 Intro to Psychology Opt 4 3
BUS 112 Business Math Opt 5 3
MAT 141 Finite Math Opt 5 4

Total credits required to complete this certificate............ 30

These credits are also applicable to the AAS degree in Management and the AAS degree in Marketing.
PROGRAMS AVAILABLE

Medical Insurance and Coding

Medical Insurance and Coding is one of the fastest-growing medical office specialties and promises to increase in importance. Students learn to transform medical diagnoses and procedures into numbers or codes for purposes of reimbursement and recordkeeping. This certificate is designed for those who choose to work in a variety of medical settings including hospitals and medical centers, government facilities, insurance companies and home offices. It is ideal for the individual who is currently working in the medical setting and wants to develop skills that are “best of practice.” Courses are offered online or late afternoon and evening. In addition, this certification can be earned in coordination with the Medical Office Specialist program.

Prerequisite

Keyboarding speed of 40 nwpm or above as demonstrated by a five-minute test.

Term 1

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADM 157</td>
<td>Business English</td>
<td>3</td>
</tr>
<tr>
<td>HSC 120*</td>
<td>Medical Terminology I</td>
<td>3</td>
</tr>
<tr>
<td>MAP 141</td>
<td>Medical Insurance</td>
<td>3</td>
</tr>
<tr>
<td>BCA 133</td>
<td>Word Processing Skill Dev. I</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td><strong>Total credits required to complete this certificate</strong></td>
<td><strong>25</strong></td>
</tr>
</tbody>
</table>

*Challenge test available. Must earn 74%.

Note: Graduates may sit, at their own expense, for the Certified Coding Associates designation through the American Health Information Management Association.

Majority of credits listed above are applicable to the AAS degree in Medical Office Specialist.

Medical Transcriptionist

The purpose of the Medical Transcriptionist certificate is to provide a course of study for medical office specialist students to concentrate in the area of medical transcription. This certificate is best suited for people who have a background in medical/business work experience. Employment opportunities are numerous in a variety of settings: hospitals and medical centers, clinic and group practices, radiology and pathology offices, government facilities, private and temporary agencies and in home offices. In addition to a choice of work settings, the medical transcriptionist can usually choose part-time or full-time employment and frequently, flexible scheduling. Students start any term.

Prerequisite:

1. Complete an application for admission.
2. Complete ADM 157 Business English with a grade of “C” or better.
3. Keyboarding speed of 40 nwpm or above as demonstrated by a five-minute test.

Term 1

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BCA 133</td>
<td>Word Processing Skill Development I</td>
<td>4</td>
</tr>
<tr>
<td>HSC 120*</td>
<td>Medical Terminology I</td>
<td>3</td>
</tr>
<tr>
<td>MTR 120</td>
<td>Medical Transcription I</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td><strong>Total credits required to complete this certificate</strong></td>
<td><strong>22</strong></td>
</tr>
</tbody>
</table>

These credits are also applicable to the AAS degree in Medical Office Specialist.

Microcomputers

This certificate is designed for people who desire to learn about operating and networking systems and who have strong business computer applications skills in word processing, spreadsheets and databases. It is most appropriate for people employed in small businesses where the employer wants employees to upgrade their business computer applications skills and assume responsibility for a network.

Required Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUS 102</td>
<td>Introduction to Business</td>
<td>3</td>
</tr>
<tr>
<td>CIS 125</td>
<td>Intro to Programming Logic w/Lang</td>
<td>3</td>
</tr>
<tr>
<td>CIS 402</td>
<td>COBOL</td>
<td>3</td>
</tr>
<tr>
<td>CSC 110</td>
<td>Intro to Computers</td>
<td>3</td>
</tr>
<tr>
<td>BCA 113</td>
<td>Computer Network Literacy</td>
<td>3</td>
</tr>
</tbody>
</table>

Option Courses—Select a Minimum of 6 Credits

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Opt</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACC 131</td>
<td>Principles of Accounting I</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>ACC 132</td>
<td>Principles of Accounting II</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>ACC 311</td>
<td>Computer Accounting</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>ACC 361</td>
<td>Accounting Spreadsheets</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>CIS 413</td>
<td>COBOL II</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>CIS 604</td>
<td>Visual BASIC</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>CIS 612</td>
<td>Advanced Visual BASIC</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>CIS 161</td>
<td>C++</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>CIS 164</td>
<td>Advanced C++</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>CIS 303</td>
<td>Introduction to Data Base</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>CIS 332</td>
<td>Data Base and SQL</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>CIS 338</td>
<td>SQL/oracle</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>CIS 346</td>
<td>Data Base Design</td>
<td>1</td>
<td>3</td>
</tr>
</tbody>
</table>

**Total credits required to complete this certificate** | **21**

The majority of these credits are applicable to the AS degree in Accounting Information Systems and the AAS in Business Information Systems.
### Programs Available

#### Network Security Manager

The purpose of the Network Security Manager certificate is to provide students who are already employed in the area of information technology the knowledge and skills needed to prepare for careers as security systems analysts, security business analysts, database administrators or system development managers. Students learn basic concepts and terminology in computer networks and data communications, as well as project initiation, fact gathering, procedures, forms, system implementation and evaluation. They also study legal and ethical issues, security technologies, risk management, network and system security, cryptography and information security maintenance. Students learn to detect and analyze data stored or hidden on computer systems and to implement database security and auditing in order to protect data.

Prior to enrolling in the Network Security Manager certificate courses, students must successfully complete the following courses: CSC 110 Intro to Computers, CIS 125 Intro to Programming Logic w/Lang, CIS 402 COBOL or equivalent courses or have instructor approval.

**Required Courses**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BCA 113</td>
<td>Computer Network Literacy</td>
<td>3</td>
</tr>
<tr>
<td>CIS 303</td>
<td>Introduction to Data Base</td>
<td>3</td>
</tr>
<tr>
<td>CIS 505</td>
<td>Structured Systems Analysis</td>
<td>4</td>
</tr>
<tr>
<td>NET 612</td>
<td>Fundamentals of Network Security</td>
<td>3</td>
</tr>
<tr>
<td>NET 715</td>
<td>Database Security &amp; Auditing</td>
<td>3</td>
</tr>
<tr>
<td>NET 730</td>
<td>Computer Forensics &amp; Investigation</td>
<td>3</td>
</tr>
</tbody>
</table>

**Total credits required to complete this certificate**: 19

#### Office Specialist

The Office Specialist certificate provides students with basic entry-level skills for office support positions. These skills include computer operations, business English, human relations and office calculators. Students who complete all courses will qualify for a variety of entry-level clerical positions.

**Required Courses**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUS 112</td>
<td>Business Math</td>
<td>3</td>
</tr>
<tr>
<td>MGT 145</td>
<td>Human Relations in Business</td>
<td>3</td>
</tr>
<tr>
<td>ADM 157</td>
<td>Business English</td>
<td>3</td>
</tr>
<tr>
<td>BCA 133</td>
<td>Word Processing Skill Development I</td>
<td>4</td>
</tr>
<tr>
<td>ADM 131</td>
<td>Office Calculators</td>
<td>1</td>
</tr>
<tr>
<td>BCA 212</td>
<td>Intro Computer Business Appl</td>
<td>3</td>
</tr>
</tbody>
</table>

**Total credits required to complete this certificate**: 17

These credits are applicable to the AAS degree in Administrative Assistant and the diploma in Office Assistant.

#### Phlebotomy

A phlebotomist draws blood from patients for diagnostic medical tests. Most phlebotomists are employed in hospitals. The program runs approximately 13 weeks and is offered Fall and Spring term.

Background checks for criminal history will be done and results will be shared with cooperating agencies, which may prevent placement for clinical practicum. This will affect successful program completion.

**NOTE**: Proof of immunizations required prior to beginning of clinical rotation.

**Program Entry Requirements**

1. Complete an application for admission.
2. Attend a required information/registration session, or obtain the approval of the program chair.
3. Submit to the Admissions Office evidence of high school graduation or GED prior to enrollment.

**Required Courses**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHB 113</td>
<td>Principles of Phlebotomy</td>
<td>3</td>
</tr>
<tr>
<td>PHB 280</td>
<td>Phlebotomy Clinical</td>
<td>2</td>
</tr>
</tbody>
</table>

**Total credits required to complete this certificate**: 5

#### Printing Technologies

The Printing Technologies certificate is designed for students in the Graphic Technologies program who wish to specialize in their degree, or for individuals with prior printing experience who are looking to update their skills or are seeking advancement in the graphics/printing industry. The program will provide up-to-date technical information regarding tools, equipment and processes.

The curriculum and instruction are geared to provide both lecture and laboratory settings that will build upon the individual’s prior knowledge and experience. Instruction and practical experience will be provided in offset, flexography and screen printing. Job planning, cost estimating and finishing methods will also be covered.

**Required Courses**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GRT 400</td>
<td>Intro to Printing Methods</td>
<td>4</td>
</tr>
<tr>
<td>GRT 401</td>
<td>Intro to Graphic Communication</td>
<td>3</td>
</tr>
<tr>
<td>GRT 409</td>
<td>Project Planning &amp; Management</td>
<td>3</td>
</tr>
<tr>
<td>GRT 410</td>
<td>Printing Methods I</td>
<td>4</td>
</tr>
<tr>
<td>GRT 420</td>
<td>Advanced Printing Methods</td>
<td>4</td>
</tr>
<tr>
<td>GRT 427</td>
<td>Specialty Printing Methods</td>
<td>4</td>
</tr>
</tbody>
</table>

**Total credits required to complete this certificate**: 22

These credits are applicable to the AAS degree in Graphic Technologies.

**Visit us online**: www.DMACC.edu 123
### Programs Available

#### Retailing

The Retailing certificate offers skills for entering the world of retail marketing and merchandising and for those already employed who wish to move to higher levels of responsibility.

A growing number of job openings exist for those who want a career that is both challenging and rewarding.

**Required Courses**

- MKT 160 Principles of Retailing 3
- MKT 140 Principles of Marketing 3
- MKT 194 Relationship Strategies in Business 2
- MGT 147 Leadership Development 3

**Option Courses—Select 1 Course from Each Option**

- ENG 105 Composition I Opt 1 3
- COM 703 Communication Skills Opt 1 3
- MGT 145 Human Relations in Business Opt 2 3
- PSY 111 Introduction to Psychology Opt 2 3

**Total credits required to complete this certificate**............ 12

These credits are also applicable to the diploma in Sales & Management, the AAS in Fashion/Design, the AAS degree in Management and the AAS degree in Marketing.

#### Sales

The purpose of the Sales certificate is to provide persons with knowledge of the basic principles of selling and marketing and the elements of human relations and communication required to enter the field of selling. This program is offered both during the evening and the day.

**Required Courses**

- MKT 140 Selling 3
- MKT 110 Principles of Marketing 3
- MKT 194 Relationship Strategies in Business 2
- MGT 147 Leadership Development 3

**Option Courses—Select 1 Course from Each Option**

- ENG 105 Composition I Opt 1 3
- COM 703 Communication Skills Opt 1 3
- MGT 145 Human Relations in Business Opt 2 3
- PSY 111 Introduction to Psychology Opt 2 3

**Total credits required to complete this certificate**............ 17

These credits are also applicable to the diploma in Sales & Management, the diploma or AAS in Fashion/Design, the AAS degree in Management and the AAS degree in Marketing.

#### Supervision

The purpose of the Supervision certificate is to provide the person currently employed in business with knowledge of the principles of supervising others and the elements of human relations and communication needed for promotion and success in first-line supervision. The certificate is also beneficial to people currently working as supervisors who wish to upgrade their credentials.

**Required Courses**

- MGT 130 Principles of Supervision 3
- MGT 101 Principles of Management 3

**Option Courses—Select 6 Credits from Option 1 and 1 Course from Option 2 and 1 Course from Option 3**

- BUS 102 Introduction to Business Opt 1 3
- BUS 148 Small Business Management Opt 1 3

**Total credits required to complete this certificate**............ 18

These credits are applicable to the AAS degree in Supervision Administration.

#### Telecommunications

This certificate program prepares the student for working in the telecommunications outside plant field or inside careers with business and residential customers. The course work prepares students to work on local installations of communication services in both business and residential settings. Training includes installation and repair, line troubleshooting, working aloft and pole climbing, and basic business communication system programming and repair.

**Required Courses**

- ELT 368 DC & AC Fundamentals 3
- ELT 369 DC & AC Fundamentals Lab 3
- TEL 210 Telecommunications I 3
- TEL 213 Introduction to Telephony Lab 3
- TEL 220 Telecommunications II 4
- TEL 223 Telecom Transport Lab 3

**Total credits required to complete this certificate**............ 27

These credits are applicable to the AAS degree in Telecommunications Technology.
**Turf Maintenance**

The Turf Maintenance certificate will allow students to earn recognition for work completed in the area of turf maintenance. This certificate will provide students with the opportunity to develop specific skills related to the maintenance of such turf grass areas as lawns, parks, sports fields and golf courses.

**Required Courses**
- AGA 157 Soil Fertility 1
- AGA 154 Fundamentals of Soil Science 3
- AGH 283 Pesticide Application Certification 2
- AGH 160 Irrigation Systems 2
- AGH 241 Sports Turf 2
- AGH 111 Intro to Turfgrass Management 2
- MAT 772 Applied Math 3

**Option Courses—Select 1 Course from Option 1**
- ENV 115 Environmental Science Opt 1 3
- AGH 221 Principles of Horticulture Opt 1 3

**Total credits required to complete this certificate............ 21**

The majority of these credits are applicable to the AAS degree in Commercial Horticulture.

**Viticulture**

The Viticulture certificate provides job training for those working with vineyards and for those who want to start a vineyard. The certificate will promote skills and practices imperative for quality grape production.

**Required Courses**
- VIN 149 Grape and Wine Science 4
- VIN 101 Intro to Starting a Vineyard 4
- VIN 102 Intro to Bearing Vineyards 4
- VIN 103 Intro to Vineyard Pest Mgmt 4
- VIN 920 Field Experience 3

**Total credits required to complete this certificate............ 19**

**Welding**

In an effort to meet the needs of interested students and local industry, the Welding program is offering open-entry and open-exit courses designed for the inexperienced as well as more advanced and experienced welders. This flexibility allows students to take only those portions of the program they need at any given time. Students will be allowed to enroll as long as there is space available. Emphasis is placed on skill and knowledge that is required for the student to enter employment in the welding field, or for the student’s own personal gain.

**Oxy-acetylene Welding**
- WEL 120 Oxy-Fuel Welding/Cutting 2

These credits are applicable to the diploma in Welding.

**Shielded Metal Arc Welding**
- WEL 150 Arc Welding I (SMAW) 2
- WEL 165 Arc Welding II (SMAW) 3
- WEL 166 Arc Welding III (SMAW) 2
- WEL 167 Arc Welding IV (SMAW) 3
- WEL 168 Arc Welding V (SMAW) 3
- WEL 169 Arc Welding VI (SMAW) 2

**Total credits required for Shielded Metal Arc Welding .... 15**

These credits are applicable to the diploma in Welding.

**Gas Metal Arc Welding**
- WEL 181 Gas Metal Arc Welding 2

These credits are applicable to the diploma in Welding.

**Gas Tungsten Arc Welding**
- WEL 190 Gas Tungsten Arc Welding 2

These credits are applicable to the diploma in Welding.

**Blueprint Reading**
- WEL 111 Welding Blueprint Reading 3

These credits are applicable to the diploma in Welding.

**Structural Welding**
- WEL 176 Advanced Arc Welding I (SMAW) 2
- WEL 177 Advanced Arc Welding II (SMAW) 3

**Pipe Welding**
- WEL 303 Pipe Welding (SMAW) 3
PROGRAMS AVAILABLE

Certificates of Completion

Transportation Institute

Commercial Vehicle

Commercial Vehicle Operator Program
The Transportation Institute commercial vehicle operator program is one of approximately 65 in the U.S. that has been certified by the Professional Truck Drivers Institute of America. The 240-hour, noncredit program uses the U.S. Department of Transportation Model Curriculum. Students may complete the program in the daytime in six weeks or during the evenings in 12 weeks.

The Institute provides customized programs and services to individuals and companies including remediation and evaluation services, advanced driver programs, Defensive Driving Courses (DDC), driver/dispatcher relationships and driver retention programs. It also offers a Train the Trainer Program that allows transportation carriers to qualify their drivers to become certified driver finishers.

Features
1. Placement with companies prior to beginning of training.
2. Extensive in-truck training with two-students-per-instructor ratio.
3. Student loan availability for students who qualify.
4. Graduation with a Commercial Drivers License (CDL).
5. Earning potential: $25,000–$40,000 first year.
6. Excellent career opportunities within the industry.

Required Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Contact Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic Operations</td>
<td>81.75</td>
</tr>
<tr>
<td>Safe Operational Practices</td>
<td>44.50</td>
</tr>
<tr>
<td>Advanced Operating Procedures</td>
<td>38.00</td>
</tr>
<tr>
<td>Vehicle Maintenance</td>
<td>16.75</td>
</tr>
<tr>
<td>Non-Vehicle Activities</td>
<td>59.00</td>
</tr>
</tbody>
</table>

RV Safety and Education Program

RV Safety and Education program students become confident when traveling in situations they may encounter in the RV lifestyle after receiving training in all phases of driving, maneuvering and backing a recreational vehicle. The RV program is a total of 3 hours in the classroom and 5 hours of hands-on driving. Additional driving time and private lessons are available. The program specializes in safety, respect, patience and confidence in a variety of vehicles of all sizes from class A, B & C motor homes, to fifth-wheel trailers to travel trailers.

We also have RV (Recreational Vehicle) training and educational programs, with RV drivers to provide the best information and training possible about RVs and the RV lifestyle. DMACC is the second school nationwide to offer this RV training.
COURSE DESCRIPTIONS

How to read our Course Descriptions

The following are standard, approved subjects. Availability of any subject depends on the scheduling, program and student needs at the time. The receiving college or university determines the transferability of courses.

ADJUNCT Adjunct courses may be temporary or experimental and may be used to fulfill elective credit in programs that lead to a degree or diploma. Adjunct courses may not be used to fulfill or substitute for required or option courses in any degree or program.

GENERAL Noncore courses identified as freshman-sophomore courses.

OPEN Occupationally specific courses corresponding to courses in certain professional programs at four-year institutions.

VOC/TECH Occupationally specific courses. Transferability is generally limited. Only 16 credits can apply to the AA/AS degree.

CORE Traditional liberal arts courses in the first two years of a baccalaureate degree.

Example:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
<th>Lecture Hours</th>
<th>Lab Hours</th>
<th>Practicum Hours</th>
<th>Work Experience</th>
<th>Course Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACC 222</td>
<td>4</td>
<td>4</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>General</td>
</tr>
<tr>
<td>COST ACCOUNTING</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- **Course Name**: ACC 222
- **Course Description**: An introduction to accounting concepts of product costing systems. Topics include classification of costs, process costing, job order costing, joint and by-product costs and standard cost systems, with variable analysis. Prerequisite: ACC 132

COLLEGE PREPARATORY (COLL PREP) College preparatory and skill building courses. College Preparatory courses cannot be used to fulfill degree requirements.

(P/F) Indicates courses taken pass/fail.

PREREQUISITES Successful completion of a course or other criterion necessary for a student to succeed in a higher level course.

COREQUISITES A course that must be taken concurrently or prior to the course.

*An instructor may deny enrollment in or drop a student from a specific course if a course prerequisite has not been met.

- **ACC 111 INTRO TO ACCOUNTING**
  - **Course Type**: Open
  - **Course Description**: An introductory course in accounting fundamentals and procedures. Includes capturing and analyzing business data and financial statement preparation.

- **ACC 124 ACCOUNTING PROFESSIONALISM**
  - **Course Type**: Voc/tech
  - **Course Description**: Covers all aspects of accounting career goal-setting, developing prospective accounting employer lists, resume writing, job application forms, employment tests, personal appearance, interviewing and follow-up. Instructs in meeting protocol according to Roberts Rules of Order. Covers meeting presentation skills and report writing. Discusses the duties of an accounting professional to the community. Reviews office etiquette and common professional courtesy. (P/F)

- **ACC 131 PRINCIPLES OF ACCOUNTING I**
  - **Course Type**: General
  - **Course Description**: Introduces the student to the principles of accounting with emphasis placed on the users and uses of accounting information. The double-entry bookkeeping system is presented with a focus on the end result of the accounting cycle, the financial statement.

- **ACC 132 PRINCIPLES OF ACCOUNTING II**
  - **Course Type**: General
  - **Course Description**: A continuation of Principles of Accounting I. Introduces accounting procedures related to corporations, manufacturing and branch operations. Course also includes an introduction to capital budgeting, analysis of financial statements and decision-making by managers. Prerequisite: ACC 131

- **ACC 161 PAYROLL ACCOUNTING**
  - **Course Type**: Voc/tech
  - **Course Description**: Covers payroll laws, state and federal withholding taxes, state and federal forms, salary deductions including cafeteria insurance plans and pension plans and computerized payroll software packages. Prerequisite: ACC 131 or ACC 111

- **ACC 165 PAYROLL CERTIFICATION REVIEW**
  - **Course Type**: Voc/tech
  - **Course Description**: Covers fundamental payroll calculations and applications. Provides students with the basic knowledge and skills required to prepare for the Fundamental Payroll Certification (FPC) exam administered by the American Payroll Association. Recommended for payroll professionals.

- **ACC 191 FINANCIAL ANALYSIS**
  - **Course Type**: Voc/tech
  - **Course Description**: An analytical study of accounting information and financial statements. The course focuses on financial ratio analysis that is used to interpret data and reports for financial decision-making. Prerequisite: ACC 131

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
<th>Lecture Hours</th>
<th>Lab Hours</th>
<th>Prereq</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACC 193</td>
<td>3</td>
<td>3</td>
<td>0</td>
<td>ACC 132</td>
</tr>
</tbody>
</table>
| ACCOUNTING PROCEDURES/PROCUREMENT

- **ACC 193 ACCOUNTING PROCEDURES/PROCUREMENT**
  - **Course Type**: Voc/tech
  - **Course Description**: Generally Accepted Accounting Principles (GAAP) are emphasized. Topics include receivables, payables, banking records, document flow, internal control, planning, organizing, leadership, human relations, and business communications. Prerequisite: ACC 131

- **ACC 222 COST ACCOUNTING**
  - **Course Type**: Open
  - **Course Description**: An introduction to accounting concepts of product costing systems. Topics include classification of costs, process costing, job order costing, joint and by-product costs, and standard cost systems with variable analysis. Prerequisite: ACC 132

- **ACC 222 GOVT & NONPROFIT ACCOUNTING**
  - **Course Type**: Open
  - **Course Description**: An introduction to the accounting and reporting principles, standards and procedures applicable to federal, state and local government. Also includes nonprofit institutions such as hospitals and universities. Prerequisite: ACC 131

- **ACC 222 INCOME TAX ACCOUNTING**
  - **Course Type**: Open
  - **Course Description**: An introduction to personal income tax. Emphasizes computation of federal and state income taxes and preparation of tax forms. Prerequisite: ACC 131 or ACC 111

- **ACC 222 BUSINESS TAX**
  - **Course Type**: Voc/tech
  - **Course Description**: Business Tax focuses on federal income tax associated with the three principal business forms: corporations, both S and C partnerships and limited liability companies. Tax aspects affecting the determination of taxable income and loss as they apply to businesses are covered.
COURSE DESCRIPTIONS

ACC 272  **ACCOUNTING INFORMATION SYSTEMS**  
VOC/TECH  
4 3 6 0 0 0  
Identifies the information required by accountants as it relates to financial and managerial accounting. It provides an overview of systems design and development process. Prerequisite: ACC 132, CSC 110 or equivalent or instructor approval

ACC 281  **AUDITING**  
VOC/TECH  
3 3 0 0 0 0  
An introduction to auditing concepts, internal control procedures, preparation of audit programs and working papers, application of methods and procedures for conducting an audit. The legal and ethical responsibilities of auditors. Preparation of audit reports. Prerequisite: ACC 231

ACC 311  **COMPUTER ACCOUNTING**  
VOC/TECH  
3 2 2 0 0 0  
Emphasizes application of computerized financial software used in business. Topics include setting up a company, receivables, payables, inventory control, payroll, time tracking and job estimating. Prerequisite: ACC 131 or ACC 111

ACC 361  **ACCOUNTING SPREADSHEETS**  
VOC/TECH  
3 2 2 0 0 0  
Microcomputer operations with an emphasis on managerial uses. Includes topics in spreadsheet modeling, spreadsheet commands, manufacturing systems, budgeting and profit analysis. Prerequisite: ACC 131, CSC 110 or equivalent or instructor approval

ACC 380  **TAX ASSISTANCE INSTITUTE**  
VOC/TECH  
3 2 2 0 0 0  
An opportunity to participate in a volunteer income tax assistance program by applying classroom skills to actual experience. Includes training to provide community service of free tax assistance and preparation of basic tax returns for older, handicapped and low income taxpayers. (P/F) Prerequisite: ACC 261

ACC 392  **ACCOUNTING INTERNSHIP**  
VOC/TECH  
3 4 0 0 0 0 1 2 -1 6  
An opportunity to gain practical experiences through on-the- job training in an approved business or governmental office. May be taken for 3 or 4 credits. (P/F) Prerequisite: Successful completion of 11 hours of ACC courses. Corequisite: ACC 946

ACC 946  **ACCOUNTING CAREER SEMINAR**  
VOC/TECH  
1 1 0 0 0 0 0  
Designed to provide in-depth discussion of Accounting/Bookkeeping/Accounting Specialist work experiences. Prerequisite: Successful completion of 11 hours of ACC credit courses; permission of the department and demonstrable job readiness with computer literacy. Corequisite: ACC 932

ADM 105  **INTRO TO KEYBOARDING**  
VOC/TECH  
1 0 2 0 0 0 0  
Basic instruction on a personal computer to learn the touch system for the alphabetic keyboard, number keyboard and ten-key numeric pad.

ADM 131  **OFFICE CALCULATORS**  
VOC/TECH  
1 0 2 0 0 0 0  
Electronic calculator operations. Emphasis on speed and accuracy. Includes topics in addition, subtraction, multiplication and division; also the use of constants, chain computations and pronations.

ADM 138  **DATA ENTRY**  
VOC/TECH  
3 0 6 0 0 0 0  
Competency-based course to give students an introduction to current practices, equipment and various job-related applications in data entry. The main focus is on speed and accuracy in entering data in a terminal. Recommend keyboarding skills of at least 30 NWPMP.

ADM 154  **BUSINESS COMMUNICATION**  
VOC/TECH  
3 3 0 0 0 0 0  
Principles and procedures of effective business communication. The student is required to be computer-literate as computer software programs are used to develop communication skills for office correspondence and presentations. Recommend keyboarding skills of at least 25 NWPMP. Prerequisite: ADM 157, BCA 212

ADM 157  **BUSINESS ENGLISH**  
VOC/TECH  
3 3 0 0 0 0 0  
The fundamentals of proofreading, grammar, spelling, punctuation, word usage, capitalization, abbreviations and number usage.

ADM 162  **OFFICE PROCEDURES**  
VOC/TECH  
3 2 2 0 0 0 0  
Office Procedures is the integration of knowledge and skills needed to function in an office environment. Topics include telecommunication techniques, computerized management software, and compliance. Recommend keyboarding skills of at least 25 NWPMP. Prerequisite: ADM 157, BCA 212

ADM 164  **ADMINISTRATIVE OFFICE APPL**  
VOC/TECH  
3 2 2 0 0 0 0  
This course incorporates simulated office activities into realistic workplace integration. Students use integration software to complete specialized tasks. Workplace basic skills including interpersonal skills, communication, teamwork, creative thinking and problem-solving will be developed. Prerequisite: ADM 162, BCA 213

ADM 168  **VETERINARY OFFICE PROCEDURES**  
VOC/TECH  
2 1 2 0 0 0 0  
Integration of knowledge and skills needed to function in a veterinarian office environment. Topics include ethics, customer relations, telecommunications techniques, scheduling and management software, and compliance.

ADM 208  **LEGAL TERMINOLOGY**  
VOC/TECH  
3 3 0 0 0 0 0  
Provides training in spelling, defining and pronouncing terms common in the legal field.

ADM 215  **MEDICAL OFFICE PROCEDURES**  
VOC/TECH  
3 3 0 0 0 0 0  
This course presents basic administrative skills in a medical facility. Study includes identification of medical specialties, medical law, ethics and professionalism. Administrative skills and responsibilities are studied to include telephone techniques, appointment scheduling and management of medical records. Government regulatory agencies for healthcare facilities are identified, to include HIPAA and mandate reporter. Students are introduced to medical office computerized management software. Prerequisites: HSC 120 and BCA 137

ADM 259  **PROFESSIONAL DEVELOPMENT**  
VOC/TECH  
3 3 0 0 0 0 0  
Designed to make students aware of their personal strengths and identity areas for improvement. Concentrates on helping students develop marketable personal and professional skills. Presents strategies to assist students in maintaining employment and in demonstrating a professional image and work behavior.

ADM 265  **SUPERVISED PRACTICAL EXP.**  
VOC/TECH  
3 2 2 0 0 0 0  
Practice experience through on-the-job training in an approved business setting. Tasks will be consistent with students’ career objectives, skills and knowledge. (P/F) Prerequisite: ADM 157, BCA 133, BCA 152. Corequisite: ADM 937

ADM 300  **CPS REVIEW SEC. I ECON & LAW**  
VOC/TECH  
1 1 0 0 0 0 0  
Section I assists students to pass Part 1 of the Certified Professional Secretary Examination by reviewing economic, accounting and business law fundamentals. In addition to one hour of credit, students will be awarded 1.5 CEUs.

ADM 305  **CPS REVIEW SEC. II OFFICE SYS**  
VOC/TECH  
1 1 0 0 0 0 0  
Section II assists students to pass Part 2 of the Certified Professional Secretary Examination by reviewing office technology, administration and communication. In addition to one hour of credit, students will be awarded 1.5 CEUs.

ADM 310  **CPS REVIEW SEC. III MANAGEMENT**  
VOC/TECH  
1 1 0 0 0 0 0  
Section III assists students to pass Part 3 of the Certified Professional Secretary Examination by reviewing behavioral science in business and human resource management. In addition to one hour of credit, students will be awarded 1.5 CEUs.

ADM 937  **PROF OFFICE CAREERS SEMINAR**  
VOC/TECH  
1 1 0 0 0 0 0  
An examination of topics relevant to the office internship experience, sharing workplace problems encountered and the solutions found to those problems. Prerequisite: ADM 157, BCA 133, 212. Corequisite: ADM 265

ADM 126  **PASPORT TO ADM NURSING**  
VOC/TECH  
2 1 2 0 0 0 0  
Prepares students for a successful transition to the ADN program. Focuses on curriculum design, knowledge components, student expectations, study/time management skills, PN to RN role changes, application of nursing process with emphasis on health assessment and nursing skills across the life span. Prerequisite: Acceptance into the Advanced Standing Nursing Program

ADN 416  **FAMILY HEALTH NURSING**  
OPEN  
5 3 0 6 0 0  
Provides an in-depth study of family health nursing, including childbearing, parenting, and illnesses of children and adolescents. Concepts of acute and chronic illness, disability and dying are included. Prerequisite: PNN 605, 606, 351, ENG 105, SPC 126, BIO 732 or 187. Corequisite: ADN 611

ADN 474  **MENTAL HEALTH NURSING**  
OPEN  
5 3 0 6 0 0  
Provides an in-depth study of mental health nursing, including mental health needs, mental illness and addictive disorders. Communication and principles of group process are emphasized. Prerequisite: PNN 605, 606, 351, ENG 105, SPC 126, BIO 732 or BIO 187. Corequisite: ADN611

ADN 551  **ADULT HEALTH NURSING**  
OPEN  
7 4 0 9 0 0  
Provides an in-depth study of nursing care and therapeutic interventions for adults with complex health problems. The student applies management, collaboration and clinical decision-making skills. Prerequisite: ADN 611, 416, 474, SOC 110

ADN 611  **PROFESSIONAL NURSING PRACTICE**  
OPEN  
2 1 2 0 0 0 0  
Introduces the role of the professional registered nurse, including comprehensive planning, client care management, collaborative relationships and performance of complex skills. Prerequisite: PNN 605, 606, 351, ENG 105, SPC 126, BIO 732 or BIO 187
### COURSE DESCRIPTIONS

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>AGA 381</td>
<td>CROP SCOUTING</td>
<td>The course develops an understanding of the factors that affect plant growth. Plant nutrients are considered as students gain experience in identifying major and minor nutrient deficiency symptoms in plants by means of soil tests, plant tests and observations.</td>
</tr>
<tr>
<td>AGB 101</td>
<td>AGRICULTURAL ECONOMICS</td>
<td>Focus on the futures market and how it can be used as a marketing tool. Major areas of study include hedging, speculation, price forecasting, spreading, technical and fundamental analysis. The use of options as an economical marketing tool will be covered.</td>
</tr>
<tr>
<td>AGB 330</td>
<td>FARM BUSINESS MANAGEMENT</td>
<td>Includes management problem identification and solution using business and economic principles, enterprise and total farm budgeting, adjusting to uncertainty, investment decisions, farm business organization, farm records and business analysis.</td>
</tr>
<tr>
<td>AGB 371</td>
<td>AGRIBUSINESS MANAGEMENT</td>
<td>A study of the role and organization of several aspects of agribusiness including financial management and control, marketing, operation and resource management in agribusiness.</td>
</tr>
<tr>
<td>AGB 802</td>
<td>AGRIBUSINESS INTERNSHIP I</td>
<td>Students will have the opportunity to experience an agricultural career through participation in an internship experience. The internship will provide career exploration through a structured evaluation. Prerequisite: AGS 115 or AGA 114</td>
</tr>
<tr>
<td>AGB 812</td>
<td>AGRIBUSINESS INTERNSHIP II</td>
<td>Students will have the opportunity to participate in an internship within the agribusiness industry. The internship may provide experiences within the agronomic, animal science, management, sales and service sectors that affect the food, fiber and environmental sciences. Prerequisite: AGB 802</td>
</tr>
<tr>
<td>AGH 104</td>
<td>FLORAL DESIGN II</td>
<td>An advanced class in commercial floral design, flower shop organization and management. Advanced wedding work, funeral work and commercial flower arrangements will be taught. Prerequisite: AGH 103</td>
</tr>
<tr>
<td>AGH 111</td>
<td>INTRO TO TURFGRASS MANAGEMENT</td>
<td>The study of soil and turf relationships as to planning, seed bed preparation, seed selection, fertilization, sowing and establishing of turf and lawn. The student receives practical experience in starting and maintaining new lawn areas. Prerequisite: AGH 221, AGA 154, 157</td>
</tr>
<tr>
<td>AGH 120</td>
<td>HERBACEOUS PLANT MATERIALS</td>
<td>The identification, morphology, landscape use and culture of native and non-native plants of the Upper Midwest. Emphasis on early and mid-season perennials and annuals. The following courses should be completed or taken currently: AGH 155, 123</td>
</tr>
<tr>
<td>AGH 123</td>
<td>WOODY PLANT MATERIALS</td>
<td>The identification, morphology, landscape use and culture of native and non-native woody plants of the Upper Midwest. First 10 weeks, emphasis on deciduous plants. Last 5 weeks, emphasis on evergreens. Corequisite: AGH 159</td>
</tr>
<tr>
<td>AGH 132</td>
<td>INTRODUCTION TO GREENHOUSE</td>
<td>An introduction to greenhouse structures, heating and environmental control systems and watering. Winter and spring commercial pot plants, cut flowers and bedding plant crops will be explored vocationally in the college greenhouse. Prerequisite: AGH 221, AGA 157, 154</td>
</tr>
<tr>
<td>AGH 133</td>
<td>GREENHOUSE PROD TECHNIQUES</td>
<td>Greenhouse maintenance, nutrition, watering, cooling systems and pest control shall be developed further in college greenhouse facilities. Summer and fall crops will be grown by students. Prerequisite: AGH 132</td>
</tr>
<tr>
<td>AGH 142</td>
<td>CONSTRUCTION, SAFETY &amp; MAINT.</td>
<td>Principles and practices of residential landscape construction. EmCOMPASSES process from initial client contact to installation of plant material and hardscape. Laboratory work involves landscape installation using landscape materials and techniques.</td>
</tr>
<tr>
<td>AGH 154</td>
<td>RESIDENTIAL LANDSCAPE DESIGN</td>
<td>Fundamentals of landscape design for homes are presented. Introduction to principles of landscaping as they apply to residential landscaping. Students are given opportunities to draw basic residential landscape plans. Prerequisite or Corequisite: AGH 159, 123 must be taken with or prior to this course.</td>
</tr>
<tr>
<td>AGH 155</td>
<td>LANDSCAPE DESIGN II</td>
<td>Course will include design of residential, commercial, public areas and annual and perennial flower beds. Use of landscape construction materials in design and materials and labor estimates will be developed. Prerequisite: AGH 154, 159, 123. Corequisite: AGH 120</td>
</tr>
<tr>
<td>AGH 160</td>
<td>IRRIGATION SYSTEMS</td>
<td>A study of the design, installation, use and maintenance and repair of the different types of irrigation systems used in the production of a wide variety of horticulture crops. Irrigation system components, materials and estimates of installation, maintenance and operation costs will be discussed. Prerequisite: AGH 154, 157, AGH 111</td>
</tr>
<tr>
<td>AGH 211</td>
<td>ADVANCED TURFGRASS MANAGEMENT</td>
<td>Turf management practices on golf and recreation areas with practical experience in maintaining turf on outdoor campus facilities. Prerequisite: AGH 111</td>
</tr>
<tr>
<td>AGH 221</td>
<td>PRINCIPLES OF HORTICULTURE</td>
<td>A course designed to introduce the student to the principles of botany that are basic to plant life. Topics covered include plant cell chemistry, cell structure, functions, photosynthesis and transpiration.</td>
</tr>
<tr>
<td>AGH 233</td>
<td>PLANT PROPAGATION I</td>
<td>An introduction to plant propagation with emphasis on grafting, herbaceous and hardwood cuttings, and greenhouse and nursery seeds. Propagation schedules, equipment, structures and growth regulators will be discussed. Prerequisite: AGH 221, AGA 154, 157</td>
</tr>
</tbody>
</table>
COURSE DESCRIPTIONS

AGH 241  21200  SPORTS TURF  VOC/TECH
Introduction to the variety of sports contests played on turfgrass fields. Students will study the sport, site selection and preparation, turfgrass species selection, establishment and maintenance of the field. Precompetition practices of field layout along with post-competition practices of repair and field recovery will be discussed. Prerequisite: AGH 111, AGA 154, 157

AGH 251  22000  INSECTS AND DISEASES  VOC/TECH
Identification of diseases and insects that frequently infest horticultural crops and plant materials. Structure, function and life cycles of these pests will be studied with environmental conditions favoring development. Chemical, organic, biological and mechanical control methods will be presented. A collection will aid in the ID process.

AGH 262  32200  FRUIT AND VEGETABLE SCIENCE  VOC/TECH
A study of tree fruits, small fruits, vegetable culture, including varietal selection, pruning, fertilizing, disease and insect control programs. Prerequisite: AGH 221, AGA 154, 157

AGH 272  32200  NURSERY PRODUCTION I  VOC/TECH
Introduces the student to site selection, equipment and supplies with an introduction to field production, harvesting and marketing. Basic nursery and landscape skills will be developed on and off campus. Prerequisite: AGH 221, AGA 154, 157

AGH 283  22000  PESTICIDE APPLICATION CERTIFIC  VOC/TECH
Types of chemicals will be identified and how to use and apply them properly will be studied. The safe handling of chemicals and calibration of spray equipment will be covered. Includes study of core manual and category for commercial pesticide license.

AGH 292  33000  GARDEN CENTER MANAGEMENT  VOC/TECH
Display, promotion and merchandising in the modern garden center will be stressed. Problems of distribution functions of marketing and their costs will be studied. Management’s role in organizing a business and financial planning will be discussed.

AGH 805  20000  HORTICULTURE INTERNSHIP I  VOC/TECH
Experience in a business setting related to the student’s career objective. Taken over a five-week period. (P/F) Prerequisite: AGH 132, 111, 123

AGH 815  20000  HORTICULTURE INTERNSHIP II  VOC/TECH
An opportunity for the student to gain employment experience in their specialization. In many instances they will continue as full-time employees upon completion of the program. Taken over a five-week period. (P/F) Prerequisite: AGH 805

AGM 335  33000  PETROLEUM PRODUCTS IN AG  VOC/TECH
Designed to acquaint students with the petroleum industry and its terminology. Major areas of study will be fuels and lubricants with emphasis on applications and selection, equipment operations, storage and handling procedures and federal regulations.

AGP 333  32200  PRECISION AGRICULTURE APP.  VOC/TECH
This course is an introduction to the general principles of Precision Agriculture. Major topic areas will include Global Positioning Systems (GPS), yield mapping, Geographic Information Systems (GIS) and remote sensing equipment.

AGS 113  33000  SURVEY OF THE ANIMAL INDUSTRY  VOC/TECH
An analysis of the livestock industry with emphasis on reproduction, inheritance, performance testing, selection and marketing.

AGS 222  32200  SURVEY OF AQUACULTURE INDUSTRY  VOC/TECH
A study of the ecology and management of aquaculture systems with emphasis on fish production. A focus on environmental issues relating to water quality will be implemented through laboratory exercises.

AGS 226  33000  BEEF CATTLE SCIENCE  VOC/TECH
The practical application of technical information to life-cycle beef production with emphasis on cow-calf production and feedlot management. Prerequisite: Permission of instructor or AGS 319, 113

AGS 242  33000  ANIMAL HEALTH  VOC/TECH
A survey of diseases of large domestic animals, including discussion of causes, transmission, prevention and control.

AGS 245  11000  INTRODUCTION TO ANIMAL DISEASE  VOC/TECH
This course covers the disease processes, primary and contributing causes, treatments and prevention of common medical and surgical diseases in domestic animals. Prerequisite: AGV 120

AGS 319  33000  ANIMAL NUTRITION  VOC/TECH
The identification and study of feed ingredients, nutrients and additives. Determine feed requirements of various livestock classes. Ration balancing and feed formulation are computed.

AGS 323  33000  ANIMAL NUTRITION II  VOC/TECH
The practical application of feeding principles. An in-depth study of the various nutrients, their requirements and uses. An analysis of research feeding trials, research procedures and manufacturing terminology. Prerequisite: AGS 319

AGV 120  11000  VETERINARY MEDICAL TERMINOLOGY  VOC/TECH
Course covers the origins of common medical terms used in the veterinary field. Using analysis of word parts, the student will be able to determine the definition of medical terminology. Prerequisite: Instructor approval for program admission

AGV 124  10200  INTRO TO VETERINARY TECHNOLOGY  VOC/TECH
This course introduces the basics of animal identification, husbandry, behavior, safety and healthcare to the student. Career opportunities in animal-related fields are explored. The student will also complete the American Red Cross Animal First Aid and CPR certification.

AGV 139  22000  ADV VETERINARY PHARMACOLOGY  VOC/TECH
This course is designed to provide advanced knowledge in specific medication classification, usage and effects. Prerequisite: AGV 139

AGV 141  42400  ANESTHESIA/SURGICAL ASSISTANCE  VOC/TECH
This course is designed to introduce the student to the common surgical procedures performed in the veterinary clinic. Emphasis is placed on sanitation, patient observation, surgical preparation, assisting in anesthesia, and post-operative patient management. Prerequisite: AGV 120, 124, 141

AGV 164  21200  CLINICAL MGMT DOMESTIC SPECIES  VOC/TECH
This course covers the management and husbandry of animals housed in a hospital or shelter situation. Proper kennel cleaning & disinfection, record-keeping, monitoring of health parameters, nutrition, bathing, administration of common medications, and diagnostic sampling. Prerequisite: AGV 120

AGV 165  21200  CLINICAL MGMT EXOTIC SPECIES  VOC/TECH
This course is designed to introduce the common species, husbandry procedures and basic nutrition, restraint and handling, common diseases, diagnostic procedures and medications used in various laboratory and exotic pet settings. Prerequisite: AGV 120
AGV 166 3 1 4 0 0 0  
VETERINARY NURSING CARE  VOC/TECH  
Introduces the fundamentals of animal nursing, including handling, restraint, patient history and admissions and emergency handling. Prerequisite: AGV 129, BIO 173

AGV 172 3 2 2 0 0 0  
LARGE ANIMAL MEDICINE/SURGERY  VOC/TECH  
This course is designed to introduce common species, husbandry and management procedures, proper restraint and handling, common procedures, medication, administration and surgical concerns for common species of domestic large animals. Prerequisite: AGV 160

AGV 180 2 1 2 0 0 0  
VETERINARY RADIOLOGY  VOC/TECH  
This course is designed to introduce the student to radiologic imaging. Topics include safety, patient positioning, processing of film, proper machine use and quality control. Prerequisite: AGV 120, 124

AGV 266 2 1 2 0 0 0  
ADV VETERINARY NURSING CARE  VOC/TECH  
Continues Veterinary Nursing Care with emphasis on advanced veterinary nursing procedures. Prerequisite: AGV 166

AGV 932 2 1 2 0 0 0  
VET TECHNOLOGY INTERNSHIP  VOC/TECH  
Internship experience within a veterinarian-related business with an emphasis on animal care procedures. Prerequisite: AGV 134, 141

ANT 100 3 3 0 0 0 0  
INTRODUCTION TO ANTHROPOLOGY  CORE  
This course is an introduction to the comparative study of humankind from biological and cultural perspectives. It surveys anthropological theory, methods and major findings regarding human origins and variations, cultural development and change, cultural systems, and cross-cultural comparisons of people throughout the world.

ANT 105 3 3 0 0 0 0  
CULTURAL ANTHROPOLOGY  CORE  
The study of human cultures and their diversity. Those who take this course should develop some understanding not only of the differences that people all over the world experience in their lives and in their perceptions of others, but also those elements that are common to the human experience. This course will entail application of principles and theory to various aspects of field work. Completing Introduction to Anthropology would be helpful; however, it is not a requirement.

ANT 110 3 3 0 0 0 0  
FACES OF CULTURE  GENERAL  
A television course in cultural anthropology that presents culture as the expression of human values, behavior and social organization existing in unique and varied forms throughout the world. The course focuses on culture as an adaptive mechanism that provides for the survival of the species.

ANT 125 3 3 0 0 0 0  
APPLICATIONS OF ANTHROPOLOGY  GENERAL  
Applied anthropology uses anthropological and interdisciplinary theory and research to address social issues. This course introduces students to basic concepts in four-field anthropology, with an emphasis on cultural anthropology, and it provides an overview of major specializations and current research topics. Students will engage in primary, community-based research through a course project on a topic of choice within one applied specialty. Students in all programs of study at DMACC may benefit through better understanding of qualitative research processes, the broad array of social issues that applied anthropologists study and critical thinking and writing that are necessary to problem-solving and understanding of culture and society. Prerequisite or Corequisite: ANT 100 or 105 or instructor approval

APP 111 3 3 0 0 0 0  
VISUAL MERCHANDISING & DESIGN  VOC/TECH  
Focus will be on an application-oriented study of natural and manufactured fibers. Popular weaves, technologies used to produce, qualities achieved, and costs incurred will be analyzed. Printing and dyeing processes, in addition to the finishes available today, will be studied.

APP 171 3 3 0 0 0 0  
TEXTILES  VOC/TECH  
Focus will be on an application-oriented study of natural and manufactured fibers. Popular weaves, technologies used to produce, qualities achieved, and costs incurred will be analyzed. Printing and dyeing processes, in addition to the finishes available today, will be studied.

APP 230 3 3 0 0 0 0  
FASHION COORDINATION & PROMOTI  VOC/TECH  
Focus is on researching, analyzing and forecasting fashion trends. Information on emerging fashion trends is communicated through a PowerPoint computer presentation. Use of this information results in creation of a promotional plan to establish fashion leadership. Prerequisite: APP 111

APP 250 3 3 0 0 0 0  
DESIGN CONCEPTS  VOC/TECH  
Includes a study of the history of fashion design, the effective use of design principles and analysis of future fashion trends. New industry-based computer design software will be used to design contemporary fashion apparel for women, men or children.

APP 260 3 3 0 0 0 0  
FASHION ANALYSIS AND DESIGN  VOC/TECH  
Focus is on researching, analyzing and forecasting fashion trends. Information on emerging fashion trends is communicated through a PowerPoint computer presentation. Use of this information results in creation of a promotional plan to establish fashion leadership. Prerequisite: APP 111

APP 270 3 3 0 0 0 0  
FASHION BUYING  VOC/TECH  
Fashion moves quickly and the buyer must be in tune with current trends and suppliers who can provide the best quality merchandise, delivery and pricing. Vendor analysis, open-to-buy and timing are studied, including the development of a six-month merchandise plan.

APP 291 1 0 2 0 0 0  
FASHION STUDY TOUR  VOC/TECH  
The student will participate in a supervised study tour, location to be announced, in which a concentrated time will be spent touring a market center and researching a variety of fashion businesses from manufacturing and marketing to merchandising, promoting and selling apparel. Prerequisite: APP 260

ARC 114 5 2 6 0 0 0  
ARCHITECTURAL DRAFTING I  VOC/TECH  
Practical application of the basic skills of drafting involving the necessary thought process. A complete set of residential drawings will be developed by hand—involving plans, elevations, sections and details.

ARC 116 2 2 0 0 0 0  
CONSTRUCTION ESTIMATING  VOC/TECH  
An orderly process of accounting for the items involved in the construction project.

ARC 127 5 2 6 0 0 0  
ARCHITECTURAL DRAFTING II  VOC/TECH  
This course will apply practical application of the basic skills of drafting involving the mechanics and the necessary thought process. Prerequisite: ARC 114 and CAD 119
COURSE DESCRIPTIONS

ARC 128  52600  ARCHITECTURAL DRAFTING III  VOC/TECH
Drawings will be developed of a small commercial building using Building Information Modeling software. Prerequisite: ARC 127

ARC 165  33000  MATERIALS & ASSEMBLIES I  VOC/TECH
An introduction to building materials and assemblies through the Construction Specifications Institute’s MasterFormat accounting and management system.

ARC 167  33000  MATERIALS & ASSEMBLIES II  VOC/TECH
An introduction to building materials and assemblies through the Construction Specifications Institute’s MasterFormat accounting and management system. Prerequisite: ARC 165

ARC 190  31400  PRESENTATION GRAPHICS  VOC/TECH
Exploration into architectural presentation graphics, schematic and finish presentation styles. Students will have an option of media to produce presentation graphics for their portfolios. Prerequisite: ARC 127 or instructor permission

ART 101  33000  ART APPRECIATION  CORE
A general survey course that explores in chronological sequence many artists, their lives, styles and media. The student will use art to recognize global cultural diversity and connect to universal human experience as expressed through art.

ART 102  32200  ARTS FOR ELEMENTARY EDUCATION  GENERAL
Designed for students in education and recreation to assist them with design, construction, and planning for multiart forms and materials for instructional situations.

ART 133  30600  DRAWING  GENERAL
Lab study of tools and techniques necessary for entry-level visual arts in drawing. Emphasis on still life using gesture, contour, shape, plane, volume and value/tonal techniques. Basic drawing skills with pencil, charcoal and eraser are explored.

ART 136  30600  LIFE DRAWING  GENERAL
Drawing and painting a live model. Emphasis on structure, movement and expression.

ART 143  30600  PAINTING  GENERAL
Acrylic painting with emphasis on still life, landscape and individual composition.

ART 148  30600  LANDSCAPE PAINTING  GENERAL
Landcape painting using any water-based media. Study of the elements of art to aid in composition and development of a personal painting style. Field trips will be required.

ART 173  30600  CERAMICS  GENERAL
Comprehensive “hands-on” introductory experience working clay. The discovery “process” of finding one’s unique sense of touch is stressed. Fundamental techniques demonstrated in hand-building and wheel-throwing. Concepts in ceramic art discussed, connecting cultures, artists and contemporary objects.

ART 174  30600  CERAMICS II  GENERAL
Series of forms, individual help from a professional artist. Topics in ceramics: the “figure,” large-scale works, architectural terra-cotta restoration, outdoor claybodies, building slide portfolio, photographing work, shows and galleries, kiln firing. Prerequisite: Instructor permission

ART 176  30600  TILEMAKING  GENERAL
Design and fabricate tiles for specific applications, while emphasizing critical processes of working with clay. Transforms two-dimensional drawings to pieces in three dimensions. Study new theories in “Visual Communication.”

ART 184  32200  PRINCIPLES OF PHOTOGRAPHY  OPEN
Students will learn the basic principles of photography. Topics will include basic camera operation, film developing, darkroom techniques and special effects. The camera will become an instrument to explore and communicate ideas, goals and visions effectively.

ART 186  32200  DIGITAL PHOTOGRAPHY  OPEN
Students will learn the basic principles of digital photography. Topics will include basic camera operation, composition, metering, computer tips and tricks, and shooting tips and tricks. The digital camera in conjunction with the computer will become instruments to explore visual communication effectively. This course requires an SLR digital camera, minimum 5.0 megapixels, capable of interchangeable lenses.

ART 195  33000  HISTORY OF PHOTOGRAPHY  GENERAL
Students will study the history, language and meaning of photography, including its evolving technology, notable contributors and reflection of our changing culture. Students will also learn about the social impact of photography as a news medium, the principles of photographic aesthetics and contemporary issues.

ART 226  32200  PHOTOGRAPHY I  GENERAL
Advanced principles of image making, printing and presentation will be explored with spirit and knowledge that is expected to engender an appreciation for photography, travel and the state of Iowa. Prerequisite: ART 184

ART 229  32200  PHOTOJOURNALISM  OPEN
Students will learn basic visual and technical aspects of photojournalism using a digital camera while photographing a series of general news, feature, performing arts, sports and community events. (This course uses digital cameras only.)

ART 291  32200  TRAVEL PHOTOGRAPHY  OPEN
Advanced principles of image making, printing and presentation will be explored with spirit and knowledge that is expected to engender an appreciation for photography, travel and the state of Iowa. Prerequisite: ART 184

ART 292  32200  STUDIO PHOTOGRAPHY  VOC/TECH
Students learn to arrange and compose a photograph in a deliberate process. Students learn to analyze the elements in a scene, arrange them and use artificial light for the desired effect. Projects test student imagination, creativity, technical skills and willingness to experiment while improving their photographic expertise. Prerequisite: ART 184, ART 186

ART 299  2-6 0 6-18 0  INDIVIDUAL PROJECTS  OPEN
Students will have the opportunity further develop their photographic expertise in one or more of the following photography classifications: Architectural, Banquet, Postcards/Marketing Publications, Business Portraits, Fine Arts, Fashion, Furniture, Industrial, Illustrative, Photomurals, Public Relations, Conventions/Special Events, Educational, Weddings. Students meet with instructor for project review once a week until project is completed. This course is repeatable up to 6 credits. Prerequisite: ART 226, ART 289, ART 291, ART 292

ART 929  54200  AMERICAN SIGN LANGUAGE I  CORE
This course is designed for students who have no knowledge of American Sign Language. Topics to be introduced include: ASL Linguistic features, cultural protocols and core vocabulary enabling students to function in basic ASL conversation: asking/answering questions, introductions and exchanging personal information, discussing family, friends and surroundings.
COURSE DESCRIPTIONS

ASL 181 54200
AMERICAN SIGN LANGUAGE II
CORE
This course expands the basic principles presented in ASL I. ASL II teaches students to use linguistic features, cultural protocols, and core lexical items to function in basic ASL conversations that include ASL grammar for giving directions, describing, making requests, talking about family, occupations and routines, and attributing qualities to others. Prerequisite: ASL 151 or instructor permission

ASL 251 54200
AMERICAN SIGN LANGUAGE III
CORE
This course expands the basic principles presented in ASL II. ASL III focuses on features of time, subject/ object, classifiers, nonmanual behaviors and finger spelling (including numbers and loan signs). In addition, ASL semantics and syntax (including conversational regulators) will be introduced. Prerequisite: ASL 181 or instructor permission

ASL 291 54200
AMERICAN SIGN LANGUAGE IV
CORE
This course expands the principles in ASL III. The course focuses on different registers of ASL discourse and the use of space in discourse. Most of the work in this course will involve students' production of appropriate, accurate ASL discourse. Areas of vocabulary development include: contextually sensitive vocabulary (e.g., human sexuality, AIDS), national and world events, politics. Prerequisite: ASL 251 or instructor permission

ASM 150 11000
COMMUNICATION WITH THE ELDERLY OPEN
This course will introduce strategies and concepts to improve communication with the elderly population. Prerequisite: Instructor approval

ASM 155 11000
IMPACT OF DEMOGRAPHICS OPEN
This course will address demographic changes in the elderly population and the impact on society. Prerequisite: Instructor approval

ASM 160 11000
ASPECTS OF AGING OPEN
This course will examine the physiological, biological and psychological changes as they relate to the aging process. Prerequisite: Instructor approval

ASM 165 11000
HEALTHY AGING OPEN
This course will examine the research of healthy aging and the results of improving the quality of life in advancing years. Prerequisite: Instructor approval

ASM 180 11000
CULTURAL DIVERSITY OPEN
This course will explore cultural diversity as it relates to race, national origin, gender and culture in the aging population. Prerequisite: Instructor approval

ASM 200 11000
DEPRESSION, DEATH & GRIEVING OPEN
This course will cover depression, death, loss and the grieving process for both the family and the professional caregiver. Prerequisite: Instructor approval

ASM 238 33000
FINANCIAL MANAGEMENT IN AS OPEN
Emphasis on financial practices in organizations that provide health services to seniors. Review of financial planning, budgeting, profit/loss statements, philanthropic practices, non-profit management and the regulatory landscape. Prerequisite: ASL 181

ASM 239 22000
INFO SYSTEMS IN HEALTHCARE OPEN
Emphasis will be placed on the analysis of information technology needs and the development of methods to meet these needs. Fundamental components of computer and computer systems will be examined, including specialized information management systems in healthcare.

ASM 251 22000
GOVERNANCE OF NF/SNF OPEN
Emphasis on the changing dynamics of long-term care and the regulatory system. Special attention will be given to the federal and state regulations that govern the long-term healthcare services. This will include the agencies that originate, implement and monitor the regulations.

ASM 252 22000
GOVERNANCE OF SUPPORTED LIVING OPEN
An introduction to the assisted living facility mission, tenant care issues, management, staffing and organization. Includes topics in legislative changes and updates, governance, funding, grant writing, landlord/tenant law and licensure exam preparation.

ASM 253 20009
LTC PRACT: PSYCHOSOCIAL NEEDS OPEN
During this practical experience, the student will investigate the policies, procedures and techniques used to meet the psychosocial needs of clients residing in nursing care facilities. Special emphasis will be placed on the role and responsibilities of the administrator in assuring client psychosocial needs are met.

ASM 254 20009
LTC PRACT: PHYSICAL NEEDS OPEN
During this practical experience, the student will investigate the policies, procedures and techniques used to meet the physical and environmental needs of clients residing in nursing care facilities. Special emphasis will be placed on the role and responsibilities of the administrator in assuring client physical and environmental needs are met.

ASM 255 20009
LTC PRACT: ADMINISTRATION OPEN
During this practical experience, the student will investigate the policies, procedures and techniques used to meet the administrative and business needs of nursing care facilities. Special emphasis will be placed on the administrative style used by the administrator in carrying out his/her roles and responsibilities.

ASM 256 20008
AGENCY EXPERIENCE OPEN
During this practical experience, the student will investigate a senior services agency. The student will identify the purpose of the business, client needs, funding and techniques to evaluate the service delivery system. In addition, the student will pay special attention to the role and responsibilities of the administrator or manager in the operation of the agency.

ASM 257 21000
ASM CAPSTONE
A capstone is a culminating project that incorporates a student’s learning from both classroom and practical experiences. The capstone should include a project of substantial value and importance with　the student. Students will invest potential capstone projects with instructor.

ASM 274 33000
LAW & ETHICS IN HEALTHCARE OPEN
An introduction to law and its relationship to senior healthcare services. The course is designed to provide a basic background in law and ethics by defining the law, the court structure and its procedures and exploring various legal and ethical issues related to long-term healthcare services.

ASM 278 33000
MANAGEMENT IN SENIOR CARE SERV OPEN
Relates fundamental management principles in the senior care setting. Focuses on management processes and organizational behavior in senior care organizations, healthcare facilities and other senior health services agencies.

ASM 279 33000
HEALTHCARE HUMAN RESOURCES OPEN
Study of policies, procedures and the processes in human resource planning. This would include securing, developing and maintaining human resources, labor laws, and employee/management rights in healthcare services settings.

ASM 280 22000
HEALTHCARE DELIVERY SYSTEMS OPEN
Provides a comprehensive overview of the healthcare delivery systems and services. Includes studies in access and financing healthcare services and evaluating the delivery of care.

ASM 282 22000
AGING SERVICES OPEN
Aging Services relates physical, psychological and sociological needs of seniors to services provided in the continuum of care setting. Includes the services in a therapeutic milieu creating a home environment that includes nursing, dietary, environmental, activities and social services.

ASM 283 22000
AGING POLICIES & GOV PROGRAMS OPEN
Class examines aging policies and government programs at the federal and state levels. Various agencies, advocacy groups and funding sources are investigated.

ASM 291 42008
ACTIVITY COORDINATOR OPEN
This course is designed to prepare persons to work as activity coordinators in the continuum of care communities. This would include the following settings: skilled care, healthcare, assisted living programs, adult day and residential care. Topics will include understanding residents’ needs, rights and choices and providing appropriate activities. The course will also address resident-centered care, regulatory requirements and the survey process. The course has been approved by the Iowa Department of Health and meets their requirements.

ASM 295 33000
DEATH AND DYING OPEN
An examination of death and the dynamics relating to the grief process, its foundational components, its varied characteristics and its impact upon the bereaved, with special emphasis upon appropriate resolution and adjustment.

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COURSE DESCRIPTIONS

ASM 800 11 000 OPEN
The seminar will meet twice to discuss topics, issues and methods for applying the knowledge acquired from the modules as they relate to the elderly population. Prerequisite: Instructor approval

ASM 805 11 000 OPEN
The seminar will meet twice to discuss topics, issues and the application of knowledge from the modules as they relate to the elderly population. Prerequisite: Instructor approval

ATC 320 3 0 00 18 V/O/T/CH
TECHNICAL INTERNSHIP I
The technician will work in a participating dealership. The work will be full-time approximately 40 hours per week. The tasks will be consistent with the technician's ability and previous course work. A task list will be issued to each dealer. ATC 328 and ATC 329 are required the same semester.

ATC 328 4 3 2 00 V/O/T/CH
CHRYSLER ELECTRONICS REPAIR
Instruction in the diagnosis, repair and service of electrical and electronic components and accessories used on current Chrysler vehicles. Prerequisite: ATC 312, MAT 772

ATC 330 3 0 0 0 18 V/O/T/CH
TECHNICAL INTERNSHIP II
Work experience at a participating dealership. The tasks will be consistent with the technician's ability and previous course work. Prerequisite: ATC 328, 329

ATC 335 5 3 4 00 V/O/T/CH
SERVICE/REPAIR & ELECTRONICS
Principles and operations of Chrysler engines. Service procedures and engine component repair or replacement will be emphasized. Diagnosis of engine problems will also be covered. Prerequisite: ATC 317

ATC 336 3 1 4 00 V/O/T/CH
CHRYSLER FUEL SYSTEMS
A course designed to acquaint the student with basic fuel system principles. Instruction will be offered in the theory, service, repair and adjustment of automotive fuel systems. Prerequisite: ATC 328

ATC 340 3 0 0 0 18 V/O/T/CH
TECHNICAL INTERNSHIP III
Work experience at a sponsoring dealership. The tasks will be consistent with the technician's ability and previous course work. Prerequisite: ATC 335

ATC 346 5 3 4 00 V/O/T/CH
CHRYSLER ENGINE PERFORMANCE
Diagnosis and service of microprocessor-controlled fuel and injection systems. Oscilloscopes, engine analyzers, digital meters and other high-technology instruments will be used. Prerequisite: ATC 335, 336

ATC 347 3 1 4 00 V/O/T/CH
CHRYSLER HEATING & AC
Theory and operation of Chrysler air conditioning systems leading to the diagnosis, service and repair of current models of Chrysler vehicles. Prerequisite: ATC 312, 317

ATC 350 3 0 0 0 18 V/O/T/CH
TECHNICAL INTERNSHIP IV
Work experience at a participating dealership. Tasks will be consistent with the technician’s ability and previous course work. Prerequisite: ATC 340

ATC 354 4 2 4 00 V/O/T/CH
CHRYSLER MANUAL DRIVE TRAINS
Provides an understanding of the principles of operation in manual drive trains including manual transmissions, transaxles, front and rear differentials, drive shafts and transfer cases. Proper diagnosis, service and repair procedures of these systems are studied and practiced. Prerequisite: ATC 340

ATF 312 5 3 4 00 V/O/T/CH
Admission to Automotive Student Service Ed Training (ASSET) and ATF 328.

ATF 317 3 2 2 00 V/O/T/CH
FORD Shop Fund & Minor SVC
A study of dealership organizational structure as it relates to the technician. Use of service manuals, electronic troubleshooting manuals and service Bulletins are practiced. Also provides entry-level automotive task competencies.

ATF 320 3 0 0 0 18 V/O/T/CH
TECHNICAL INTERNSHIP I
Work experience at a sponsoring dealership. The tasks will be consistent with the technician's ability and previous course work. Prerequisite: ATF 340

ATF 326 3 2 2 0 0 V/O/T/CH
FORD AUTOMOTIVE CLIMATE CTRL
Theory and operation of Ford Motor Company air conditioning, heating and air distribution systems leading to the diagnosis, service and repair of current models of vehicles. Prerequisite: Admission to Automotive Student Service Ed Training (ASSET) and ATF 312.

ATF 328 5 3 4 00 V/O/T/CH
FORD ELECTRONIC SYSTEMS DIAG
Instruction in the operation and diagnosis/repair of electronic components and systems on current Ford Motor Company vehicles. Required: Admission to Automotive Student Service Ed Training (ASSET), and ATF 330, 332, 336, 337, PHY 710

ATF 330 4 2 4 00 V/O/T/CH
FORD ENGINE DIAGNOSIS/REPAIR
Principles and operation of Ford Motor Company engines, Service procedures and engine component diagnostics, repair and/or replacement will be emphasized. Prerequisite: Admission to Automotive Student Service Ed Training (ASSET) and ATF 317.

ATF 333 4 2 4 00 V/O/T/CH
FORD FUEL SYSTEMS & INJECTION
Introduction to the different types of fuels and theory of basic fuel delivery systems including diagnosis, repair and/or replacement of components in Ford electronic engine control systems. Prerequisite: Admission to Automotive Student Service Ed Training (ASSET) and ATF 328. Corequisite: ATF 337

ATF 336 3 2 2 00 V/O/T/CH
FORD Fuel Systems Diagnosis and service of microprocessor-controlled fuel and ignition systems. Computer-based scantools, digital meters and other high technology instruments will be used. Prerequisite: Admission to Automotive Student Service Ed Training (ASSET) and ATF 328. Corequisite: ATF 336

ATF 340 3 0 0 18 V/O/T/CH
TECHNICAL INTERNSHIP III
Work experience at a participating dealership. The tasks will be consistent with the technician's ability and previous course work. Prerequisite: Admission to Automotive Student Service Ed Training (ASSET) and ATF 330, 326, 336, 337, PHY 710

ATF 345 2 1 2 00 V/O/T/CH
FORD MANUAL TRANSMISSIONS
This course is the study of Ford manual transmissions design and operation, and clutch systems. It will include diagnosis and repair of clutches and transmissions. Prerequisite: Admission to Automotive Student Service Ed Training (ASSET)

ATF 346 4 3 2 00 V/O/T/CH
FORD TRANSMISSION & TRANSAXLE
This is the study of Ford automatic transmissions and transaxles including design, operation, diagnosis and repair. Prerequisite: Admission to Automotive Student Service Ed Training (ASSET)
COURSE DESCRIPTIONS

ATG 350  3 0 0 18  TECHNICAL INTERNSHIP IV  VOC/TECH
Work experience at a participating dealership. The tasks will be consistent with the technician's ability and previous course work. Prerequisite: Admission to Automotive Student Service Ed Training (ASSET) and ATG 335

ATG 354  5 3 4 0 0  FORD ADV ENGINE CNTRLS, ELECT  VOC/TECH
Instruction in techniques and procedures required to diagnose and service current vehicles. New systems developed by Ford Motor Company will be included. Prerequisite: Admission to Automotive Student Service Ed Training and ATG 335

ATG 352  4 3 2 0 0  GM SPECIALIZED ELECTRONICS TRN  VOC/TECH
A study of the electrical and electronics systems used in General Motors vehicles. The instruction includes fundamentals of electricity, series and parallel circuits, schematics, wire repair, diodes, transistors and microprocessors. Prerequisite: Admission to Automotive Service Educational Program (ASEP)

ATG 336  4 2 4 0 0  GM SHOP FUND & MINOR SERVICE  VOC/TECH
A study of dealership organizational structure as it relates to the technician. Students use service manuals, electronic troubleshooting manuals and service bulletins. Also provides entry-level automotive task competencies. Prerequisite: Admission to Automotive Service Educational Program

ATG 320  4 2 4 0 0  GM BRAKE SYSTEMS  VOC/TECH
Instruction in the theory of operation and service procedures used in the maintenance and repair of General Motors brake systems. Prerequisite: Admission to Automotive Service Educational Program

ATG 322 & 3 1 4 0 0  GM STEERING & SUSPENSION  VOC/TECH
Instruction in the theory of operation and service procedures used in the maintenance and repair of General Motors steering and suspension systems. Prerequisite: Admission to Automotive Service Educational Program

ATG 326  3 2 2 0 0  GM AUTO AC SYSTEMS  VOC/TECH
Theory of operation of General Motors air conditioning systems leading to the diagnosis, service and repair of current models of GM vehicles. Prerequisite: Admission to Automotive Service Educational Program, ATG 312, 316

ATG 327  3 2 2 0 0  MINOR SVC/REPAIR/GM ENGINES  VOC/TECH
Course will provide instruction in the theory and operation of the General Motors 4-stroke cycle engines. Emphasis will be placed on both design and proper disassembly/reassembly procedures. Prerequisite: Admission to Automotive Service Educational Program, ATG 316

ATG 328  3 2 2 0 0  DIAGNOSIS/REPAIR-GM ELECT SYS  VOC/TECH
Instruction in the diagnosis, repair and service of electrical and electronic components and accessories used on current GM vehicles. Prerequisite: Admission to Automotive Service Educational Program, MAT 772, ATG 312, ATG 316

ATG 329  3 0 0 18  TECHNICAL INTERNSHIP I  VOC/TECH
The technician will work in a participating dealership. The work will be full-time approximately 40 hours per week. The tasks will be consistent with the technician's ability and previous course work. A task list will be issued to each dealer. Prerequisite: Admission to Automotive Service Educational Program, MAT 772, ATG 312, ATG 316, ATG 320, and ATG 322

ATG 330  3 0 0 18  TECHNICAL INTERNSHIP II  VOC/TECH
Work experience at a participating dealership. The tasks will be consistent with the technician's ability and previous course work. Prerequisite: ATG 329, 328

ATG 333  3 2 2 0 0  MAJOR SERVICE PROC/GM ENGINES  VOC/TECH
Evaluating, reconditioning and replacing of major components of GM engines. Instruction will also include diagnostic routines. Prerequisite: ATG 327

ATG 335  3 2 2 0 0  GM FUEL SYSTEMS  VOC/TECH
A course designed to acquaint the student with basic fuel system principles. Instruction will be offered in the theory, service, repair and adjustment of automotive fuel systems. Prerequisite: Admission to Automotive Service Educational Program and ATG 328

ATG 337  4 3 2 0 0  GM TUNE-UP PROC & EMISSIONS CNTRL  VOC/TECH
Diagnosis and service of microprocessor-controlled fuel and ignition systems. Oscilloscopes, engine analyzers, digital meters and other high technology instruments will be used. Prerequisite: ATG 336

ATG 340  3 0 0 18  TECHNICAL INTERNSHIP III  VOC/TECH
Work experience at a sponsoring dealership. Tasks will be consistent with the technician's ability and previous course work. Prerequisite: ATG 330, 344, 345

ATG 344  4 2 4 0 0  GM MANUAL DRIVE TRAINS  VOC/TECH
Provides an understanding of the principles of operation in manual powertrains including manual transmissions and transaxles, front and rear differentials, driveshafts and transfer cases. Proper diagnosis, service and repair procedures of these systems are studied and practiced. Prerequisite: ATG 317, AUT 109

ATG 345  4 2 4 0 0  GM AUTOMATIC DRIVE TRAINS  VOC/TECH
Provides an understanding of the principles of operation in automatic transmissions and transaxles. Proper diagnosis, service and repair procedures of these systems are studied and practiced. Prerequisite: ATG 317, AUT 109

ATG 350  3 0 0 18  TECHNICAL INTERNSHIP IV  VOC/TECH
Work experience at a participating dealership. Tasks will be consistent with the technician's ability and previous course work. Prerequisite: ATG 340

ATG 354  5 3 4 0 0  ADVANCED GM MOTORS SYSTEMS  VOC/TECH
Instruction in techniques and procedures required to diagnose and service current vehicles. New systems developed by GM will be included. Prerequisite: ATG 350

AUT 114  4 2 4 0 0  SHOP FUND & MINOR SERVICE  VOC/TECH
A study of the organizational structure in a dealership/repair facility as it relates to the technician. Students use service manuals, electronic troubleshooting manuals and service bulletins. The course will also develop competencies in entry-level tasks required when working in a dealership or repair facility.

AUT 140  2 0 4 0 0  WELDING FOR AUTOMOTIVE MECHANI  VOC/TECH
Skills will be developed in oxy-acetylene fusion and braze welding, shielded metal arc welding, as well as oxy-fuel flame cutting. Safety is emphasized and basic welding theory is discussed. Warnings concerning the danger and liability involved in welding high-strength steels will be stressed (auto body and chassis, etc.). Safety is emphasized.

AUT 163  3 2 2 0 0  AUTOMOTIVE ENGINE REPAIR  VOC/TECH
Course will provide instruction in the theory and operation of the 4-stroke cycle engines. Emphasis will be placed on both design and proper disassembly/reassembly procedures. Prerequisite: AUT 109

AUT 173  3 1 4 0 0  ADV AUTOMOTIVE ENGINE REPAIR  VOC/TECH
Provides instruction in proper diagnosis of engine malfunctions and repair or replacement of defective components and assemblies. Diagnosis procedures, repair and adjustment will be emphasized. Prerequisite: AUT 163

AUT 242  6 3 6 0 0  BASIC AUTOMOTIVE POWERTRAIN  VOC/TECH
Principles of operation and construction of automotive power trains. Includes instruction in the theory of hydraulic and mechanical systems used in automatic transmissions.

AUT 243  6 2 8 0 0  ADV AUTOMOTIVE POWERTRAIN  VOC/TECH
The student will study powertrain and drive-line systems. Proper diagnosis procedures, service and repair will be emphasized through hands-on experience. Prerequisite: AUT 242

AUT 404  4 2 4 0 0  BASIC SUSPENSION & STEERING  VOC/TECH
Instruction in the theory of operation and service procedures used in the maintenance and repair of automotive steering and suspension systems.

AUT 524  4 2 4 0 0  AUTO BRAKE SYSTEMS & SERVICE  VOC/TECH
Instruction in the theory of operation and service procedures of automotive brakes.

AUT 535  5 2 6 0 0  ADVANCED AUTO BRAKES & ALIGNME  VOC/TECH
The student will study advanced brakes and alignment theory, practice proper diagnosis, service and repair procedures through hands-on experience. Prerequisite: AUT 503, 404

AUT 615  4 2 4 0 0  AUTO ELECTRICITY/ELECTRONICS  VOC/TECH
Provides instruction in theory and operation of automotive electrical circuits. Safety, meters and service information will be emphasized.

AUT 652  3 1 4 0 0  ADV AUTOMOTIVE ELECTRICITY  VOC/TECH
Provides instruction in the diagnosis, repair and service of electrical and electronic components found on current vehicles. Prerequisite: AUT 615

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COURSE DESCRIPTIONS

AUT 704  4 2 4 0 0  AUTO HEATING & AC  VOC/TECH
Provides instruction in the theory of operation of auto air conditioning and heating systems, as well as diagnosing and servicing automotive air conditioning and heating systems.

AUT 823  4 2 4 0 0  ADVANCED AUTOMOTIVE TUNE-UP  VOC/TECH
Provides instruction in testing, diagnosis and repair of the automobile’s ignition, electrical and fuel systems. Modern test equipment, procedures and technology are utilized. Prerequisite: AUT 844

AUT 834  4 2 4 0 0  AUTOMOTIVE FUEL SYSTEMS  VOC/TECH
A course designed to acquaint the student with basic fuel system principles. Instruction will be offered in the theory, cleaning, repair and adjustment of automotive fuel systems.

AVM 100  4 2 4 0 0  CLEANING/CORROSION CONTROL  VOC/TECH
This course encompasses cleaning and prevention of corrosion on the aircraft. Units of instruction will include identifying and selecting materials, inspecting, removing aircraft corrosion and performing aircraft cleaning.

AVM 103  4 2 4 0 0  AIRCRAFT–MATERIALS/PROCESSES  VOC/TECH
This course involves basic materials and processes associated with aircraft. Areas of study will include precision measurement, testing of materials, inspection performance, heat treating, identification and installation of aircraft materials.

AVM 107  4 2 4 0 0  WEIGHT AND BALANCE  VOC/TECH
The student will be given instruction concerning aircraft specifications, aircraft weight and balance records, weighing procedures, jacking and leveling, moment arms, reading scales, recording weights, nomenclature and algebraic signs.

AVM 111  4 2 4 0 0  GROUND OPERATIONS & SERVICING  VOC/TECH
This course will cover aircraft ground operation and servicing. Units of instruction will include fuel selection, ground operation, servicing and securing aircraft.

AVM 112  4 2 4 0 0  ELECTRICAL SYSTEMS  VOC/TECH
Electrical systems of aircraft will be covered in this course. Areas of study will include servicing of wire, controls, switches, indicators, protective devices, AC/DC electrical systems, constant speed and integrated speed drive generators, crimping, wiring inspection, repairing pins and sockets of aircraft connectors.

AVM 121  4 2 4 0 0  WEATHER AND WARNING SYSTEMS  VOC/TECH
The course will cover systems associated with positioning, warning and weather control. Topics covered will include inspection, servicing, configuration, electrical brakes, anti-skid systems, landing gear indicators, warning systems and airframe ice and rain control systems.

AVM 124  4 2 4 0 0  AIRCRAFT ASSEMBLY/RIGGING  VOC/TECH
This course will involve the study of aircraft components to include the following: Aircraft wing configuration, flight theory, landing gear, aircraft maneuvers, structure alignments, assembly components, rigging, primary flight control surfaces, secondary flight control surfaces and aircraft jacking.

AVM 125  4 2 4 0 0  AIRFRAME STRUCTURE AND REPAIR  VOC/TECH
A course for students in aviation that covers materials associated with the structure of the aircraft. Utilization of proper materials, repair, replacement, testing, finishing of metal and non-metal materials will be included in this course.

AVM 129  4 2 4 0 0  LANDING GEAR & BRAKE SYSTEMS  VOC/TECH
The course involves a complete study of the landing gear and brake systems associated with aircraft. Areas of study include inspection, service, repair, troubleshooting and replacement of various types of landing gear and brake systems.

AVM 132  4 2 4 0 0  AIRFRAME/POWERPLANT INSPECTION  VOC/TECH
The course covers inspections related to aircraft engines and airframes. Airframe and engine conformity and air-worthiness inspections will be units of instruction.

AVM 133  4 2 4 0 0  HYDRAULIC/PNEUMATIC POWER SYS  VOC/TECH
This course will involve a complete study of the hydraulic and pneumatic systems contained within aircraft. Components of each area will be covered to include inspection, installation, repair, inspection, troubleshooting and replacement of the systems.

AVM 139  4 2 4 0 0  INSTRUMENTS/FIRE PROTECTION–PP  VOC/TECH
The course will cover aircraft instrument systems, engine fire protection systems and smoke and carbon monoxide detection systems.

AVM 141  4 2 4 0 0  CONTROL SYSTEMS  VOC/TECH
The course covers heating, cooling, pressurization, air cycling and oxygen systems.

AVM 142  4 2 4 0 0  AIRCRAFT TURBINE ENGINES  VOC/TECH
Course covers turbine engine overhaul, repair of turbine engines, installation of turbine engines, troubleshooting of turbine engines.

AVM 145  4 2 4 0 0  AIRCRAFT WELDING  VOC/TECH
The course covers applicable welding procedures associated with materials used to construct aircraft. Proper welding methods for various types of materials will be covered during the course.

AVM 147  4 2 4 0 0  AIRFRAME FUEL SYSTEMS  VOC/TECH
This course covers fueling systems throughout the airframe of the aircraft. Topics include inspection, service, troubleshooting, repair and replacement of the system components.

AVM 148  4 2 4 0 0  ENGINE LUBRICATION SYSTEMS  VOC/TECH
The course covers engine lubrication systems associated with aircraft. Students will study lubrication systems while performing inspections, service, troubleshooting and repair of the system. System components will be repaired and serviced according to FAA regulations.

AVM 151  4 2 4 0 0  ENGINE FUEL/METERING  VOC/TECH
A course designed to cover the fuel metering system of aircraft. Topics include inspection, service, troubleshooting, repair, replacement of various types of fuel metering systems.

AVM 154  4 2 4 0 0  AIRCRAFT ENGINES: RECIPROCATING  VOC/TECH
Aeroplane engines that are reciprocating will be covered extensively. Units of instruction will include inspection and repairing of a radial engine, overhauling a reciprocating engine, service and repair of a reciprocating engine, engine installations, troubleshooting and removing reciprocating engines.

AVM 155  4 2 4 0 0  AIRCRAFT PROPELLER SYSTEMS  VOC/TECH
Aircraft propellers will be the topic of the course. Units will include repair, types of propellers, governing systems, installation, removal, troubleshooting, repairing, synchronizing, lubricating, ice control systems and control system components.

AVM 157  4 2 4 0 0  INDUCTION/COOLING/EXHAUST  VOC/TECH
This course introduces students to the induction system and engine airflow systems of aircraft. Inspecting, troubleshooting, servicing and repairing engine ice and rain control systems will be covered. Heat exchangers, superchargers, turbine airflow and temperature control systems will also be covered with carburetors and manifolds.
COURSE DESCRIPTIONS

AVM 160 20400 AIRCRAFT ELECTRICAL SYSTEMS VOC/TECH
The course is a study of electrical systems of the aircraft engine. Units to be covered include troubleshooting, wiring controls, switches, indicators, protective devices and components repair.

AVM 161 31400 AIRCRAFT IGNITION SYSTEMS VOC/TECH
The course will provide a foundation in aircraft ignition systems and aircraft starting systems. Units will cover the magneto, ignition harness, reciprocating ignition systems and turbine ignition systems. Prerequisite: AVM 112

AVM 165 21200 COMMUNICATION AND NAVIGATION VOC/TECH
Basic units will involve study of autopilots, systems, servos systems, approach coupling systems, navigation systems, electronic communication systems, antenna systems, static pressure systems, flight instrument systems and all position indicating systems.

AVM 168 11000 FLUID LINES AND FITTINGS VOC/TECH
Aircraft fluid lines and fittings will be covered in this course. Units of instruction will include rigid and flexible lines, fittings and their fabrication and installation.

AVM 170 21200 AIRCRAFT DRAWINGS VOC/TECH
A course to develop understanding of aircraft drawings, symbols and schematics. Blueprint information, graphing, charting and drawing will be topics covered as they relate to aircraft.

BCA 133 42400 WORD PROCESSING SKILL DEV. I VOC/TECH
Review of alphabetic and numeric keyboard reaches using a computer. Develop a strong keyboarding foundation using the touch method while utilizing correct techniques. Introduces fundamental word processing functions. Instruction covers word processing concepts, terminology, features and other related skills. Must key at 25 NWPM for three minutes.

BCA 137 32200 WORD PROCESSING SKILL DEV. II VOC/TECH
Emphasis on developing speed, accuracy and proofreading techniques in preparation of business documents using word processing software. Students develop a broader understanding of software capabilities as they continue to study concepts, vocabulary and additional features. Continued development of speed and accuracy is emphasized. Prerequisite: BCA 133.

BCA 146 10200 BASIC SPREADSHEETS VOC/TECH
Orientation to Excel. Topics include spreadsheet layout and terminology, charting, enhancing a worksheet and chart. Designed for beginning users of Excel.

BCA 164 10200 BASIC DATABASES VOC/TECH
Introduction to relational database management software. Topics include creating, editing, querying, using forms, reports, customizing and managing data and files.

BCA 174 10200 BASIC PRESENTATION SOFTWARE VOC/TECH
Introduction to presentation software. Topics include creating, enhancing, embellishing and illustrating a presentation with charts, graphs, special effects; converting existing material, printing presentations, speaker’s notes and handouts.

BCA 212 32200 INTRO COMPUTER BUSINESS APPL VOC/TECH
The focus of this course is to use computer hardware and software as business productivity tools. Training includes a hands-on introduction to computer applications vital in today’s business and industry. Course covers operating system, e-mail, internet, word processing, spreadsheet, database and presentation applications.

BCA 213 42200 INTERMEDIATE COMPUTER BUSINESS APP VOC/TECH
Develop a proficiency in decision-making using computer software applications. Producing final documents for real business applications such as file integration, online forms, linked spreadsheets and desktop publishing are emphasized. Prerequisite: BCA 212 or CSC 110

BCA 214 32200 ADV COMPUTER BUSINESS APPL VOC/TECH
Covers post-advanced applications using Microsoft Office. Working with master documents, creating index and table of contents from long reports, creating online forms, learning to use auditing and data validation tools, customizing forms and administering a database and creating complex presentations are emphasized. Prerequisite: BCA 213.

BCA 250 32200 DESKTOP PUBLISHING VOC/TECH
In a PC environment, use image enhancement software such as Adobe Photoshop to manipulate photo and graphic files. Apply principles of desktop publishing in the development of publications using software such as Microsoft Publisher. Convert files into Web-ready format. Prerequisite: BCA 212 or CSC 110

BIO 100 11000 OPPORTUNITIES IN BIOLOGY GENERAL
An exploration of careers and advanced educational opportunities in the biological sciences at the local, state and national levels.

BIO 104 32200 INTRODUCTORY BIOLOGY W/LAB CORE
Introduction to basic concepts in biology. Topics include biochemistry, cell structure and function, metabolism and energetics, classical and molecular genetics and the diversity of life at the organismal level. Biology, as an experimental science, and biotechnology will be explored through laboratory experiences.

BIO 112 43200 GENERAL BIOLOGY I CORE
First semester of Biology for majors. Topics covered include: Chemistry of life, cells, bioenergetics, genetics, evolution, viruses, prokaryotes and protists. Prerequisite: H.S. Biology and H.S. Chemistry or equivalent

BIO 113 43200 GENERAL BIOLOGY II CORE
Second semester of biology for majors. Topics covered include: fungi, plants, animals and ecology. It is recommended that BIO 112 be taken prior to this course. Prerequisite: H.S. biology and H.S. chemistry or equivalent

BIO 138 32200 FIELD ECOLOGY CORE
Field and laboratory studies of native plants and animals of Iowa. Emphasis is placed on ecological relationships. Selected field trips are conducted to forest, prairie, marsh and riparian habitats in the local area.

BIO 145 33000 ECOLOGY OF IOWA GENERAL
Surveys the major landforms of Iowa including the Mississippi River Valley, Northern Prairie Lakes Region, Loess Hills and Southern Hills Area. Landforms are emphasized from the standpoint of climate, soils, geology, water resources, forestry, wildlife and environmental concerns. One Saturday field trip.

BIO 146 33000 GENETICS OPEN
An introductory genetics course for Biology and Biotechnology majors. Topics covered include DNA and chromosome structure and function; Mendelian genetics; molecular genetics in eukaryotes, prokaryotes and viruses; recombinant DNA technology; gene expression and the genetic basis of immunology. Prerequisite: BIO 112 or BIO 187

BIO 156 32200 HUMAN BIOLOGY W/LAB CORE
A study of Biology that emphasizes the human body. Topics such as the cell, basic Chemistry, basic genetics and human ecology are included. Designed for the non-science and inadequately prepared health science major.

BIO 164 53400 ESSENTIALS ANATOMY/PHYSIOLOGY CORE
A classic integration of human anatomy and physiology at the cellular level and organism/system level. Includes cat dissection. Prerequisite: H.S. Biology and H.S. Chemistry or equivalent

BIO 168 43200 ANATOMY & PHYSIOLOGY I CORE
Anatomy & Physiology I covers the structure and function of the human body from the cellular level to organ systems. Topics at the cellular level include the fundamental basics of Chemistry, cell structure and cellular metabolism, genetics and histology. The organ systems studied are the skin and integumentary system, the skeletal and muscular systems, the nervous system and the senses. Lecture and lab must be taken concurrently. Prerequisite: A grade of “C” or better in BIO 156 Human Biology or a “C” or better in high school Anatomy within the last five years

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**Course Descriptions**

**BIO 173** 4 3 2 0 0  
**Anatomy & Physiology II**  
**Core**  
Anatomy and Physiology II is a continuation of Anatomy & Physiology I. The following organ systems are covered: the endocrine system, blood and the cardiovascular system, the lymphatic system and immunity, the respiratory system, the urinary system, the digestive system including nutrition, and the reproductive system. Other topics included in the course are: the body's balance of water; electrolytes and acids and bases; and an introduction to human growth and development. Lecture and lab must be taken concurrently. Prerequisite: A grade of "C" or better in BIO 168 Anatomy and Physiology I.

**BIO 187** 4 2 4 0 0  
**Microbiology W/Lab**  
A general microbiology course with laboratory designed for the science major. Emphasis is placed on microbial morphology, physiology, microbial genetics, virology and basic immunology. Prerequisite: One semester of any college-level Biology.

**BIO 225** 4 3 2 0 0  
**Marine Biology I**  
**General**  
Students will study polar, temperate and tropical marine organisms and their environmental and ecological relationships. They will also examine the structure and function of marine flora and fauna using preserved and live specimens. The course includes hands-on laboratory activities, comparative anatomy, field observations, marine aquarium care, snorkeling, kayaking and introductory scuba. Prerequisite: High school or college Biology.

**BIO 227** 4 3 2 0 0  
**Marine Biology II**  
**General**  
This course is the second in a series of two courses. The students will continue the study of polar, temperate and tropical marine organisms and their environmental and ecological relationships. They will also examine the structure and function of marine flora and fauna using preserved and live specimens. The course includes hands-on laboratory activities, comparative anatomy, field observations, marine aquarium care, snorkeling, kayaking and introductory scuba. Prerequisite: BIO 225.

**BIO 243** 1 1 0 0 0  
**Topics in Biotechnology**  
**Open**  
An exploration of recent advancements in biotechnology, as well as current practices in research and development, manufacturing, quality control/quality assurance and safety. Prerequisite: BIO 250.

**BIO 249** 3 0 0 0 0  
**Biotechnology Internship**  
**Open**  
This internship is the final requirement for the completion of the Biotechnology A.S degree requirements. It will be conducted in cooperation with potential employers. During this period, students will be expected to demonstrate their technical skills and practicum competencies in a professional manner, showing progressive independence, greater efficiency and confidence. Prerequisite: Permission of instructor.

**BIO 250** 5 2 6 0 0  
**Cell & Molec Bio-Nucleic Acids**  
**Open**  
This course is designed to provide training in requirements for biotechnology majors. Topics will include DNA and RNA structure, function and regulation. Strategies and tools used in genetic engineering will also be included. The lab Prerequisite: BIO 104 and 112. Corequisite: BIO 187 media preparation, cell culture techniques, solution preparation and other basic lab skills. Students will get hands-on training in the isolation, characterization and manipulation of nucleic acids, as well as, PCR and Southern blotting. The course will include lab safety.

**BIO 251** 5 2 6 0 0  
**Cell & Molecular Bio-Proteins**  
**Open**  
This course is designed to provide training in techniques related to protein Chemistry and is a requirement for biotechnology majors. The course will focus on processes related to synthesis, control of synthesis and trafficking of proteins within the cell. Protein structure and function will be studied with special emphasis on enzymes and immunoproteins. The study of differential protein expression and regulatory mechanisms will also be included. The lab component of the course will train the student in purification, characterization, handling and storage of proteins, enzyme mechanisms and kinetics, immunosassays and two-dimensional gel electrophoresis. Prerequisites: BIO 104, BIO 250, CHM 132, MAT 157. Pre- or Corequisite: BIO 112.

**BIO 260** 3 3 0 0 0  
**Biology of Aging**  
**General**  
This course is designed for individuals planning to work with the elderly population. It covers changes that occur in body systems during the normal aging process as well as some of the most common dysfunctions and diseases associated with aging. Furthermore, environmental factors, effects of diet and exercise in the aging process will be discussed.

**BIO 295** 4 3 2 0 0  
**General Ecology and Lab**  
**General**  
General ecology is intended for biology and related majors. Topics addressed by lecture/discussion and laboratory include historical development and scientific method, physical environment, organisms and species, communities and ecosystems and theory. Lab activities include written reports and oral presentations. Prerequisite: BIO 112, BIO 113, ENV 175 and ENV 176 or BIO 138 or with instructor’s permission.

**BIO 732** 4 3 2 0 0  
**Health Science Microbiology**  
**Open**  
Basic concepts and applications of medical microbiology. Topics include morphology and physiology of microorganisms, pathology, epidemiology and immunology. Designed for the health sciences major. It is recommended that high school Chemistry be taken prior to this course. Prerequisite: H.S. Biology or equivalent.

**BIO 733** 3 2 2 0 0  
**Health Science Anatomy**  
**Open**  
Offers the student basic concepts in human anatomical structure with relation to body functions. The course covers all major body systems with emphasis on structure. This accompanying lab will reinforce lecture with cadaver dissection. Prerequisite: H.S. Biology & Chemistry or equivalent.

**BIO 734** 3 2 2 0 0  
**Health Science Physiology**  
**Open**  
Detailed explanation of human physiology including the nervous, cardiovascular, respiratory, digestive, urinary, lymphatic, skeletal, muscular and reproductive systems. Prerequisite: BIO 733, 164, or equivalent.

**BMA 167** 2 2 0 0 0  
**Steam Plant Operations**  
**Voc/tech**  
High-pressure steam boilers, operation, controls, burning equipment instruments. Prerequisite: BMA 165.

**BMA 175** 2 2 0 0 0  
**Basic Plumbing**  
**Voc/tech**  
Plumbing, plumbing components, plumbing codes and reading blueprints.

**BMA 177** 3 2 2 0 0  
**Indus. Plumbing & Pipelitting**  
**Voc/tech**  
A course in fundamental plumbing and pipelitting. Topics covered include the properties of torque, the use of torque and the application of torque; the development and use of piping schematics; elementary pipe layout and joint construction with various materials; the purpose, use, construction and operation of valves and process control equipment used in manufacturing.

**BPT 102** 2 2 0 0 0  
**Intro to Biomass Process Tech**  
**Voc/tech**  
This course describes the standard roles and responsibilities of the process technician to include mastering an understanding of basic equipment, design, operation and maintenance of a process control plant.

**BPT 111** 3 2 2 0 0  
**Biomass Equipment and Systems**  
**Voc/tech**  
Biomass Equipment and Systems is designed to cover the basic equipment and technologies associated with the processing of renewable energy fuels in the biomass industry.

**BPT 112** 3 2 2 0 0  
**Biomass Tech Health/Safety**  
**Voc/tech**  
This course is designed to focus on the key elements that contribute to the subject of Process Safety, Personnel Safety, Occupational Health and Safety, Transportation and Movement of Process Materials, and safety in general.

**BPT 125** 2 2 0 0 0  
**Piping & Instrument Diagrams**  
**Voc/tech**  
This course is designed to provide the basic fundamentals of how to read a Piping and Instrumentation Diagram (P & ID) beginning with symbols of individual components, numbering systems and line diagrams.
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**Course Descriptions**

**BUS 102** INTRODUCTION TO BUSINESS  
An overview of the ever-changing world of business. Provides information in the areas of ownership, management, marketing, insurance, economic systems and finance, as well as the role of government.

**BUS 181** BASIC LAW FOR ENTREPRENEURS  
This course is designed to acquaint business students and those currently involved in operating small businesses with the general areas of law that may be problematic for the entrepreneur and create risks resulting in lawsuits.

**BUS 186** BUSINESS LAW II  
Provides introductory overview of the sources of law of the American legal system, the structure of the court systems, torts, contract law and sales law.

**BUS 218** LONG RANGE FINANCIAL PLANNING  
This course is designed to increase awareness of the need for identifying a desired retirement lifestyle within the context of the anticipated financial retirement inflows. Assessment will be made of retirement resources from employee, business and government sources. Individual retirement resource strategies are investigated. Healthcare and housing issues are examined.

**BUS 220** INTRO INTERNATIONAL BUSINESS  
The International Business course is designed for students to understand the dynamics of global trade. This course examines the cultural, economic, legal, political, social and technological environment of international business. The course also provides an overview of marketing, management, distribution and job opportunities available for business students.

**BUS 240** VIRTUAL BUSINESS FIRM  
The Virtual Business Firm is a virtual business enterprise, set up and run by students to prepare them to work in a real-world business environment. With the instructor playing the role of facilitator, students determine the nature of their business, incorporating all of the elements of a business plan, including company description, management and organization structure, products and/or services, marketing and sales strategies and financials within a global context. Students engage in daily operations running the virtual business, as if it were a real business, via a closed worldwide network of virtual business firms. Prerequisite: All Business Administration or Entrepreneurship program required courses or permission of instructor.

**BUS 260** INTRODUCTION TO INSURANCE  
An introduction to managing risks and making the best use of insurance. Various forms of personal and property insurance coverages are introduced. Insurance coverages as they relate to both business operations and personal situations are discussed.

**BUS 278** EMPLOYMENT LAW  
Emphasis is on the principles of business law as it pertains to the human resource function. The course covers laws applicable to selection, testing, hiring, discipline, personnel policies and procedures. The course also covers Equal Employment laws and related discrimination issues. The Occupational Safety and Health Act, Family and Medical Leave Act, and workers compensation topics are discussed as they relate to the business environment. Prerequisite: BUS 185.

**BUS 904** BUS 185  
The student will participate in a supervised study tour in which time will be spent touring a government center to view how the government runs, including the history of this country to current legal policies and procedures. Prerequisite or Corequisite: BUS 185 or POL 111 or CRJ 132 or instructor permission.
COURSE DESCRIPTIONS

CAD 119  3 2 2 0 0  INTRO COMPUTER-AIDED DRAFTING  VOC/TECH
This course will introduce the student to computer-aided drafting and design. Basic computer hardware, software and operating systems will be discussed. Basic two-dimensional CAD drawing creation and editing techniques will be covered. Drawings will be created and plotted. Prerequisite: Basic computer literacy

CAD 125  3 2 2 0 0  INTERMEDIATE CAD--MECHANICAL  VOC/TECH
This course will introduce students to advanced computer-aided drafting and design applications. Program customization, file manipulation/translation and library creation/usage will be covered. Three-dimensional concepts will be discussed. Prerequisite: CAD 119

CAD 126  3 2 2 0 0  INTERMED CAD–ARCHITECTURAL  VOC/TECH
This course will apply architectural drafting practices to the CAD environment. Two-dimensional plans (including plumbing, HVAC, electrical, etc.) will be developed. Site plans and presentation are some of the topics that will be discussed. Prerequisite: CAD 119

CAD 151  6 4 4 0 0  CAD GRAPHICS I  VOC/TECH
Drawing formats, geometric construction and lettering will be taught on computer-aided drafting (CAD) software. Drafting standards will be covered. CAD operations and commands will be addressed. Sketching and fundamentals of orthographic projection are stressed. Prints will be prepared. Prerequisite: CSC 110 or equivalent

CAD 152  6 4 4 0 0  CAD GRAPHICS II  VOC/TECH
Advanced geometric description applicable to all fields of drafting will be emphasized. Auxiliary views will be created. Descriptive geometry principles will be examined. Intermediate and advanced dimensioning techniques will be covered including dimensional tolerance analysis. CAD applications will be taught. Prerequisite: CAD 151, MAT 772

CAD 153   3 2 2 0 0  CAD APPLICATIONS I  VOC/TECH
Mechanical components and processes that are used in product design will be covered. Geometric dimensioning and tolerancing will be taught. Preparation of welding drawings will be presented with the emphasis on proper usage of American Welding Society symbols. Precision bending of sheet metal will be covered. Prerequisite: CAD 152, MAT 773

CAD 154   3 2 2 0 0  CAD APPLICATIONS II  VOC/TECH
Precision bending of sheet metal will be covered. Students will gain knowledge of heating, ventilation and air conditioning (HVAC) applications and HVAC CAD symbology. Hydraulic systems and applications will be covered. Hydraulic symbology will be covered. Mechanical power transmission will be a subject of study. Bearings, bearing seals and sealing systems will be addressed. Prerequisite: CAD 153 & MAT 773

CAD 155   3 2 2 0 0  NETWORKING SYS INVOLVING CAD  VOC/TECH
Network system key features and functionality will be covered. System file management will be addressed. Operating systems and software will be examined. Relationships between computer hardware and software will be taught.

CAD 162   3 2 2 0 0  INTRO TO MULTIMEDIA  VOC/TECH
Basic three-dimensional concepts and applications are covered. Rendering, animating and application of basic color manipulation are discussed and used. Prerequisite: CAD 119

CAD 182   3 2 2 0 0  SOLIDWORKS CAD I  VOC/TECH
Parametric solid model (3D) CAD basics will be taught using SolidWorks. Parametric concepts will be covered. Solid CAD models will be built and edited in SolidWorks. Assemblies of solid parts will be examined. Part drawings will be created and plotted. Prerequisite: CAD 152, CAD 240, MAT 773

CAD 196   3 2 2 0 0  ENGINEERING DISCIPLINES & PRAC  VOC/TECH
Types of engineering disciplines and their application of drawings will be examined. Drawing styles, engineering units and professional standards (ANSI, ASME, etc.) will be covered. Prerequisite: CAD 151

CAD 215   MECHANICAL SYSTEMS  VOC/TECH
Standard and nonstandard fastening systems will be examined. CAD part libraries and applications will be covered. Basics of power train/mechanical components will be introduced. Mechanical bearings and hydraulic/pneumatic sealing systems will be addressed. Prerequisite: CAD 152, MAT 773

CAD 240   3 2 2 0 0  APPLIED MATERIALS & PROCESSES  VOC/TECH
Standard industrial raw materials and forming processes will be examined. Students will see various machining, forming and welding operations. Field trips to industry will be offered.

CAD 242  3 2 2 0 0  MANUFACTURING INTERFACES  VOC/TECH
Computer interfaces between manufacturing and engineering will be the primary focus of the class. File exchange formats, data compilation and machining interpretation of the model file will be addressed. Tool path generation and robotic controls will be discussed. Manufacturing system integration will be covered. Prerequisite: MAT 772

CAD 246   3 2 2 0 0  PARAMETRIC CAD I  VOC/TECH
Parametric solid model CAD basics will be taught. Parametric concepts with design intent will be covered. Solid CAD models will be built and edited. Mechanical assemblies will be created. Part and assembly drawings with part lists will be created and plotted. Prerequisite: CAD 152, CAD 240, MAT 773

CAD 248   3 2 2 0 0  PARAMETRIC CAD II  VOC/TECH
Parametric solid model CAD intermediate commands will be taught. Parametric concepts with design intent will be covered. Solid CAD models will be built and edited. Mechanical assemblies will be created. Part and assembly drawings with part lists will be created and plotted. Prerequisite: CAD 153, 252, MAT 773

CAD 252   4 2 4 0 0  DESIGN PROJECT I  VOC/TECH
Detailing individual parts, types of assembly drawings and parts lists will be covered on an individual basis. Design process and procedures will be discussed. The student will conform to industry standards for their design project. Prerequisite: CAD 152, 196, 240, MAT 773

CAD 254   5 2 6 0 0  DESIGN PROJECT II  VOC/TECH
Continuation of CAD 252, Design Project I. Detailing individual parts, types of assembly drawings and parts lists will be covered on an individual basis. Design process and procedures will be discussed. The student will conform to industry standards for their design project. Prerequisite: CAD 153, 215, 252

CAT 430   4 2 4 0 0  CATERPILLAR FUEL SYSTEMS  VOC/TECH
The student will be introduced to basic Caterpillar fuel system principles and theory for mechanical and electronic engines. General repair and diagnostic procedures will also be covered. Experienced individuals may contact the instructor to gain admittance to this course. Prerequisite: DSL 366, 546, 605, 145

CAT 431   2 1 2 0 0  CATERPILLAR FAILURE ANALYSIS  VOC/TECH
The student will determine the root cause of failure, how to properly prepare the parts for inspection and determine what is normal and abnormal wear. Experienced individuals may contact the instructor to gain admittance to this course. Prerequisite: DSL 366, 546, 605

CAT 432   2 1 2 0 0  CATERPILLAR LS/PC HYDRAULICS  VOC/TECH
This course will cover the design and theory of LS/PC hydraulic systems. This course will cover the function, operation and diagnostics of LS/PC hydraulics. Experienced individuals may contact the instructor to gain admittance to this course. Prerequisite: DSL 605, 145

CAT 433   2 2 0 0 0  CATERPILLAR SERV INFO SYSTEM  VOC/TECH
Instruction covers basic computer skills related to Caterpillar computer systems. Students will learn how to operate SIS, Parts Integrator, DBS Parts orders and work orders.

CAT 434   4 0 0 1 6  CATERPILLAR INTERNSHIP  VOC/TECH
Work experience at a local Caterpillar dealership. The work experience will be compatible with the student’s ability and previous course work. Prerequisite: DSL 366, 546, 605, 145
COURSE DESCRIPTIONS

CAT 435 20 40 0 0
CATERPILLAR MULTI-MEDIA
VOC/TECH
The student will complete Caterpillar computerized tests and review modules. Prerequisite: DSL 366, 546, 605, 145

CET 102 3 3 0 0 0
FUND OF CIVIL ENGINEERING
VOC/TECH
This course introduces concepts of the civil engineering technician field, including career opportunities, the engineering industry and basic engineering principles. The student will learn to read and understand road and bridge plans and be introduced to all the elements that make up a highway construction project.

CET 119 3 2 2 0 0
SURVEY I
VOC/TECH
This course will develop working knowledge of surveying fundamentals. Topics will include introduction to surveying instruments and equipment, measurement of distances and angles, determining elevation, note keeping, traversing, triangulation, mapping and the researching of monuments and benchmarks.

CET 155 3 3 0 0 0
MATERIALS I
VOC/TECH
Students will develop a working knowledge of sampling and testing basic materials used in the highway construction industry (aggregate and concrete), Iowa Department of Transportation materials certifications (AGG I, AGG II, and PCC I) will be given to students upon successful completion of state certification exams given during the course.

CET 158 3 3 0 0 0
CONSTRUCTION I
VOC/TECH
This course will develop a working knowledge of construction inspection fundamentals. Topics will include an introduction to construction reviews, preconstruction planning, permits processes, embankment construction, drainage solutions, stabilization methods, equipment used in construction, placement work, paving procedures and estimating time and materials. Prerequisite: CET 102 or department approval

CET 169 4 3 2 0 0
SURVEY II
VOC/TECH
A continuation of Survey I. Topics will include construction control surveys; topographic surveys, construction site layout; coordinate systems (i.e., state plane); elementary horizontal curves; real property descriptions; right of way. Electronic data collection and global positioning will be utilized, as well as data downloading and editing using CAD programs. Prerequisite: CET 119 or department approval

CET 173 4 4 0 0 0
HIGHWAY DESIGN I
VOC/TECH
This course will introduce the student to highway design. Topics will include an overview of the highway development process, design criteria and standards, horizontal alignments, vertical alignments, cross-sections, earthwork, construction details, specifications and estimates of quantities. A final highway design project will be completed. Prerequisite: CET 102 and CET 178 or department approval

CET 178 4 4 0 0 0
AUTOMATED DESIGN I
VOC/TECH
This course will introduce the student to computer-aided drafting (CAD) utilizing Microstation software. Microstation fundamentals will be taught including drawing formats, placing and manipulating elements, measurements, cells, patterning, dimensioning, reference files and three-dimensional modeling. Drawings will be created and plotted. Prerequisite: CET 102 and CSC 170 or department approval

CET 192 4 4 0 0 0
STATICS
VOC/TECH
This course is designed to acquaint the student with basic structural concepts. Emphasis is placed on the use of free body diagrams in understanding the forces acting on a structural member. Prerequisite: MAT 775 or instructor approval

CET 219 4 3 2 0 0
SURVEY III
VOC/TECH
Application of survey concepts to Boundary and Route Surveying. Topics will include: real property descriptions; research, route surveying, horizontal curve calculation and layout, vertical curve calculations, closed and open loop survey, bench level circuit; subdivision survey and construction surveying. Electronic data collection and global positioning will be utilized. Prerequisite: CET 169 or department approval

CET 222 3 2 2 0 0
SOILS AND FOUNDATIONS
VOC/TECH
The student will learn to recognize soil relationships with landforms and the effect on engineered construction. Concepts of geology and engineering properties including soil type, classification, strength and deformation will be covered. Principles of soil mechanics and construction observation techniques will be learned and applied to real-world examples. Prerequisite: MAT 775 or instructor approval

CET 235 3 3 0 0 0
CONSTRUCTION II
VOC/TECH
This course will teach a student to define, interpret and utilize construction contract documents and contracting methods. Topics covered are bonds, contracts, bidding documents, construction insurance, subcontracts and subcontractors, dispute resolutions, ethics, safety and labor relations. Prerequisite: CET 138 or department approval

CET 244 3 2 2 0 0
MATERIALS II
VOC/TECH
This course will develop a working knowledge of hot mix asphalt and Portland cement concrete plant operations, plant control, sampling and testing, Iowa Department of Transportation materials certifications (PCC II, HMA I) will be given to students upon successful completion of state certification exams given during the course. Prerequisite: CET 155 or department approval

CET 278 4 4 0 0 0
AUTOMATED DESIGN II
VOC/TECH
This course will introduce the student to automated civil engineering design utilizing GEOPAK software. GEOPAK fundamentals will be taught including the project manager, digital terrain models, coordinate geometry, alignment tools, design and computation manager, criteria files, cross-section creation, labeling, sheeting, reports and quantity output. A complete highway design project utilizing GEOPAK will be performed. Prerequisite: CET 178 or department approval

CET 283 4 4 0 0 0
HIGHWAY DESIGN II
VOC/TECH
This course will introduce the student to additional highway design topics. Topics will include hydrology and drainage design, intersection and interchange design, roadway design, jointing, pavement design, parking design, highway capacity and traffic engineering. Prerequisite: CET 173 or department approval

CET 291 3 3 0 0 0
STRUCTURE DESIGN & CONST
VOC/TECH
This course is an introduction to the understanding of load and resistance factor design (LRFD) method. Topics considered include material properties, tension, compression, bending, beam columns, simple connections, base plates and bearing plates. Prerequisite: CET 192

CET 305 5 0 0 2 0
FIELD COOP
VOC/TECH
Practical experience through on-the-job training in an approved civil engineering technician setting. Tasks will be consistent with students’ career objectives, skills and knowledge. Prerequisite: Successful completion of 32 credit hours of CET credit courses and/or department approval

CET 307 2 2 0 0 0
FIELD ORIENTATION
VOC/TECH
This course is required for students who do not take the Field Coop. It will acquaint a student with field operations. The role of the superintendent and project manager will be discussed as well as the relationship between the contractor and owner. Visits will be made to local projects to observe construction procedures. Prerequisite: Successful completion of 32 credit hours of CET credit courses. Written permission from the CET faculty is required to substitute this course for 2 credits of the 5 credit CET 305 requirement.

CHM 105 3 2 2 0 0
SURVEY OF CHEMISTRY CORE
VOC/TECH
An introduction to chemical topics with little mathematics. Topics include energy, food chemistry, air and water pollution, agricultural chemicals, detergents and drugs. The course is for students who need one semester of laboratory science.

CHM 112 4 3 2 0 0
INTRO TO GENERAL CHEMISTRY
VOC/TECH
A study of the concepts of general chemistry including atomic structure, bonding, reactions, stoichiometry, gas laws, solutions, acids and bases, equilibrium, nuclear chemistry and an introduction to organic chemistry. Problem-solving is emphasized. For non-science majors and students in health-related programs. Prerequisite: 1 year H.S. Algebra or MAT 063

CHM 132 4 3 2 0 0
INTRO TO ORGANIC/BIOCHEMISTRY
VOC/TECH
A continuation of the study of organic chemistry and a study of biochemistry. Organic topics include the structure of organic molecules, the nature and reactions of functional groups, and stereochemistry. Biochemistry topics include carbohydrates, proteins, lipids, nucleic acids, enzymes and metabolism. Prerequisite: CHM 122 or equivalent
COURSE DESCRIPTIONS

CHM 165 43300
GENERAL/INORG CHEMISTRY I
A thorough treatment of general chemistry including atomic structure, stoichiometry, chemical bonding, states of matter, solutions, acids and bases, reaction rates, equilibrium, thermodynamics and electrochemistry. This course is intended for science, engineering, pre-vet, pre-med, pre-dental and pre-optometry majors. Prerequisite: 1 year H.S. Chem. or CHM 122 & 2 years H.S. Algebra or MAT 073

CHM 175 43300
A continuation of General and Inorganic Chemistry I. Prerequisite: CHM 165 or Equivalent

CHM 263 53400
ORGANIC CHEMISTRY I
A study of the principles of organic chemistry including the nomenclature and chemistry of the various organic functional groups. Structure, bonding, synthesis, reaction mechanisms and spectroscopy are emphasized. The sequence is designed to satisfy the one year of organic chemistry required by most medical schools. Prerequisite: CHM 152 or CHM 175 or 1 year college-level general chemistry

CHM 273 53400
ORGANIC CHEMISTRY II
A continuation of Organic Chemistry I. Prerequisite: CHM 263 or Equivalent

CIS 125 33000
INTRO TO PROGRAMMING LOGIC W/L
OPEN
This course provides students with a firm foundation in problem-solving methods in computer programming and facilitates the development of good structured programming skills for solving business problems. Students will define and analyze problems, design computer solution algorithms and prove the correctness of the solution.

CIS 130 33000
COMPUTER PROGRAMMING
VOC/TECH
Basic programming techniques such as writing algorithms, drawing of flow charts and developing programs that include loops and subroutines.

CIS 140 32200
INTRO TO GAME DESIGN
VOC/TECH
Identify and discuss the concepts and technologies of computer game design and development. Discuss the gaming industry and its expectations and opportunities. Design and develop your own computer games using a variety of software tools.

CIS 152 33000
DATA STRUCTURES
OPEN
An object-oriented programming language will be used to introduce commonly used data structures. Programs using these data structures will be developed, written, tested and debugged. Prerequisite: CIS 125 or equivalent

CIS 154 33000
COMPUTATIONAL STRUCTURES
OPEN
Relates mathematics as a tool and language to the computer. An object-oriented language will be used to acquaint students with application areas in computer science. Prerequisite: CIS 125

CIS 161 33000
C++
Students will examine the structure of typical C++ programs, explore the concepts of object-oriented programming and design eight small-to-medium sized programs in C++. Prerequisite: CIS 125 or equivalent

CIS 164 33000
ADVANCED C++
VOC/TECH
Review and extend the concepts of class hierarchies, encapsulation, inheritance and polymorphism. Explore class libraries, templates, streamable classes and exception handling. Develop a code for both DOS and Windows applications. Prerequisite: CIS 161

CIS 169 33000
C#
VOC/TECH
This course is an introduction to the C# language. Object-oriented programs will be developed by students. Prerequisite: CIS 125

CIS 171 33000
JAVA
VOC/TECH
Students will learn the basic features of the Java programming language and explore the concepts of object-oriented programming, event handling, user interface programming, and graphic techniques. Gain practical experience creating and modifying Java applications and applets, and embedding Java applets in web pages. Prerequisite: CIS 110

CIS 178 22000
JAVA PROGRAMMING I
VOC/TECH
Learn Java programming techniques related to information technology and network administration. Prerequisite: NET 223, 623, 628

CIS 179 22000
JAVA PROGRAMMING II
VOC/TECH
Learn advanced Java programming techniques related to information technology and network administration. Prerequisite: CIS 178

CIS 182 33000
JSP AND SERVLETS
VOC/TECH
Students will learn server side features of the Java programming language and explore the concepts of enterprise development. Gain practical experience creating and modifying Java servlets. Java Server Pages (JSP) and Enterprise Java Beans (EJB). Database connectivity will also be examined. Prerequisite: CIS 171, 207

CIS 204 33000
INTRO TO WEBSITE DEVELOPMENT
VOC/TECH
Introduces HTML and DHTML concepts and technologies. Includes HTML, XHTML, CSS, JavaScript and the Document Object Model (DOM). Students will use a variety of current software development tools to build and publish business-oriented website applications. Prerequisite: CIS 110

CIS 207 32200
FUND OF WEB PROGRAMMING
VOC/TECH
This course introduces the student to basic concepts, languages and tools used in the development of an e-commerce website. Student will identify effective design concepts and characteristics of successful websites. They will use current tools and techniques to design and create e-commerce websites. Prerequisite: CIS 110 or BCA 212

CIS 210 33000
WEB DEVELOPMENT I
VOC/TECH
This course is designed to teach students how to install, configure and maintain a Web Server with an emphasis on web page creation and website authoring. Students will learn to use state-of-the-art technology and software in this course. Students are introduced to relational databases and how to use SQL to access them. Students will learn to install a Web Server, a Relational Database, and create dynamic web content containing text, graphics, hyperlinks, tables, forms and frames. Prerequisite: NET 223, 623, 628

CIS 211 33000
WEB DEVELOPMENT II
VOC/TECH
This course is designed to teach students how to create a web site where customers can purchase products over the internet (E-commerce). Students will learn to work with the most widely used server side scripting languages and Common Gateway Interfaces including SSL, ASP, JSP, C, Perl, and PHP. After completing this course, students will be able to install a Web Server, a Relational Database and create dynamic web content for e-commerce. Prerequisite: CIS 210

CIS 215 33000
SERVER SIDE WEB PROGRAMMING
VOC/TECH
This course introduces the students to a current selection of application-programming languages referred to as "scripting languages". These languages are used to create small self-contained programs that are used to add unique functions and special handling capabilities to website applications. The students will learn the basic concepts and applications of these languages and how they can be included within a website. Prerequisite: CIS 207 or BCA 113

CIS 240 33000
E-COMMERCE WEBSITE II
VOC/TECH
Introduces Dynamic HTML, cascading style sheets, and XML, work with advanced features of FrontPage and will introduce another website development tool. Prerequisite: CIS 207

CIS 247 33000
INTRO TO XML
VOC/TECH
Introduces XML concepts and coding requirements. Students will create, display, transform and transfer data in XML format as part of an Internet-based application. Course includes XML, XHTML, XSL and XSLT. Prerequisite: CSC 110

CIS 303 33000
INTRODUCTION TO DATABASE
VOC/TECH
This course provides a comprehensive foundation that enables students to understand and use commercially available relational DBMS products effectively. Prerequisite: CSC 110 or instructor approval

CIS 332 32200
DATA BASE AND SQL
VOC/TECH
This is an introduction to SQL as a database programming language to those already familiar with basic relational database concepts. Students will write executable SQL statements to create and maintain database objects. Prerequisite: CIS 303

CIS 338 32200
SOL/ORACLE
VOC/TECH
Students will use advanced techniques to retrieve data, format reports and create script files to generate SQL. The course also provides the opportunity to students to write COBOL programs that utilize embedded SQL statements. Prerequisite: CIS 332

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COURSE DESCRIPTIONS

CIS 346  3 3 0 0 0  
DATA BASE DESIGN  
Students learn a systematic approach to database development using entity-relationship models, normalization and relational database design. Students will use this approach to identify and define business information requirements, create entity relationship models and transform the requirements into an initial database design. Prerequisite: CIS 303

CIS 402  3 3 0 0 0  OPEN  
COBOL  
Introduces the programming language COBOL. Topics include move, logical testing, control, page breaks, totals and others. Emphasis is given to business applications.

CIS 413  4 4 0 0 0  OPEN  
COBOL II  
Introduces advanced COBOL programming techniques. Emphasis is given to the SORT verb, multiple level tables and VSAM file access techniques. Prerequisite: CIS 402

CIS 421  4 3 2 0 0  
COBOL - INTERMEDIATE  
COBOL, VSAM structured programming involving sequential disk, table processing and file update processing, using IBM MCF text editor, VS/ESA JCL on an IBM ES/900 Mainframe. Prerequisite: CIS 402

CIS 435  3 3 0 0 0  
COBOL ON THE WORLD WIDE WEB  
Apply COBOL to the WWW using NetExpress from Merant. Topics include CGI Programs, Data access on the Web Server, GUI development for HTML based applications. Prerequisite: CIS 402

CIS 463  4 4 0 0 0  
CICS  
Provides theory and working knowledge of telecommunication programming. Students will code programs using CICS. Prerequisite: CIS 431

CIS 485  6 4 4 0 0  
PROGRAMMING PROJECTS-MAINFRAME  
Individual projects are assigned that require the student to apply the programming knowledge gained in prerequisite courses to the design and implementation of assigned business applications. Prerequisite: CIS 463

CIS 505  4 4 0 0 0  
STRUCTURED SYSTEMS ANALYSIS  
Designed to acquaint the student with the various considerations in the design of a system. The course considers project initiation, fact gathering, procedures, forms, system implementation and evaluation. Prerequisite: CSC 110, CIS 402

CIS 583  4 3 2 0 0  
ASSEMBLER  
An introductory course in the syntax rules of Assembler language programming. Business problems are analyzed and programmed. Prerequisite: CIS 402. Corequisite: CIS 595

CIS 588  3 3 0 0 0  
COMPUTER ORGANIZATION  
This course focuses on the relationship between computing hardware and machine language instruction sets. Computer system and microprocessors will be examined along with supporting hardware and the organization of their instruction sets. Programming in assembly language is studied in detail. Prerequisite: CIS 125 and CIS 154

CIS 593  4 3 2 0 0  
MAINFRAME OPERATIONS  
Provides an individual with a working knowledge of Disk Operating Systems/Virtual Storage Extended (DOS/VSE) job control language. Prerequisite: CIS 402

CIS 604  3 3 0 0 0  
VISUAL BASIC  
An elementary course in the use of the Visual BASIC programming language. The various commands will be presented; and students design, code and test several programs including file processing. Prerequisite: CIS 125 or equivalent

CIS 632  3 3 0 0 0  GENERAL  
ADVANCED VISUAL BASIC  
An applications approach developed around data file programming, Manipulation of string variables, data entry, formats, error checking routines, SQL data-based processing. Prerequisite: CIS 604

CIS 720  3 3 0 0 0  
HELP DESK OPERATIONS  
The purpose of this course is to provide students with a comprehensive understanding of the helpdesk environment and the knowledge, skills and abilities to work in the user support industry. Students will learn problem-solving and communication skills that are very valuable when providing user support. Through hands-on exercises and case projects, students will learn how to apply their knowledge and develop their ideas and skills. They will also learn how to work individually and in teams, which will prepare them for a team-oriented environment. Prerequisite: CIS 110

CON 703  3 3 0 0 0  
COMMUNICATION SKILLS  
Reading, writing, speaking and listening are studied as methods of exploring and evaluating technological advances in trades and industry. Adapting communication for different audiences, evaluating industry-related literature and basic business writing are emphasized.

CON 333  5 5 0 0 0  
MATERIALS/CONSTRUCTION THEORY  
An introduction to the materials used in the construction industry and the methods involved in the application of these building materials.

CON 334  7 0 1 5 0  
CONSTRUCTION TECHNIQUES  
A practical hands-on introductory experience that covers the construction process including rough and finish carpentry.

CON 336  1 0 2 0 0  
CARE/USE OF HAND/POWER TOOLS  
Proper care, use and selection of hand and power tools with an emphasis on maintenance and safety.

CON 337  1 0 2 0 0  
CONSTRUCTION BLUEPRINT READING  
Fundamentals of blueprint reading designed to allow the student to translate plans into practical job experience.

CON 338  1 0 2 0 0  
MATERIALS TAKETOFF  
A study of the techniques needed to create a materials list by reading a blueprint. Prerequisite: CON 337 should be taken concurrently or prior to this course

CON 341  2 1 2 0 0  
CONSTRUCTION DRAFTING & DESIGN  
An introduction to the fundamentals of design and basic drafting methods. Includes the preparation of the blueprint used to construct the student-built project. Prerequisite: CON 337

CON 342  3 0 7 0 0  
INTERIOR TRIM PRACTICES  
Advanced lab experience that emphasizes complex finish skills. The student will be able to demonstrate the skills and work habits necessary to complete tasks in a safe manner and to adapt previously learned skills to complete more complex building tasks. Prerequisite: CON 334

CON 346  4 1 6 0 0  
CONCRETE SYSTEMS & FORMING  
An introduction to concrete as a material and to concrete design, placement and finish. Identification and application to forming systems will be studied in the classroom and applied in the lab. Prerequisite: CON 336

CON 480  5 0 1 0 0  
CONST PROCEDURE/APPLICATION I  
This course includes footings, drainage, foundation, basement insulation and decking. (5-week session) Prerequisite: CON 333, 346, 342

CON 481  5 0 1 0 0  
CONST PROC & APPLICATIONS II  
This course includes exterior wall construction, interior wall construction, ceiling joist framing, rafter framing, exterior trim, window installation and roofing. (5-week session) Prerequisite: CON 480

CON 482  5 0 1 0 0  
CONST PROC & APPLICATIONS III  
This course includes concrete flatwork, insulation, drywall application, cabinet work and interior trim. (5-week session) Prerequisite: CON 481

CRI 100  3 3 0 0 0  GENERAL  
INTRO TO CRIMINAL JUSTICE  
An in-depth examination of the three components of the criminal justice system and the roles they play in society.

CRI 101  3 3 0 0 0  
ETHICS IN CRIMINAL JUSTICE  
OPEN  
Focuses on philosophical and theoretical issues and analyzes research findings to determine their implications for future practice. The student will learn how to identify and confront difficult ethical decisions they are likely to face in their daily routines.

VISIT US ONLINE: www.DMACC.edu 143
### Course Descriptions

<table>
<thead>
<tr>
<th>CRJ 107</th>
<th>3 2 2 0 0</th>
<th>SURVEY CRIM JUSTICE AGENCIES</th>
<th>OPEN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Study of the criminal justice system through an examination of actual agencies, focusing on theoretical vs. real roles and functions of the agencies. Includes on-site visits. Prerequisite: 24 hours of CRJ courses or instructor permission</td>
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<table>
<thead>
<tr>
<th>CRJ 109</th>
<th>3 3 0 0 0</th>
<th>THEORIES OF INTERVIEWING</th>
<th>OPEN</th>
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</thead>
<tbody>
<tr>
<td>The process of gathering information from others: the interviewee, the setting, types of questions, nonverbal communication, deception and theories of communication.</td>
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<thead>
<tr>
<th>CRJ 111</th>
<th>3 3 0 0 0</th>
<th>POLICE AND SOCIETY</th>
<th>OPEN</th>
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</thead>
<tbody>
<tr>
<td>An examination of the role of the police and corrections in American society, and a discussion of prominent issues. The course will examine the various eras of policing and correctional agencies. The structure and style of various policing and correctional agencies will also be covered. Agency application of internal and ethical issues including use of force will be examined. Strategies and policies to improve policing and correctional work environment will also be discussed.</td>
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<thead>
<tr>
<th>CRJ 128</th>
<th>3 3 0 0 0</th>
<th>VICTIMOLOGY</th>
<th>OPEN</th>
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</thead>
<tbody>
<tr>
<td>This course is an overview of the study of victims. The course covers the history of victimology, the plight of crime victims, society’s changing view of victims, and the role of law enforcement, the courts and corrections in dealing with victims. Victim groups with special needs, such as police officers/correctional officers who are injured or killed in the line of duty, are also examined.</td>
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<tr>
<th>CRJ 130</th>
<th>3 3 0 0 0</th>
<th>CRIMINAL LAW</th>
<th>GENERAL</th>
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</thead>
<tbody>
<tr>
<td>An examination of the elements of offenses and the procedural safeguards in the criminal process.</td>
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<thead>
<tr>
<th>CRJ 132</th>
<th>3 3 0 0 0</th>
<th>CONSTITUTIONAL LAW</th>
<th>GENERAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>A study of the application of constitutional principles to social and political questions including the powers of the national government vs. state government through focus on the incorporation issue and examination of the evolution of civil liberties guarantees.</td>
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<thead>
<tr>
<th>CRJ 135</th>
<th>3 3 0 0 0</th>
<th>CORRECTIONAL LAW</th>
<th>OPEN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Law in the field of corrections: procedural and substantive rights of both convicts and the state, “good time” determinants, multiple sentences and double jeopardy. Emphasis on sentencing and classification; efforts to reduce sentencing disparity.</td>
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<table>
<thead>
<tr>
<th>CRJ 136</th>
<th>3 3 0 0 0</th>
<th>JUVENILE LAW</th>
<th>GENERAL</th>
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</thead>
<tbody>
<tr>
<td>The social and legal aspects plus theories of juvenile delinquency, examination of procedures, legislation, juvenile court and prevention programs.</td>
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<thead>
<tr>
<th>CRJ 137</th>
<th>3 3 0 0 0</th>
<th>CRIMINAL INVESTIGATION</th>
<th>OPEN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rudiments of criminal investigation: techniques, principles, problems, sources of information and evidentiary processes.</td>
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<thead>
<tr>
<th>CRJ 138</th>
<th>3 2 2 0 0</th>
<th>OPERATING SYS. FOR FORENSICS</th>
<th>OPEN</th>
</tr>
</thead>
<tbody>
<tr>
<td>This course provides a comparative study of popular PC-class operating systems. Upon completion of this course, students will be familiar with the interface, file management, resource allocation and common administration procedures of various popular operating systems. Additionally, the course describes data organization and file properties that contribute to forensic investigation. Many discussion topics are reinforced with hands-on exercises and assignments.</td>
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<tr>
<th>CRJ 139</th>
<th>3 3 0 0 0</th>
<th>COMPUTER FORENSICS I</th>
<th>OPEN</th>
</tr>
</thead>
<tbody>
<tr>
<td>This course serves as a technical introduction to the search, seize and processing of electronic evidence. Topics covered in the course include a strong emphasis on investigative documentation, recognition of potential evidence sources, sterile evidence acquisition and analysis and data recovery methodologies. State-of-the-art hardware and software will be used in hands-on labs and case studies. Prerequisite: CRJ 167</td>
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<thead>
<tr>
<th>CRJ 140</th>
<th>3 2 2 0 0</th>
<th>COMPUTER FORENSICS II</th>
<th>OPEN</th>
</tr>
</thead>
<tbody>
<tr>
<td>This course provides a forum for discussion and experimentation with contemporary topics relating to digital/computer forensics. Topics include evidence analysis specific to networking environments and nonconventional data devices, low-level data recovery procedures, advanced cryptography and steganography and “live” analysis and recovery of server-oriented storage technologies. Software and hardware tools are widely used through various case studies and exercises to reinforce discussion topics. Prerequisite: CRJ 276</td>
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<thead>
<tr>
<th>CRJ 141</th>
<th>3 3 0 0 0</th>
<th>CRIMINAL JUSTICE</th>
<th>OPEN</th>
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</thead>
<tbody>
<tr>
<td>Institutional options for preventing recidivism. Introduction to therapeutic techniques. Comparison of punishment, Freudian treatments and behavior modification systems. Student presentation required.</td>
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<tr>
<th>CRJ 142</th>
<th>3 3 0 0 0</th>
<th>PENAL CODE AND PROCEDURAL LAW</th>
<th>GENERAL</th>
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</thead>
<tbody>
<tr>
<td>The legal system, prisons, jails, and police. Crime control and social change.</td>
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<thead>
<tr>
<th>CRJ 146</th>
<th>3 3 0 0 0</th>
<th>CORRECTIONAL TREATMENT METHODS</th>
<th>OPEN</th>
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</thead>
<tbody>
<tr>
<td>Examination of noninstitutional alternatives including probation and parole.</td>
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<thead>
<tr>
<th>CRJ 148</th>
<th>3 3 0 0 0</th>
<th>SCIENTIFIC INVESTIGATION</th>
<th>OPEN</th>
</tr>
</thead>
<tbody>
<tr>
<td>An introduction to investigative techniques that stresses the identification and examination of physical evidence from the time of its discovery until a final disposition by the courts.</td>
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<tr>
<th>CRJ 149</th>
<th>4 0 8 0 0</th>
<th>CRIME SCENE INVESTIGATION</th>
<th>OPEN</th>
</tr>
</thead>
<tbody>
<tr>
<td>An in-depth study into the nature of physical evidence including descriptions of forensic analysis, techniques for proper collection and preservation of evidence and interpreting the significance of scientifically evaluated evidence. Corequisite: CRJ 141</td>
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<thead>
<tr>
<th>CRJ 150</th>
<th>3 0 0 0 0</th>
<th>INTERNSHIP</th>
<th>OPEN</th>
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</thead>
<tbody>
<tr>
<td>Involves 150 hours of active internship for students in an agency other than one in which they may be employed. Synthesis paper required. (P/F) Prerequisite: Criminal History Background Check to determine eligibility.</td>
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<thead>
<tr>
<th>CRJ 151</th>
<th>2 0 4 0 0</th>
<th>SHEET METAL WELDING</th>
<th>VOC/TECH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic skills will be developed in oxygen-acetylene fusion welding and flame cutting. Gas metal arc (MIG) welding equipment and basic understanding of procedures related to auto collision repair. Safety is emphasized.</td>
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<thead>
<tr>
<th>CRJ 152</th>
<th>3 2 2 0 0</th>
<th>PLASTIC REPAIR</th>
<th>VOC/TECH</th>
</tr>
</thead>
<tbody>
<tr>
<td>The wide variety of solid plastics, flexible panels, plastic compounds and reinforced plastic panels now used in automobile manufacturing require separate repair procedures. Repair, replacement and refinishing of the substrates will be studied in classroom and the lab. Prerequisite: CRJ 841</td>
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<tr>
<th>CRJ 153</th>
<th>5 2 6 0 0</th>
<th>SHEET METAL FUNDAMENTALS</th>
<th>VOC/TECH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Automotive design, the materials used in construction, collision, corrective forces, procedures for repair and services are analyzed through class and lab study. Prerequisite: CRJ 101 must be taken concurrently or prior to this course</td>
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<thead>
<tr>
<th>CRJ 154</th>
<th>2 1 2 0 0</th>
<th>FRAME DAMAGE ANALYSIS</th>
<th>VOC/TECH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unibody design and construction has created a need for methods of damage analysis, gauging, measuring and sequencing total collision repair. This course emphasizes new technologies.</td>
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<thead>
<tr>
<th>CRJ 155</th>
<th>5 1 8 0 0</th>
<th>ADVANCED COLLISION REPAIR</th>
<th>VOC/TECH</th>
</tr>
</thead>
<tbody>
<tr>
<td>This course builds upon the knowledge and skill in previous auto collision courses to prepare the student to diagnose and repair conventional frame and unibody structural components. The theory and operating principles of unibody structural components will be emphasized. Lab instruction on late model vehicles will be included. Prerequisite: CRJ 502, 101</td>
<td></td>
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</tbody>
</table>
COURSE DESCRIPTIONS

CRR 742 212000
ESTIMATING THEORY
Vehicle damage estimating skills are needed to provide a written report. This report can then be used as a repair guide, a legal document, an analysis report and for business evaluation. Ability to use estimating guides and write estimates accurately will be emphasized.

CRR 760 220000
ADVANCED ESTIMATING
Estimating, customer relations and service selling are all important skills of ownership and management. Hand and computer estimates will be written. Labor, parts and material costs and profits will be studied. Customer and employee relations will be studied. Prerequisite: CRR 742

CRR 841 534000
PRINCIPLES OF REFINISHING
This course will give the student an overall understanding of the complexities of today’s auto refinishing. Developing industry standard preparation habits and spray painting skills with various chemicals will be studied.

CRR 876 636000
REFINISHING PRODUCTION
Industry application of colors and clear coats require the latest information on repair and refinishing of today’s vehicles. This course covers the latest manufacturers’ preferred methods for repair using current colors and chemicals. Color matching will be emphasized. Prerequisite: CRR 877, 202

CRR 877 738000
REFINISHING APPLICATIONS
This course covers the application techniques and equipment used in auto collision repair shops for refinishing and will deal with potential problems with chemicals. Sheet metal and plastic parts repair and replacement in preparation for painting will also be studied in the lab. Shop and personal safety will be emphasized. Prerequisite: CRR 841

CSC 110 322000
INTRO TO COMPUTERS
Open
Presents the basic concepts of computers and the effect that computers are having and will continue to have in the future. Incorporates theory as well as hands-on practice. Includes an introduction to Windows, Word, Excel, Access and the internet.

DEA 253 440000
DENTAL SCIENCE I
Introduction to the various sciences necessary for the dental assistant. Microbiology and oral pathology are covered. Prerequisite: DEA 256 must be taken concurrently or prior to this course

DEA 256 220000
DENTAL ANATOMY
The study of head, neck and dental anatomy is combined to give the student background information for application in dental assisting courses.

DEA 263 220000
DENTAL SCIENCE II
A continuation of Dental Science I. Emphasis on effects of drugs and emergency procedures. Prerequisite: CPR certification, DEA 253, 256

DEA 297 110000
ETHICS/JURISPRUDENCE SEMINAR
Continuation of DEA 591. Also includes the study of the ethics and legal responsibilities of the dental profession, as well as the functions and jurisprudence of the auxiliary personnel. Prerequisite: Second semester standing in Dental Assisting program. Corequisite: DEA 577

DEA 321 212000
DENTAL RADIOGRAPHY II
A continuation of Dental Radiography I. Weekly seminars for basic interpretation of radiographics and laboratory experience to develop student competence in making oral radiographic surveys. Prerequisite: DEA 253, 256, 507, DHY 161

DEA 424 102000
DENTAL MATERIALS LAB
Through laboratory experience the student learns techniques in preparation and utilization of dental materials. Prerequisite: DEA 256

DEA 507 644000
PRINCIPALS OF DENTAL ASSISTING
Basic concepts of chairside assisting are covered with emphasis on the role of the team in delivery systems. Terminology, instruments, equipment and basic procedures are covered. Prerequisite: DEA 253, 256, 424; DHY 221 must be taken concurrently or prior to this course

DEA 576 30012
DENTAL ASSISTING CLINIC I
Application of knowledge and skills as students rotate through dental offices, clinics and hospital clinics. General and specialty practices are included in rotations. Prerequisite: Current CPR Certification, DEA 253, 256, 507, 424; DHY 221, 161. Corequisite: DEA 591

DEA 577 400016
DENTAL ASSISTING CLINIC II
Continuation of DEA 576. Corequisite: DEA 297

DEA 591 110000
DENTAL ASSISTING SEMINAR
Discussion and problem-solving from clinical practice. Provides an awareness of types of office situations and discussion of clinical aspects of dental assisting and dentistry. Oral reports and weekly evaluations are required. Prerequisite: DEA 253, 256, 507, 424; DHY 221, 161. Corequisite: DEA 576

DEA 615 534000
CLINICAL DENTAL ASSISTING
A continuation of Preclinical Dental Assisting (DNA507) with emphasis on operative dentistry, dental specialties and advanced functions. The laboratory phase develops students’ competencies in clinical assisting. Prerequisite: DEA 253, 256, 507, 424, DHY 221, 161

DEA 702 220000
DENTAL OFFICE PROCEDURES
Covers the business aspects of the dental office: patient relations, appointment book management, financial records, telephone communications, credits and collections, dental insurance, tax records, supply and inventory systems. Prerequisite: 35 WPM keyboard skills and computer literacy

DHY 114 440000
DENT HYG ANATOMICAL SCIENCE
Programmed dental anatomy supplemented by lectures, quizzes and discussions on the development, morphology and functions of the teeth. Anatomy and physiology of the head and neck including mastication. Prerequisite: BIO 164

DHY 121 220000
ORAL HISTOLOGY & EMBRYOLOGY
General and oral histology beginning with a consideration of cytology that is followed by a study of the fundamentals of oral embryology and the normal microscopic anatomy of oral tissues. Prerequisite: BIO 164

DHY 133 330000
PHARMACOLOGY
The study of drugs and their action on living tissue including their use as an aid in the diagnosis, treatment and prevention of disease or to control or improve any physiological or pathological condition. Prerequisite: CHM 132, DHY 114, 181, 182

DHY 141 330000
GENERAL & ORAL PATHOLOGY
Basic concepts of disease process and the oral manifestations of inflammation, degenerative changes, neoplasms and developmental anomalies of the oral cavity. Prerequisite: BIO 164, DHY 121, 114

DHY 161 322000
ORAL RADIOLOGY
Open
Lecture includes radiation physics; biological effects; radiation safety and protection; properties of x-ray film and techniques of exposing; processing, mounting and evaluating film. Laboratory experiences develop competence in exposing, processing, mounting and evaluating radiographs. Corequisite: DEA 256 and DEA 507 or DHY 114

DHY 164 212000
ORAL RADIOLOGY II
Open
A continuation of Dental Radiography I. Weekly seminars for basic interpretation of radiographics and laboratory experience to develop student competence in taking oral radiographic surveys. Prerequisite: DHY 161. Corequisite: DHY 162

DHY 170 220000
PRINCIPLES OF DENTAL HYGIENE
Open
Basic principles of clinical dental hygiene are introduced. The etiology of deposits and their effect on oral tissue and the theory and techniques of instrumentation in removal of deposits are emphasized in the practicum portion. Prerequisite: BIO 154, CHM 122. Corequisite: DHY 171

DHY 171 306000
PRINCIPLES OF DENTAL HYG PRACT
Open
See DHY 170. Prerequisite: BIO 164, CHM 122. Corequisite: DHY 170

DHY 181 220000
DENTAL HYGIENE I
Open
A continuation of instrumentation techniques. Emphasis is placed on patient assessment and principles of patient education in chairside instruction. Topics include polishing techniques, topical application of fluoride and supplementary procedure. Prerequisite: DHY 170, 171. Corequisite: DHY 182

DHY 182 408000
CLINICAL DENTAL HYGIENE I
Open
See DHY 181 Prerequisite: DHY 170, 171. Corequisite: DHY 181, 164

DHY 211 220000
PERIODONTOLOGY
Open
The clinical characteristics, histopathology, etiology and treatment of periodontal diseases are presented. Special emphasis is placed on the role of the dental hygienist in the prevention and management of periodontal diseases. Prerequisite: DHY 121, 181, 182. Corequisite: DHY 282

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DHY 221  DENTAL MATERIALS  OPEN
A study of materials utilized in the practice of dentistry. Properties of dental materials and ADA requirements are presented. Corequisite: DEA 256 and DEA 424 or DHY 114 and DHY 223 must be taken concurrently or prior to this course.

DHY 223  DENTAL MATERIALS LAB  OPEN
Through laboratory experience the student learns techniques in preparation and utilization of dental materials. Corequisite: DHY 221.

DHY 232  NUTRITION/PREVENTIVE DENTISTRY  OPEN
Lecture-discussion course relating the nutrients and their effects on general and oral health throughout the life cycle. An introduction to the principles of counseling and instruction in preventive dentistry necessary to maintain optimum oral health. Prerequisite: BIO 164, CHM 132.

DHY 234  NUTRITION/DENTAL COUNSELING  OPEN
A combined teaching, learning and practice course emphasizing the identification and analysis of diet as it relates to dental health. Students will evaluate caries and periodontal disease risk levels and perform counseling and instruction in elements of nutrition as they relate to the prevention of dental disease. Prerequisite: BIO 164, CHM 132, HCM 236.

DHY 251  COMMUNITY ORAL HEALTH  OPEN
The course relates the concepts of dental public health and preventive dentistry including principles of biostatistics, epidemiology, dental manpower and delivery systems. Students plan, implement and evaluate a community dental health project. Prerequisite: DHY 261.

DHY 261  DENTAL HEALTH EDUCATION  OPEN
An introduction to the principles of instruction in healthcare. The course will include developing, presenting and evaluating dental health education programs for public schools and community groups. Prerequisite: DHY 170, 171.

DHY 281  DENTAL HYGIENE II  OPEN
A continuation of clinical practices. Further instruction and application in techniques for a complete oral prophylaxis and Phase I therapy. Topics include smoking cessation, intraoral photography, sonic scaling and air polishing. Prerequisite: DHY 181, 182. Corequisite: DHY 282.

DHY 282  CLINICAL DENTAL HYGIENE II  OPEN

DHY 291  DENTAL HYGIENE III  OPEN
A continuation of clinical practices. Topics include dental hygiene care for individuals with special needs, care planning, third-party payment applications, substance abuse and dependent adult abuse. Prerequisite: DHY 281, 282. Corequisite: DHY 292.

DHY 292  CLINICAL DENTAL HYGIENE III  OPEN

DHY 301  DENTAL HYGIENE IV  OPEN
A continuation of clinical practices. Legal, ethical and management aspects of the dental care system are considered. Career alternatives and job-seeking skills are demonstrated. Prerequisite: DHY 292, 291. Corequisite: DHY 302.

DHY 302  CLINICAL DENTAL HYGIENE IV  OPEN
See DHY 301. Prerequisite: DHY 292, 291. Corequisite: DHY 301.

DRA 101  INTRODUCTION TO THEATRE  CORE
A survey of the elements and techniques of theatre with emphasis on acting, directing and playwriting. Attendance at dramatic production encouraged.

DRA 130  ACTING I  GENERAL
Training of the body, voice and mind as acting instruments. Course includes acting exercises, scene analysis and performance.

DRA 147  CREATIVE DRAMA SCHOOL/REC  GENERAL
Elements of improvisational acting. Students will learn approaches for participating in as well as leading creative drama activities.

DRA 945  PRACTICUM I  GENERAL
Practical experience in acting, directing and stage design. Students will be involved in all stages of production, from auditions to final performance. May be repeated for up to eight semester hours of credit.

DRA 946  PRACTICUM II  GENERAL
See DRA 945.

DRA 948  PRACTICUM III  GENERAL
See DRA 945.

DSL 145  BASIC ELECTRICITY  VO/C/TECH
An introduction to basic electricity and electronic principles that apply to diesel-powered equipment. Systems and components covered include starting, charging, lighting and accessories.

DSL 155  ADVANCED ELECTRICITY  VO/C/TECH
The electrical circuitry on diesel-powered equipment is covered. Included are troubleshooting, diagnosing and repair procedures. Experienced individuals may contact the instructor to gain admittance to this course. Prerequisite: DSL 145.

DSL 291  DIESEL ENGINE TUNE-UP  VO/C/TECH
Information on preventative measures to eliminate failures and diagnose engine problems. Instruction related to tune-up procedures.

DSL 296  DIESEL ENGINES I  VO/C/TECH
Instruction provided in the technical and nontechnical aspects of diesel engines. This information will give the students the basic understanding needed to continue in the Diesel Mechanic program.

DSL 330  DIESEL ENGINE TUNE-UP  VO/C/TECH
Information on preventative measures to eliminate failures and diagnose engine problems. Instruction related to tune-up procedures.

DSL 356  DIESEL ENGINES II  VO/C/TECH
Instruction in diagnosing problems and the nature of repairs needed. Information on preventative measures to eliminate failures. Prerequisite: DSL 356.

DSL 407  DIESEL FUELS SYSTEMS  VO/C/TECH
The student will be introduced to basic fuel system principles and operational theory of some commonly used systems as well as general repair and diagnostic procedures. Prerequisite: DSL 366.

DSL 409  DIESEL ELECTRONICS  VO/C/TECH
A study of electronic fundamentals, lab work with electronic components and testing equipment. Diesel engines that are computer-controlled are used in lab to demonstrate applications of electronics on diesel power that meet the demands of the future. Experienced individuals may contact the instructor to gain admittance to this course. Prerequisite: DSL 145.

DSL 546  POWER TRAINS I  VO/C/TECH
Class and lab activities in the design and operation of drive train components including clutches, manual transmissions, drive lines, rear axles and wheel bearings.

DSL 605  HYDRAULICS AND BRAKES  VO/C/TECH
The study of basic mobile hydraulics. Introduces principles, components, fluid systems and circuits of hydraulic systems. Vehicle braking includes study of hydraulic and air brake systems.

DSL 733  AIR CONDITIONING  VO/C/TECH
A course on basic air conditioning theory and design. Emphasis will be placed on various system controls and on service operations.

DSL 830  OPERATION & MAINTENANCE  VO/C/TECH
Instruction in the proper methods of maintaining all equipment. Safety will be emphasized.

DSL 845  HEAVY EQUIPMENT REPAIR  VO/C/TECH
Instruction in the repair and service of equipment relating to the heavy equipment industry. This includes all phases normally done in a general repair shop. Instruction is given under structured lab and field conditions. Experienced individuals may contact the instructor to gain admittance to this course. Prerequisite: DSL 366, 546, 605, 145.
COURSE DESCRIPTIONS

DSL 855 51800 TRUCK REPAIR VOC/TECH
Instruction in the repair and service of equipment relating to the trucking industry. This includes all phases normally done in a general repair shop. Instruction is given under structured lab and field conditions. Experienced individuals may contact the instructor to gain admittance to this course. Prerequisite: DSL 366, 546, 605, 145.

DTM 350 11000 HEALTH FIELD VOC/TECH
Roles of dietary personnel in health facilities and state and federal guidelines. Explore managerial aspects within facilities.

DTM 351 10200 FOOD PREPARATION VOC/TECH
Basic principles and development of techniques as they apply to preparation of each food group and the criterion for evaluating product quality. Laboratory experience.

DTM 352 22000 SANITATION/MEAL SERVICE VOC/TECH
Methods of efficiently serving safe, pleasing food. An awareness of sanitation will be created for all areas of food service.

DTM 353 11000 NUTRITION LIFE CYCLE VOC/TECH
An in-depth study (social, physiological and psychological need) of residents from infancy to geriatric. Explore the therapeutic role of food.

DTM 354 11000 MODIFIED DIETS VOC/TECH
An assessment of special diets, using the approved diet manual, a review of food guidelines and hints for making modified diets more appetizing.

DTM 355 11000 FOOD PRODUCTION MANAGEMENT VOC/TECH
Total production needs, equipment layout, work methods, food storage, food preparation, service, sanitation and use of computers in food service.

DTM 356 22000 FOOD SERVICE MANAGEMENT VOC/TECH
The management functions required to organize and maintain an efficient, quality, dietary department are developed.

DTM 361 10004 FOOD PREP FIELD EXPERIENCE VOC/TECH
Application and evaluation of food preparation in a healthcare facility. Practical experience in a selected healthcare facility supervised by a registered dietitian. (P/F)

DTM 362 10004 SANITATION/MEAL SVC FIELD EXP VOC/TECH
Application and evaluation of sanitation and meal service in healthcare facilities. Practical experience in a selected healthcare facility supervised by a registered dietitian. (P/F)

DTM 363 10004 NUTRITION LIFE CYCLE FIELD EXP VOC/TECH
Application and evaluation of nutritional aspects in healthcare facilities. Practical experience in a selected healthcare facility supervised by a registered dietitian. (P/F)

DTM 364 10004 MODIFIED DIET/FIELD EXPERIENCE VOC/TECH
Application and evaluation of modified diets in healthcare facilities. Practical experience in a selected healthcare facility supervised by a registered dietitian. (P/F)

DTM 365 10004 FOOD PRODUCTION FIELD EXP VOC/TECH
Application and evaluation of food production in healthcare facilities. Practical experience in a selected healthcare facility supervised by a registered dietitian. (P/F)

DTM 366 10004 FOOD SERVICE MGMT FIELD EXP VOC/TECH
Application and evaluation of food service management in healthcare facilities. Practical experience in a selected healthcare facility supervised by a registered dietitian. (P/F)

ECE 103 33000 INTRO TO EARLY CHILDHOOD ED OPEN

ECE 130 11000 EMERGENCY CARE OPEN
Cardio-pulmonary resuscitation according to Iowa Heart Guidelines. Childhood diseases, immunization laws and environmental safety for children are discussed. Designed for day care personnel. Certification for first aid and CPR are awarded upon successful completion. Course may be repeated for a maximum of 3 credits.

ECE 133 33000 CHILD HEALTH, SAFETY & NUTRITION OPEN
Provision of a safe and healthy environment for young children in a group setting. Specifically covered are nutrition analysis, menu planning, indoor and outdoor safety principles and assessments, health assessments and policies, and the care of children with chronic health problems.

ECE 158 33000 EARLY CHILDHOOD CURRICULUM I OPEN
Focuses on the development, implementation and assessment of appropriate environments and curricula for young children ages three through eight. Students prepare to utilize developmentally appropriate practices in a context of family and culturally sensitive care. Emphasis is on understanding children’s developmental stages and developing appropriate learning opportunities, interactions and environments in the following areas: dramatic play, art, music, fine and gross motor play.

ECE 159 33000 EARLY CHILDHOOD CURRICULUM II OPEN
Focuses on the development, implementation and assessment of appropriate environments and curricula for young children ages three through eight. Students prepare to utilize developmentally appropriate practices in a context of family and culturally sensitive care. Emphasis is on understanding children’s developmental stages and developing appropriate learning opportunities, interactions and environments in the following areas: emergent literacy, math, science, technology and social studies. Prerequisite: ECE 158 or instructor approval.

ECE 170 33000 CHILD GROWTH & DEVELOPMENT OPEN
Reviews typical and atypical development of children from conception to adolescence in all developmental domains. Presents interactions between child, family and society within a variety of community and cultural contexts. Examines theories associated with our understanding of children.

ECE 215 33000 HOME, SCHOOL & COMM RELATIONS OPEN
Focuses on current understanding of supporting children and families in relation to home, school and community contexts. Emphasis is on building respectful, culturally sensitive relationships with families, utilizing community resources, and working with diverse families.

ECE 221 33000 INFANT/TODDLER CARE AND EDUC. OPEN
Focuses on care, education and assessment of children from birth to thirty-six months. Prepares students to utilize developmentally appropriate practices including responsive caregiving, routines as curriculum, importance of relationships with diverse families and a focus on the whole child in inclusive settings.

ECE 243 33000 EARLY CHILDHOOD GUIDANCE OPEN
Focuses on effective approaches and positive guidance strategies for supporting the development of all children. Emphasizes supportive interactions and developmentally appropriate environments. Uses assessment to analyze and guide behaviors. Studies impact of families and diversity on child guidance. Corequisite: ECE 243 or instructor approval.

ECE 262 30090 EARLY CHILDHOOD FIELD EXPER OPEN
Supervised experience in selected early childhood settings. Includes integration of theory, research and reflective practice. Provides an understanding of developmentally appropriate practices and the developmental stages of diverse populations of young children and families. Emphasizes professional relationships and behavior, appropriate adult/child interactions, basic curriculum planning and program routines. Prerequisite: ECE 103, ECE 133, ECE 159, ECE 170, ECE 243, ECE 343, ECE 359 or instructor permission. 2.0 GPA. Current CPR/First Aid Certification. Prerequisite OR Corequisite: ECE 221.

ECE 281 20008 PRACTICUM OPEN
Placement in a community-based program for typically or atypically developing young children in an inclusive setting. Emphasis is on the development of competencies necessary for employment in a similar setting. Prerequisite: completion of 10 credits in Early Childhood Education with a 2.0 GPA or permission of instructor.

ECE 290 33000 EARLY CHILDHOOD PROGRAM ADMIN OPEN
Course covers basic principles involved in setting up and administering an early childhood program. Emphasis placed on licensing regulations, bookkeeping, insurance, enrollment and record keeping. Designed for second-year students and persons interested in becoming a program administrator. Prerequisite: Accepted into the Early Childhood Education program and a minimum of 12 credits in ECE or instructor permission.

ECE 343 10200 EARLY CHILDHOOD GUIDANCE LAB OPEN
Focuses on effective approaches and positive guidance strategies for supporting the development of all children. Students observe for and utilize strategies taught in ECE 243. Corequisite: ECE 243 or instructor approval.
COURSE DESCRIPTIONS

ECE 359 102.00 OPEN
ECE CURRICULUM II LAB
Students practice the selection and use of assessment techniques, plan and set up age, individually and culturally appropriate learning centers, activities and group experiences for young children. Emphasis is on understanding children's developmental stages, identifying and participating in appropriate learning opportunities, interactions and environments in the following areas: emergent literacy, math, science, technology, social studies, creative art, music and movement, dramatic play, fine and gross motor play and outdoor experiences. Prerequisite: ECE 158. Corequisite: ECE 159

ECE 932 20.010 OPEN
EARLY CHILDHOOD INTERNSHIP
Students apply skills and knowledge related to children, families and the profession in a self-selected community-based setting. Students are encouraged to identify a placement that reflects their individual interests in the field. Emphasis on professional expectations and behavior, appropriate interactions, planning, implementation and assessment and exploring multiple facets of overall program operations. Prerequisites: ECE 103, ECE 133, ECE 159, ECE 170, ECE 243, ECE 343, ECE 359, “C” or better in ECE 343 and ECE 359, 2.0 ECE program GPA; or instructor permission. Current CPR/First Aid Certification. Internship application is required the semester prior to enrollment in the course. Prerequisite or Corequisite: ECE 215, ECE 221, ECE 290

ECN 120 3.000 CORE
PRINCIPLES OF MACROECONOMICS
This course is an introduction to the basic macroeconomic concepts and principles. It deals with problems of resource allocation, supply and demand, national income, employment, price levels, fiscal and monetary policy, money and banking systems and elements of global finance. ECN 120 is a prerequisite for ECN 130.

ECN 130 3.000 CORE
PRINCIPLES OF MICROECONOMICS
Course covers survey of demand and supply conditions, cost structure, market structure and how these elements affect individual household, business firms, government and global trade. ECN 120 is not a prerequisite for ECN 130.

EDU 218 2.000 OPEN
INITIAL FIELD EXPERIENCE
Course will provide opportunities to enhance understanding of the teaching profession and assist with decisions to pursue a career in education. Time spent observing, assisting and teaching in a classroom with a licensed educator. Various opportunities for interacting with students, learning instructional strategies and collaborating with teachers. Students will gain a greater understanding of the daily expectations of a teacher. Prerequisite: EDU 215

EDU 245 3.000 OPEN
EXCEPTIONAL LEARNER
A survey of exceptional learners in the classroom will be explored. History, philosophy, current issues, trends and mainstreaming will be discussed.

EGR 100 11.000 OPEN
ENGINEERING ORIENTATION
Introduction to the engineering disciplines and the engineering profession. Considerations in choosing an engineering curriculum, information concerning college policies, procedures and resources. Opportunities to interact with engineering departments at a four-year institution.

EGR 150 2.000 OPEN
ENGINEERING FORTRAN
The FORTRAN language in batch and interactive modes with an emphasis on solutions to engineering problems. Prerequisite: MAT 130 must be taken concurrently with or prior to this course.

EGR 155 2.000 OPEN
ENGINEERING C/C++
Learn to solve engineering problems by computer using the C/C++ language. Emphasis is placed on program logic, organization and numerical methods. Prerequisite: MAT 130 must be taken concurrently with or prior to this course.

EGR 161 2.000 OPEN
ENGINEERING COMPUTATIONS
This course includes the organization, solution and presentation of engineering problems. Topics include S.I. units and selected engineering topics. Prerequisite: MAT 130 must be taken concurrently with or prior to this course.

EGR 166 4.240 OPEN
ENGR GRAPHICS/CONCEPT DESIGN
An integration of conceptual design, engineering graphics and computer-aided design. This course includes orthogonal projection applied to three-dimensional geometry and engineering drawing. Instrument and free-hand application to an open-ended project that includes a formal engineering report. Prerequisite: MAT 130 must be taken concurrently with or prior to this course.

EGR 180 3.000 OPEN
STATICS
This course includes the vector and scalar analysis of coplanar and non-coplanar force systems, equilibrium concepts, friction, centroids, moments and products of inertia. Mohr's circle, radius of gyration, internal forces, shear and bending moment diagram. Prerequisite: PHY 213. Corequisite: MAT 217 must be taken concurrently with or prior to this course.

ELE 134 3.2200 VOC/TECH
ADVANCED MOTOR CONTROLS
Additional topics in industrial motor controls. Course includes wiring of AC & DC motors, power distribution, solid-state controls, proximity controls and frequency drives. Prerequisite: ELE 303, 134

ELE 093 11.000 VOC/TECH
CONCEPTS ELECTRONICS/COMPUTERS
This course is designed for students who need additional practical and technical skills to succeed in electronics and computer networking programs. Skills that will be developed include learning how to approach problems and manipulating formulas to solve problems. College preparatory courses cannot be used to fulfill degree requirements. Corequisite: ELE 106

ELE 106 3.3000 VOC/TECH
BASIC MATH FOR ELECTRONICS
Mathematics related to basic electronics. It includes basic algebra, right triangle trigonometry, scientific notation, with applications to DC and AC circuitry.

ELE 108 4.4000 VOC/TECH
MATH - ELECTRONICS & COMPUTERS
Introduction to mathematical skills needed by electronics/computer technicians.

ELT 119 3.2200 VOC/TECH
PROGRAMMABLE LOGIC CONTROLLERS
This course covers PLC operation and programming techniques to include relay logic, timers, counters, sequencers, discrete I/O, analog I/O, networking, remote I/O, workstations, advanced programming techniques and interfacing with personal computers. Prerequisite: ELT 134

ELT 125 3.2200 VOC/TECH
ADVANCED PLC
This course is designed for the student who is already proficient with ladder logic and loading programs into PLCs. The course will introduce the student to both hardware and software operator control panels, analog sensor interfacing, analog programming and exchange of data over networks. A hands-on lab component will give the student the opportunity to install, program and troubleshoot networked PLC hardware.

ELT 126 2.2000 VOC/TECH
INDUSTRIAL ELECTRONICS
The devices and circuits used in thyristor control of machines are presented. It includes phase control of DC motors, triac control of AC motors, as well as various speed control circuits. Prerequisite: ELT 134

ELT 134 3.2200 VOC/TECH
MOTOR CONTROLS
An introduction to industrial motor controls. During this course, students will use ladder diagrams and control devices to implement practical control systems.

ELT 143 3.2200 VOC/TECH
MECHANISMS
This introductory course covers linear and angular displacement, velocities, and accelerations of linkages, gear trains and belt and friction drives. Included topics are vectors, simple and complex machines and toggle and intermittent motions mechanisms. Corequisite: ELT 144

ELT 144 2.0400 VOC/TECH
MECHANISMS LAB
The principles of drives and linkages discussed in ELT 143 are evaluated using precision components. Major principles evaluated are speed ratios, torque, power and efficiency. Lab projects are applications of principles of process control and robotics interfacing mechanical motion and energy requirements with programmable control concepts. Corequisite: ELT 143

ELT 158 3.3000 VOC/TECH
NEC RESIDENTIAL
The basic principles of the NEC for layout and construction for residential wiring systems. Apply code rules to house wiring installations. Discuss security systems, fire and smoke detectors, low-voltage and remote controls.

ELT 159 3.0600 VOC/TECH
NEC RESIDENTIAL LAB
Utilize the basic principles of the NEC for layout and residential electrical wiring systems. Apply code rules, using hands-on approach for residential electrical installations from simplistic to complicated circuit wiring.

ELT 172 3.3000 VOC/TECH
NEC COMMERCIAL/INDUSTRIAL
The basic principles of the NEC for layout and construction for commercial wiring and industrial wiring systems. Apply basics of wiring into the planning of typical commercial and industrial installations. Configure how load requirements are converted into branch circuits then into feeders, and into main electrical services.
ELT 173 4 1 6 0 0  NEC COMMERCIAL/INDUSTRIAL LAB VOC/TECH
Utilize the basic principles of the NEC for layout of commercial and industrial wiring systems. Apply code rules, using hands-on approach for commercial and industrial electrical installations from simplistic to complicated wiring.

ELT 174 2 2 0 0 0  ELECTRICAL GROUNDING VOC/TECH
The understanding of grounding and eliminating the misconceptions when dealing with NEC requirements for installation.

ELT 181 1 1 0 0 0  ADV MATH FOR ELECTRONICS TECH VOC/TECH
This course is a continuation of concepts covered in MATH FOR ELECTRONICS & COMPUTERS. Topical emphasis includes applications involving trigonometry of vectors and oblique triangles and logarithms.

ELT 209 3 3 0 0 0  MOTOR CONTROL VOC/TECH
Troubleshoot electro-mechanical motor controls and gain an understanding of ladder diagrams. Students should have a general knowledge of electricity to take this course.

ELT 303 3 2 2 0 0  PRINCIPLES OF ELECTRICITY VOC/TECH
For beginners, theory, controlling electricity, voltage, amps, resistance, wattage, series and parallel circuits, DC & AC, batteries, electric lighting, generators and motors.

ELT 307 2 2 0 0 0  DIGITAL CIRCUITS VOC/TECH
An analysis of those circuits that form basic building blocks for a digital system, including logical gates such as OR, NOR, AND, and NAND, storage registers and counters. Corequisite: ELT 308

ELT 308 2 0 4 0 0  DIGITAL CIRCUITS LAB VOC/TECH
Laboratory evaluation of small-scale integrated circuits and medium-scale integrated circuits. In addition to basic and/or gates, it includes decoders, encoders, counters and multiplexers. Corequisite: ELT 307

ELT 325 3 3 0 0 0  DIGITAL ELECTRONICS VOC/TECH
An analysis of those circuits that form basic building blocks for a digital system, to include logical gates, such as OR, NOR, AND, and NAND, storage registers, counters and microprocessors. Corequisite: ELT 326

ELT 326 3 0 6 0 0  DIGITAL ELECTRONICS LAB VOC/TECH
Laboratory evaluation of small-scale integrated circuits and medium-scale integrated circuits. In addition to basic and/or gates, it includes comparators, decoders, encoders, counters, multiplexers, and microprocessors. Corequisite: ELT 325

ELT 328 3 3 0 0 0  DC & AC FUNDAMENTALS VOC/TECH
An introductory course in DC and AC fundamentals. Subject matter includes Ohm’s law, series and parallel circuits and measuring instruments.

ELT 329 3 0 6 0 0  DC & AC FUNDAMENTALS LAB VOC/TECH
This laboratory will enable the student to analyze basic C – L – R circuitry. Basic test equipment usage will also be presented. Prerequisite: ELT 328 must be taken concurrently with or prior to this course.

ELT 335 4 4 0 0 0  ELECTRIC CIRCUIT ANALYSIS I VOC/TECH
An analytical introduction to direct and alternating current fundamentals essential in all phases of electricity and electronics. Topics covered include Ohm’s law, Kirchhoff’s law, Thévenin-Norton and Superposition theorems, impedance, resonance, series and parallel circuits, resistors, capacitors, inductors, batteries and meters. Corequisite: ELT 336

ELT 336 2 0 4 0 0  ELECTRIC CIRCUIT ANALYSIS I LAB VOC/TECH
Basic experiments in AC and DC circuit analysis including familiarization with basic test instruments, series and parallel circuits (using resistors, capacitors, inductors, batteries and power supplies) and applications of electrical laws and theorems. Corequisite: ELT 335

ELT 337 3 3 0 0 0  ELECTRIC CIRCUIT ANALYSIS II VOC/TECH
Deals with principles and electrical properties of semi-conductor diodes, transistors, integrated circuits, and integrated circuit amplifiers complete with mathematical analysis of equivalent circuits and their evaluation. Prerequisite: ELT 335, 336. Corequisite: ELT 338

ELT 338 3 0 6 0 0  ELECTRIC CIRCUIT ANALYSIS II LAB VOC/TECH
An analysis of solid-state circuitry. It includes both transistor and integrated circuit experiments. Linear amplifiers and active filters are evaluated. Students will attend a minimum of three industrial tours, which may take place outside of regular class time. Prerequisite: ELT 335, 336. Corequisite ELT 337

ELT 339 3 1 4 0 0  FABRICATION TECHNIQUES VOC/TECH
Rendering of isometric and orthographic projection drawings. Soldering techniques, fabrication of sheet metal enclosures and production of printed circuit boards using photographic and etching methods.

ELT 474 3 3 0 0 0  COMMUNICATIONS SYSTEMS VOC/TECH
The analysis of communications systems including transmission and reception of AM and FM radio, television, satellite and microwave including antenna and transmission line theory. Prerequisite: ELT 378, 380. Corequisite: ELT 475

ELT 475 3 0 6 0 0  COMMUNICATIONS SYSTEMS LAB VOC/TECH
Laboratory experiments in radio, television, satellite and microwave systems including the construction and alignment of a broadcast radio receiver. Prerequisite: ELT 378, 380. Corequisite: ELT 474

ELT 478 3 3 0 0 0  BASIC IMAGING DEVICES VOC/TECH
An analysis of various imaging systems including laser printers, copiers, fax machines, scanners and accessories such as document feeders and sorters, monitors, cameras, LCD displays. Prerequisite: ELT 378, 380. Corequisite: ELT 479

ELT 479 3 0 6 0 0  BASIC IMAGING DEVICES LAB VOC/TECH
Experience in troubleshooting, service and repair of copiers, laser printers, fax machines, scanners and peripherals, monitors, cameras, LCD displays. Prerequisite: ELT 378, 380. Corequisite: ELT 478

ELT 482 3 3 0 0 0  SECURITY SYSTEMS VOC/TECH
Analysis of video monitoring systems, fire and intruder alarm systems, climate control systems. Prerequisite: ELT 781, 782. Corequisite: ELT 483

ELT 483 4 0 8 0 0  SECURITY SYSTEMS LAB VOC/TECH
Installation, maintenance and troubleshooting of various security systems. Prerequisite: ELT 781, 782. Corequisite: ELT 482

ELT 484 3 3 0 0 0  MEDICAL ELECTRONICS VOC/TECH
This course trains the student in electrical safety testing and the repair, calibration and preventive maintenance of patient monitoring equipment such as ECG, blood pressure, defibrillators, ICU, CCU central station monitoring systems and the respiratory instrumentation. Included will be a self-paced study of medical terminology. Prerequisite: ELT 781, 782. Corequisite: ELT 485
COURSE DESCRIPTIONS

ELT 652 42400 COMPUTER REPAIR & NETWORKING VOC/TECH
This course is designed for the student who is already proficient with computers and electrical circuitry. The course follows the recommendations of CompTIA on the subjects and materials to assist the student in learning about computer hardware and functions needed to pass the A Plus exam. A detailed study and hands-on lab component give the student the opportunity to install and troubleshoot computer and networking hardware. Prerequisite: ELT 387, 337

ELT 731 21200 ROBOTICS VOC/TECH
The course provides an introduction to robotic fundamentals. The student will examine parameters of robot operation and program robots for various applications.

ELT 735 21200 INTRODUCTION TO EMS CELL VOC/TECH
This course introduces the student to all aspects of a flexible manufacturing cell. It will familiarize the student with cell software and hardware. It includes labs on all cell components. Prerequisite: ELT 134 or 119

ELT 781 22000 ELECTRO-MECHANICAL SYSTEMS VOC/TECH
The basic theories, concepts and principles of electro-mechanical devices such as relays, contactors and DC/AC motors will be covered, as well as the basic principles of mechanical relationships including gears, pulleys, belt drives, wheel and axle, inclined plane, screw, wedge and levers. Pneumatic devices such as compressors, motors, valves and actuators are covered. Also covered will be basic sensors. Prerequisite: ELT 387, 388. Corequisite: ELT 781

ELT 782 20400 ELECTRO-MECHANICAL SYSTEMS LAB VOC/TECH
Application of the basic theories, concepts and principles of electro-mechanical devices. Projects are applications of principles used in business machines, security systems and medical electronics systems including construction of various examples of compound machines using wheel and axle, gears, levers and belt drives. Projects using basic sensors, pneumatic valves, cylinders and actuators will be constructed. Students will participate in a minimum of four two-hour, job-shadowing experiences that may take place outside of regular class time. Prerequisite: ELT 387, 388. Corequisite: ELT 781

ELT 791 33000 HYDRAULICS & PNEUMATICS VOC/TECH
The basic principles of fluid power and the operation and application of fluid power components are introduced. Devices such as valves, linear and rotary actuators are evaluated in the laboratory. In addition, pneumatic position control servomechanisms are evaluated. Corequisite: ELT 792

ELT 792 20400 HYDRAULICS & PNEUMATICS LAB VOC/TECH
The basic principles of fluid power and the operation and application of fluid power components are introduced. Devices such as valves, linear and rotary actuators are evaluated in the lab. Corequisite: ELT 791

ELT 793 32200 ADVANCED FLUID POWER VOC/TECH
An advanced course that includes demonstrations of pressure-compensated pumps and valves. Electronic controls and monitoring of hydraulic systems, evaluating various fluids for hydraulic systems, describing and observing the operation of fluid power in various industrial/mobile situations will be covered. Prerequisite: ELT 791, ELT 792

ELT 816 22000 SYSTEMS TROUBLESHOOTING VOC/TECH
A study of electronic systems troubleshooting theory, methods and techniques. Prerequisites: ELT 478, 479, 474, 475, 482, 483. Corequisite: ELT 817

ELT 817 30600 SYSTEMS TROUBLESHOOTING LAB VOC/TECH
A hands-on experience troubleshooting and repairing a variety of electronic equipment such as copiers, security monitors and cameras, radio, television and satellite systems. Prerequisite: ELT 478, 479, 474, 475, 482, 483. Corequisite: ELT 816

ELT 870 31400 ELECTRONICS CAPSTONE PROJECT VOC/TECH
This course provides hands-on experience in a significant design project involving technological competence, open-ended problem-solving, teamwork and both written and oral communication skills. Prerequisite: Successful completion of requirements of first four terms of the Electronics, Robotics and Automation Program or instructor permission.

ELT 932 50000 INTERNSHIP VOC/TECH
A semi-structured experience in the student’s chosen field working as an intern with a sponsoring organization. The student has the opportunity to network with professionals and employees in his/her field. The student will write a resume suitable for employment applications. Prerequisite: Earn grades of “C” or higher in courses pertaining to the student’s chosen internship area. The courses pertaining to the internship areas are as follows: ELT 474, 475 or 482; ELT 483 or 478; ELT 479 or 484, and ELT 485.

EMS 105 10200 IA LAW ENFORCEMENT EMERGENCY CARE VOC/TECH
Designed to help Iowa Law Enforcement personnel gain the knowledge, skills and attitudes necessary to be a competent, productive and valuable member of the Emergency Medical Services team.

EMS 112 32200 FIRST RESPONDER VOC/TECH
A 60-hour emergency care course that emphasizes life threatening emergencies, wounds, fractures, medical and environmental emergencies and other emergency situations as outlined by the U.S. Department of Transportation.

EMS 210 64000 EMERGENCY MEDICAL TECH BASIC VOC/TECH
Prepares rescue personnel for the role and responsibilities of an EMT-B. Includes specific patient assessment and emergency treatment procedures. Students should be 18 years of age prior to course completion. State Health Department Certification Exam after successful course completion.

EMS 311 42400 EMT INTERMEDIATE 05 VOC/TECH
An advanced EMT training program developed by the Iowa Department of Public Health, Bureau of EMS, which covers techniques of emergency medical care within the scope of responsibilities of the Iowa EMT Intermediate. Prerequisite: Current certification by State of Iowa as EMT Basic, high school diploma or GED, and evidence of successful completion of recognized healthcare provider CPR.

EMS 429 64400 EMT IOWA PARAMEDIC I VOC/TECH
An advanced care EMT training program developed by US Department of Transportation and approved by the Iowa Department of Public Health. Course covers techniques and emergency medical care within the scope of responsibilities of the Iowa EMT Paramedic. Prerequisite: Current certification by State of Iowa as EMT Basic or EMT Intermediate. High school diploma or GED. Evidence of successful completion of BCLS Healthcare Provider CPR

EMS 433 75400 EMT IOWA PARAMEDIC II VOC/TECH
Continuation of EMT Iowa Paramedic I with emphasis on respiratory emergencies, diabetic and allergic reactions, poisonings, environmental, OB/GYN, neonatal and pediatric emergencies. Prerequisite: Successful completion of EMS 429 and current certification by State of Iowa as EMT Basic or EMT Intermediate. Current CPR Healthcare Provider course completion

EMS 438 600018 EMT IOWA PARAMEDIC III VOC/TECH
Clinical and field experiences that emphasize skills, knowledge and theory acquired in EMS 429 and EMS 433. Prerequisite: Successful completion of EMS 435 and current certification by State of Iowa as EMT Basic or EMT Intermediate. Current CPR Healthcare Provider course completion

ENG 060 33000 COLLEGE PREPARATORY WRITING I VOC/TECH
Introduces students to writing at the basic sentence and paragraph levels including grammar, punctuation, spelling and editing techniques. Students then compose 3–4 essays. Preparation for ENG 061 and 105.

ENG 061 33000 COLLEGE PREPARATORY WRITING II VOC/TECH
Prepares students for college-level writing while reviewing sentence and paragraph patterns, mechanics and essay development. Explores writing purposes, audience and editing based on assignment criteria. Students write 4–6 essays. For students who have taken ENG 060 or met course’s objectives. Preparation for ENG 105.

ENG 104 33000 RESOURCES FOR COMPOSITION VOC/TECH
This course provides a college-credit composition environment that stresses the resources and reinforces the skills necessary for negotiating college writing.
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**Course Descriptions**

**ENG 105 COMPOSITION I CORE**

Designed to help students read and write effectively. Exploration of the relationship of audience to writer and material. Emphasis on developing concrete detail to support main ideas. Prerequisite: Satisfactory writing skills.

**ENG 106 COMPOSITION II CORE**

Expository and persuasive writing developed through critical reading. The course explores structure, style, research and documentation. Prerequisite: ENG 105.

**ENG 108 COMP II: TECHNICAL WRITING CORE**

A study of technical/business communication with emphasis on writing in the workplace. Course material includes written and oral communication to a variety of audiences in different situations. There will be special focus on individual career goals. Prerequisite: ENG 105.

**ENG 221 WRITING CORE**

An introduction to the techniques of writing poetry and fiction. Students will read the works of professional writers and apply the principles of imaginative writing to their own work.

**ENG 225 WRITING: POETRY GENERAL**

A course devoted to the advanced study and writing of poetry, emphasizing the development of poetic techniques and an expanded understanding of contemporary poets and their work.

**ENG 230 WRITING: FICTION GENERAL**

A course devoted to the advanced study and writing of fiction, emphasizing the development of narrative techniques and an expanded understanding of contemporary fiction writers and their work.

**ENG 235 PLAYWRITING AND SCREENWRITING GENERAL**

A course devoted to the advanced study and writing of stage-worthy plays and/or marketable screen plays emphasizing appropriate techniques to each dramatic form and expanded understanding of contemporary practitioners.

**ENV 115 ENVIRONMENTAL SCIENCE CORE**

This course combines the basic principles of ecology with current environmental issues. Includes energy, land use, pesticides and pollution. Wildlife, fisheries, forestry, soil and water conservation practices are emphasized. Designed for the non-science major.

**ENV 116 ENVIRONMENTAL SCIENCE LAB CORE**

This lab supplements discussion in ENV 115. Lab includes measurement of soil nutrients and water pollutants. Selected field trips deal with soil conservation, wildlife management, wastewater treatment and other aspects of environmental conservation. Prerequisite: Enrollment in or prior completion of ENV 115 or equivalent.

**ENV 145 CONSERVATION BIOLOGY CORE**

This course presents a broad overview of the patterns and processes influencing biodiversity on multiple scales, as well as practical approaches to resource management. We will examine issues causing loss of biodiversity, reserve design and management, ecological and population monitoring techniques and conservation approaches on varying levels. Prerequisite: ENV 115, ENV 116.

**ENG 160 RESTORING PLANT COMMUNITIES GENERAL**

Introduction to restoration of native plant communities in Iowa. Identification of common native prairie, savanna, forest and wetland communities, common plants and animals. Identification of invasive plants. Field techniques for reestablishment and maintenance of native plant communities. Supervised field work at actual restoration sites. Prerequisite: ENV 115, 116, 138 or instructor permission.

**ESL 093 HIGH INTER ESL CONVERSATION/DYAD COLLEGE PREPARATORY**

For intermediate-level students to improve the accuracy of their pronunciation and to develop the listening and speaking skills needed to communicate in diverse settings. Classroom activities are supplemented by individualized listening and pronunciation exercises. College preparatory courses cannot be used to fulfill degree requirements.

**ESL 094 ADVANCED COLLEGE PREPARATORY**

For advanced students to develop fluency in English and to improve the listening and conversation skills needed for careers and academic study. Classroom activities are supplemented by individualized listening and pronunciation exercises.

**ESL 095 COMMUNICATIVE GRAMMAR FOR ESL COLLEGE PREPARATORY**

This course provides non-native speakers of English with intensive practice in advanced English grammar while promoting the development of communicative skills. Areas of instruction include tenses, passive voice, reported speech, conditions, etc. This course cannot be used to fulfill degree requirements. Prerequisite: Minimum scores on the TOEFL or Michigan Test.

**ESL 096 READ ENGLISH AS A 2ND LANGUAGE COLLEGE PREPARATORY**

This course is designed for non-active speakers of English. Reading comprehension skills are developed through vocabulary work, guided reading activities and discussion. Reading material is intellectually stimulating but not beyond the student’s level of comprehension. Cannot be used to fulfill degree requirements. Prerequisite: Minimum scores on the TOEFL or Michigan Test.

**ESL 097 INTRO TO WRITING SKILLS-ESL COLLEGE PREPARATORY**

An introduction to the mechanics of word order and sentence patterns of English. Writing skills are designed to meet the needs of ESL students preparing to take Basic Writing.

**ESL 098 ADVANCED ACADEMIC ESL GRAMMAR GENERAL**

This is an advanced-level academic English grammar course for students whose first language is not English. This course emphasizes the usage of systematic functional grammar through the practice of studying complex grammatical structures as used in authentic academic settings integrated with writing skills. This course addresses the linguistic and instructional needs of non-native English speaking students. It may be taken concurrently with carefully selected college courses. Prerequisite: ESL 094 or above on ESL Test in COMPASS–Grammar Usage.

**ESL 099 ADVANCED ACADEMIC ESL WRITING GENERAL**

This course develops academic writing skills for students whose first language is not English. The course emphasizes familiarizing students with writing academic essays in the traditional modes: observing, describing, informing, explaining process and/or classifying, and explaining cause(s) and/or effect(s). This course addresses the linguistic and instructional needs of non-native English-speaking students. It focuses on sentence expansion and modification, the writing process and developing research skills. It may be taken concurrently with carefully selected college courses. Prerequisite: ESL 094 or above on ESL Test in COMPASS–Grammar Usage.

**FIN 101 PRINCIPLES OF BANKING OPEN**

This course surveys the banking functions. It provides a comprehensive introduction to the diversified services offered by the banking industry today.

**FIN 121 PERSONAL FINANCE OPEN**

This course emphasizes family financial planning including financial statements, budgeting, taxes, risk management and retirement.

**FIN 180 INTRODUCTION TO INVESTMENTS OPEN**

Provides basic information to familiarize students with various investments including securities, options, commodities, tax shelters and other investment alternatives. Topics include analyzing investment opportunities, review of risks and returns, averages and indexes and analyzing securities.

**FIN 214 STOCKS, BONDS AND INVESTMENTS OPEN**

This course explores personal investment in financial assets. Investing in stocks, bonds and mutual funds is the focus of investigation. Concepts, techniques and strategies related to realizing financial goals with these types of assets are considered.
COURSE DESCRIPTIONS

FIR 124 3 3 0 0 0
BUILDING CONSTRUCTION
Study of building materials, components and design features with regard to their reactions under fire conditions. Course also includes interpretation of Life Safety Code and its application to proposed and existing structures. Prerequisite: FIR 230

FIR 152 3 3 0 0 0
BUILDING CONSTRUCTION
Study of building materials, components and design features with regard to their reactions under fire conditions. Course also includes interpretation of Life Safety Code and its application to proposed and existing structures. Prerequisite: FIR 230

FIR 200 3 3 0 0 0
OCCU S/H IN EMERGENCY SERVICES
The fire fighting profession is one of the most dangerous endeavors undertaken in the name of public service. The goal of this course is to enable firefighters to perform assigned tasks in a safe and effective manner through an understanding of key Occupational Safety and Health Administration (OSHA) regulations and National Fire Protection Association (NFPA) standards.

FIR 212 3 3 0 0 0
EMERGENCY SCENE MANAGEMENT
Covers emergencies and incident command systems to maintain control in emergencies of fire suppression, mass casualty, and hazardous materials. Information, logistics, press, finance and other areas are addressed in incident command system.

FIR 220 3 3 0 0 0
PLANNING FOR FIRE PROTECTION
This course is designed to help develop strategic plans for fire protection of an area, community, multiple building complex and single building. Through the use of data collection systems and other management tools, the student will be able to identify and analyze fire problems and develop alternative solutions.

FIR 230 3 3 0 0 0
FIRE BEHAVIOR & INVESTIGATION
Course covers the behavior of fire in confined structures and the methods used to determine point of origin, cause and travel of fire within a structure.

FIR 232 3 3 0 0 0
PROPERTY INSURANCE-FRAUD INVESTIGATION
Covers properties of principle and investigation of incendiary fires with an emphasis on the investigation of insurance fraud fires.

FIR 290 4 0 0 1 6
FIRE FIGHTER I CERTIFICATION
This course is a survey of the basic principles of fire fighting as they relate to fire fighter professional qualifications. Especially emphasized are the basic skills needed to become accredited as a Fire Fighter I based on the National Fire Protection Association Standard NFPA 1001. Certification requires successful completion of approximately 120 contact hours of Fire Fighter I training, a written exam, a practical (skills performance) exam and local documentation, all certified by a nationally recognized fire service accreditation agency.

FIR 291 3 0 0 1 2
FIRE FIGHTER II CERTIFICATION
This course is a survey of the basic principles of fire fighting as they relate to fire fighter professional qualifications. Especially emphasized are the basic skills needed to become accredited as a Fire Fighter II based on the National Fire Protection Association Standard NFPA 1001. Certification requires successful completion of approximately 86 contact hours of Fire Fighter II training, a written exam, a practical (skills performance) exam and local documentation, all certified by a nationally recognized fire service accreditation agency. Prerequisite: FIR 290

FLA 141 4 4 0 0 0
ELEMENTARY ARABIC I
This course is an introduction to learning the Arabic language, with emphasis on acquiring basic skills in reading, writing, and conversational communications. Thus, recognizing the Arabic alphabet will be strongly dealt with during the class as a basis for future Arabic classes.

FLA 142 4 4 0 0 0
ELEMENTARY ARABIC II
Continue to acquire an elementary level of Arabic language skills of reading, writing, grammar and conversational communications. Reading and conversation will be emphasized. Prerequisite: FLA 141 or permission of instructor

FLA 241 4 4 0 0 0
INTERMEDIATE ARABIC I
Continue to acquire a higher level of Arabic language skills of reading, writing, grammar and conversational communications. Writing, grammar and conversation will be emphasized within cultural context. Prerequisite: FLA 240 or permission of instructor

FLA 242 4 4 0 0 0
INTERMEDIATE ARABIC II
Continue to acquire a higher level of Arabic language skills of reading, writing, grammar and conversational communications. Writing, grammar and conversation will be emphasized within cultural context. Prerequisite: FLA 242 or permission of instructor

FLA 141 4 4 0 0 0
ELEMENTARY GERMAN I
Development of the basic skills in understanding, speaking, and conversational German. Prerequisite: FLA 142 or permission of instructor

FLA 142 4 4 0 0 0
ELEMENTARY ARABIC I
Continued study of the four basic skills and grammar analysis. Introduction of short prose selections with conversational emphasis. Prerequisite: FLA 141 or permission of instructor

FLA 141 4 4 0 0 0
ELEMENTARY GERMAN II
Continued practice of the four basic skills and grammar analysis. Introduction of short prose selections with conversational emphasis. Prerequisite: FLA 142 or permission of instructor

FLA 241 4 4 0 0 0
INTERMEDIATE GERMAN I
Review of essential grammatical constructions emphasizing major areas of difficulty for English speakers. Use of German cultural and literary materials to develop conversational skills. Prerequisite: FLA 142 or permission of instructor

FLA 242 4 4 0 0 0
INTERMEDIATE GERMAN II
Continued review of grammatical constructions using German cultural materials. Reading, writing and conversation will be emphasized in the context of cultural issues and current events. Prerequisite: FLA 241 or permission of instructor
COURSE DESCRIPTIONS

FLI 141  4 4 0 0 0  
ELEMENTARY ITALIAN I  
CORE 
Development of the basic skills of understanding, speaking, reading and writing Italian. Grammar analysis, classroom conversational practice and some exploration of the Italian culture.

FLI 142  4 4 0 0 0  
ELEMENTARY ITALIAN II  
CORE 
Continued practice of the four basic skills and grammar analysis. Introduction of short prose selections with conversational emphasis. Prerequisite: FLI 141 or instructor permission

FLI 241  4 4 0 0 0  
INTERMEDIATE ITALIAN I  
CORE 
Review of essential grammatical constructions emphasizing major areas of difficulty for English speakers. Use of Italian cultural and literary materials to develop conversational skills. Prerequisite: FLI 142 or instructor permission

FLI 242  4 4 0 0 0  
INTERMEDIATE ITALIAN II  
CORE 
Continued review of grammatical constructions using Italian cultural materials. Reading, writing and conversation will be emphasized in the context of cultural issues and current events. Prerequisite: FLI 241 or instructor permission

FLI 141  4 4 0 0 0  
ELEMENTARY JAPANESE I  
CORE 
Development of the basic skills of understanding, speaking, reading and writing Japanese. Grammar analysis, classroom conversational practice and some exploration of the Japanese culture.

FLI 142  4 4 0 0 0  
ELEMENTARY JAPANESE II  
CORE 
Continued practice of the four basic skills and grammar analysis. Introduction of short prose selections with conversational emphasis. Prerequisite: FLI 141 or instructor permission

FLI 241  4 4 0 0 0  
INTERMEDIATE JAPANESE I  
CORE 
Review of essential grammatical constructions emphasizing major areas of difficulty for English speakers. Use of Japanese cultural and literary materials to develop conversational skills. Prerequisite: FLI 142 or instructor permission

FLI 242  4 4 0 0 0  
INTERMEDIATE JAPANESE II  
CORE 
Continued review of grammatical constructions using Japanese cultural materials. Reading, writing and conversation will be emphasized in the context of cultural issues and current events. Prerequisite: FLI 241 or instructor permission

FLS 151  4 5 0 0 0  
ELEMENTARY SPANISH I  
CORE 
This course addresses the skills of listening, speaking, reading and writing. The language is based on themes of everyday life. Speech will be modeled by instructors who will monitor and correct for pronunciation and accent. Students will be asked to engage in simple conversations on a controlled basis using the themes presented in the curriculum. Much class time is spent practicing speech. Students will also be expected to use software available with texts to hone listening and speaking skills. Prerequisite: FLS 181 or FLS 152 or permission of instructor

FLS 152  4 5 0 0 0  
ELEMENTARY SPANISH II  
CORE 
Emphasis is on the understanding and production of oral and written Spanish presented in culturally appropriate settings. The language learned is based on themes of everyday life. Students will be asked to engage in more complex conversations using the themes presented in the curriculum. Speech will be monitored for pronunciation and accent and much class time is devoted to practicing speech. Students will also be expected to use the software accompanying the text to hone listening and speaking skills. Prerequisite: FLS 151 or instructor permission

FLS 181  4 4 0 0 0  
SPANISH FOR HERITAGE SPKR I  
CORE 
This course is designed to address the needs of Hispanic/Latino students who can communicate in Spanish but need to develop their reading, writing and speaking skills in a more accelerated environment than a traditional Spanish course. It will provide students the grammatical tools they need to write effectively with respect to register of language. Students become more familiar with accentuation rules and develop improved spelling skills through grammar drills and directed composition. Prerequisite: Instructor permission

FLS 241  4 4 0 0 0  
INTERMEDIATE SPANISH I  
CORE 
Review of essential grammatical constructions emphasizing major areas of difficulty for English speakers. Use of Hispanic cultural and literary materials to develop conversational skills. Prerequisite: FLS 152 or instructor’s permission

FLS 242  4 4 0 0 0  
INTERMEDIATE SPANISH II  
CORE 
Continued review of grammatical constructions using Hispanic cultural materials. Reading, writing and conversation will be emphasized in the context of cultural issues and current events. Prerequisite: FLS 241 or instructor’s permission

FLS 281  4 4 0 0 0  
SPANISH FOR HERITAGE SPKR II  
CORE 
This course is the continuation of FLS 181 and is intended for students who can communicate in Spanish, but need to further develop reading, writing and speaking skills in a more accelerated environment than a traditional Spanish course. It provides further practice of writing and speaking with respect to language register. This course further develops the Spanish speaker’s skills in intermediate reading and writing through a series of more extensive readings, grammar drills, and directed compositions and continues study of more formal Spanish. Prerequisite: FLS 181 or FLS 152 or permission of instructor

GEO 111  3 3 0 0 0  
INTRO TO GEOGRAPHY  
CORE 
This course utilizes the basic concepts of cultural geography (area, landscape, ecology, diffusion and integration) in a systematic examination of the contemporary world. The course is intended to provide an elementary acquaintance with the field of geography.

GEO 124  3 3 0 0 0  
REG GEOG OF THE NONWEST WORLD  
CORE 
This course systematically surveys the peoples, cultures, resources and problems of the cultural realms commonly designated as the Third World (Latin America, Black Africa, the Islamic World, India and China).

GEO 125  3 3 0 0 0  
REG GEOG OF THE DEV WORLD  
CORE 
This course systematically surveys the peoples, cultures, resources and problems of the cultural realms commonly designated as the Developed World (Anglo-America, Europe, Russia, Japan and Australia).

GLS 199  2 2 0 0 0  
JAPAN: THE CHANGING TRADITION  
GENERAL 
Focuses on history and changing cultural traditions of Japan’s modern era and the brief period during which Japan has developed its own distinctive urbanized, industrialized and democratic society.

GDS 200  3 3 0 0 0  
COUNTRY STUDY  
GENERAL 
Course is a single and specific study of a selected country, its culture and people in respect to historical, geographic economic, political and societal development. The country study course offering is dependent upon instructor selection and student interest. This course may be repeated for a maximum of 6 credits provided that each study is of a different country.

The MIDDLE EAST AND ISLAM  3 3 0 0 0  
GENERAL 
This course surveys the civilization of the Middle East from Muhammad and Islam to the Islamic caliphate and civilization, Ottomans, modernism, Western empires, Arab-Israeli conflict, contemporary Islamic revival, instability and terrorism, Muslim diaspora and the strategic importance of the Middle East to the United States and world economy.

LATIN AMERICA  3 3 0 0 0  
GENERAL 
This course examines the varied history, diverse peoples and cultures of Latin America and the Caribbean beginning with the geography, pre-Columbian peoples, the European intrusion, colonial societies, independence, modernization, American influence, economic, political, cultural and social developments in the recent past and the present.

INTRO TO INTERNATIONAL STUDIES  3 3 0 0 0  
GENERAL 
This course provides an introduction to international issues and globalization from the perspective of different continents and countries. The course will cover basic historical, geographical, political, cultural, economic, health, human rights, gender and ethnic communities around the world.

INTRO TO DESKTOP PUBLISHING  3 1 4 0 0  
VOC/TECH 
Find out for yourself if the Mac does what a PC does, only better! This course uses the world’s most advanced operating system to introduce you to a suite of graphic design industry-standard software. Learn basic digital illustration, imaging and page layout techniques in a state-of-the-art Macintosh computer lab. Prerequisite: ADM 105 or equivalent

GRAPHIC DESIGN ORIENTATION  3 2 2 0 0  
VOC/TECH 
Immerse yourself in the dynamic digital design environment. Discover employment options and trends. Examine the work ethic and foundation skills of today’s Graphic Design professionals including print, web and color management. File formats, Mac OS X, Windows OS, file servers, networking, cross-platform issues, font management and presentation skills are some of the hot topics covered. Prerequisite: Acceptance into the Graphic Design program

COMMUNICATION DESIGN I  3 2 2 0 0  
VOC/TECH 
Examine the history of graphic design and learn fundamental design principles. Study color theory and learn to follow the design process to create a variety of communication design pieces. Prerequisite: GRD 401, GRD 415, GRD 459
COURSE DESCRIPTIONS

GRD 404 3 2 2 0 0  
TYPOGRAPHY II  VOC/TECH
Advanced exploration in the application and theory of typographic principles. Students strengthen skills in typographic relationships by creating dynamic grid systems, typographically expressive layouts and using hierarchy to organize information. Students will be expected to conceptualize and execute a variety of typographic solutions across media platforms. Prerequisite: GRD 405

GRD 405 3 2 2 0 0  
TYPOGRAPHY I  VOC/TECH
This course explores the history, structure and fundamental principles of typography as it relates to graphic design. Topics include typeface identification, study of typeface design, designing with type and typographic grid systems. Students build skills with the basic elements of typography. Prerequisite: GRD 401, GRD 405, GRD 459

GRD 410 3 2 2 0 0  
ILLUSTRATION I  VOC/TECH
Expand and refine your creative drawing skills using traditional materials and the leading digital painting software, Corel Painter. Digital painting allows you to experiment with the creative possibilities of a wide range of art tools—felt pens, ink, charcoal, chalk, airbrush, watercolors, acrylics and oils—quickly and affordably. The skills learned will apply to a wide range of Graphic Design applications as you use industry-relevant media, techniques and software. Prerequisite: Acceptance into the Graphic Design program

GRD 411 3 2 2 0 0  
COMMUNICATION DESIGN II  VOC/TECH
Use fundamental principles and elements learned in Communication Design I as a guide to make effective design decisions. Learn how to combine images, color and type to create high-impact layouts. This course encourages creative thinking and problem-solving. Prerequisite: GRD 400, GRD 403, GRD 405, GRD 463

GRD 414 3 2 2 0 0  
ILLUSTRATION II  VOC/TECH
Unleash your creativity with a complete digital art studio—Corel Painter software and a pressure-sensitive graphics tablet. Unlimited undo’s allow you to experiment quickly and affordably with the creative possibilities made possible by a wide range of art tools—felt pens, ink, charcoal, chalk, airbrush, watercolors, acrylics and oils. The skills learned will apply to a wide range of Graphic Design and fine art applications as you use industry-relevant media, techniques and software. Prerequisite: GRD 410 or permission of instructor

GRD 415 3 2 2 0 0  
INDESIGN I  VOC/TECH
This course combines basic desktop publishing skills with the specifics of how to use Adobe InDesign to create visual communications. You will learn page layout tools as you are introduced to the software interface. This course teaches fundamental skills, basic commands and procedures used to create professional documents. Prerequisite: Acceptance into the Graphic Design program

GRD 419 2 0 4 0 0  
LETTERING AND SIGN ART  VOC/TECH
The study of traditional letter forms, typography, hand-lettering skills and design principles for the production of posters, signs, logos and other graphic images.

GRD 421 3 3 0 0 0  
INTERSHIP PREPARATION  VOC/TECH
Are you the best candidate for the job? Learn how to prepare for a successful interview that will land you the graphic design internship job you want. Plan an effective job search strategy by developing the materials needed such as a resume, cover letter and portfolio. This course will identify real-world workplace behavior and expectations. Prerequisite: GRD 407

GRD 424 3 1 0 0 8  
GRAPHIC DESIGN INTERNSHIP  VOC/TECH
Internship is an opportunity to work in a Graphic Design environment under the guidance of a design professional. In this course, you'll work toward securing an internship that will provide you with the experiences you need to succeed in your career. Students must earn a “C” or better on the evaluation of their portfolio. The portfolio evaluation will be a part of the Graphic Design Internship course grade. Prerequisite: GRD 421

GRD 426 3 2 2 0 0  
COMMUNICATION DESIGN II  VOC/TECH
Combine creativity with critical thinking skills to design expressive, compelling and thought-provoking graphic design solutions. Analyze creative briefs and learn to collaborate with others to solve visual communication design challenges. Prerequisite: GRD 411

GRD 430 3 2 2 0 0  
INDESIGN II  VOC/TECH
Adobe InDesign is the page layout application of choice for many designers. It contains a host of advanced layout features not found in any other application. Now you can centralize your workflow by integrating seamlessly with the other Adobe applications. In this course you will learn about advanced application features necessary to the design professional. Prerequisite: GRD 415

GRD 436 3 3 0 0 0  
PORTFOLIO PREPARATION  VOC/TECH
Students seeking employment must have a well-prepared portfolio. A professional portfolio will be prepared by each student and reviewed by the Graphic Design advisory committee.

GRD 437 3 2 2 0 0  
COMMUNICATION DESIGN IV  VOC/TECH
Blend creativity and technology with advanced level problem-solving and research strategies to create effective multichannel design solutions. Prerequisite: GRD 404, GRD 426, GRD 471

GRD 444 3 3 0 0 0  
PORTFOLIO PREPARATION II  VOC/TECH
Students will be required to conceptualize and produce portfolio quality projects. “Portfolio Day” is the highlight of completing this course. Students will be required to present a completed portfolio to graphic design professionals and prospective employers at the annual event. Prerequisite: GRD 436

GRD 449 4 2 4 0 0  
AIRBRUSH I  VOC/TECH
The fundamental principles of airbrush techniques and application to advertising design and use of airbrush as an illustrative tool.

GRD 451 4 2 4 0 0  
AIRBRUSH II  VOC/TECH
Advanced course in airbrush techniques as necessary for portfolio samples. Emphasis in utilization of advanced skills learned in Airbrush I. Prerequisite: GRD 449

GRD 459 3 2 2 0 0  
ILLUSTRATOR  VOC/TECH
Explore Adobe Illustrator’s extensive toolbox and menu commands in a state-of-the-art Macintosh computer lab. Experiment with explosive color while discovering a variety of techniques using Illustrator's powerful drawing tools. Prerequisite: Acceptance into the Graphic Design program

GRD 462 3 1 4 0 0  
COMPUTER GRAPHICS II  VOC/TECH
Students will learn the tools and workflow necessary to create a website from the initial visual design and user interface to going “live” on the web. Students will use industry-standard software to create web pages, optimize images and generate HTML and JavaScript. This course includes instruction and practice creating media-rich animation and web pages with Macromedia Flash. Prerequisite: Permission of instructor

GRD 463 3 2 2 0 0  
PHOTOSHOP  VOC/TECH
Adobe Photoshop is the ultimate playground for bringing out the best in your digital images and transforming them into anything you can imagine. Gain a solid foundation of basic functions to create and enhance visually dynamic images in a state-of-the-art Macintosh computer lab. Prerequisite: GRD 459

GRD 464 3 2 2 0 0  
DIGITAL ARTISTRY  VOC/TECH
Learn the hottest tips, tricks and techniques to create eye-catching digital illustrations by combining the best of Adobe Photoshop and Adobe Illustrator. Use advanced methods to create stellar artwork that will leave others saying “WOW!” Prerequisite: GRD 459, GRD 465

GRD 470 3 2 2 0 0  
INTERACTIVE MEDIA I  VOC/TECH
Learn a professional workflow using Fireworks, Flash and Dreamweaver to create a website from the initial visual design to going “live” on the web. Going beyond just teaching software, this course focuses on the workflow and the skills needed in each software package to get your site actually up and running on the web. Prerequisite: GRD 463 or GRD 415 or instructor permission

GRD 471 3 2 2 0 0  
INTERACTIVE MEDIA II  VOC/TECH
This hands-on course teaches how the pros plan, design and produce complete websites using professional web authoring and site management software. Learn to use database-driven Open Source Content Management Systems such as WordPress and Joomla as well as Dreamweaver, Fireworks and Flash. Prerequisite: GRD 470

GRT 400 4 2 4 0 0  
INTRO TO PRINTING METHODS  VOC/TECH
A prerequisite for all graphic technology courses as an introduction to printing technology. Course will involve lecture and hands-on lab work in areas of lithography, screen printing and flexography. Bindery and finishing methods will also be covered.

GRT 401 3 3 0 0 0  
INTRO TO GRAPHIC COMMUNICATION  VOC/TECH
A prerequisite for all graphic technology courses. Students will explore the graphic communications industry, technology, terminology and related areas through instructor lecture and student activities.
COURSE DESCRIPTIONS

GRT 406 3 2 2 0 0  
**DIGITAL PUBLISHING I**  **VOC/TECH**
An introduction to graphic design principles and terminology. Through a combination of lecture and hands-on projects, students will focus on the creative process, principles of design and production techniques. Students will apply these principles and techniques through a series of design projects. Prerequisite: GRT 400, 401

GRT 409 3 3 0 0 0  
**PROJECT PLANNING & MANAGEMENT**  **VOC/TECH**
A planning and management course specifically for print communications. Cost estimating, ordering, inventory, quality control, job scheduling and management will be covered. Prerequisite: GRT 400, 401

GRT 410 4 2 4 0 0  
**PRINTING METHODS I**  **VOC/TECH**
A continuation of Introduction to Printing Methods, students will produce various products using screen, flexography and offset printing. This course will focus on production techniques of multicolor, multipanel products. Prerequisite: GRT 400, 401

GRT 415 4 2 4 0 0  
**DIGITAL IMAGING I**  **VOC/TECH**
Students will learn digital image capture including use of a professional-grade digital camera. Students will then use Adobe Photoshop to design and prepare images for professional print production and other media. Throughout this course, students will learn the principles of digital imaging, including image adjustment tools, color science and color management. Prerequisite: GRT 406

GRT 416 3 2 2 0 0  
**DIGITAL PUBLISHING II**  **VOC/TECH**
This intermediate-level desktop publishing course will stress creation of complex multiple page documents using Adobe InDesign. Students will learn to build and control documents, format text and use text utilities, work with images and graphic tools and prepare documents for professional print production. Prerequisite: GRT 406 or instructor approval

GRT 420 4 2 4 0 0  
**ADVANCED PRINTING METHODS**  **VOC/TECH**
A specialization course in offset lithography. The student will do advanced work in multicolor printing. This class will also cover all bindery operations including folding, cutting and stitching. Prerequisites: GRT 400, 401, 409, 410

GRT 424 4 2 4 0 0  
**DIGITAL IMAGING II**  **VOC/TECH**
An advanced-level course in digital image enhancement and color control. Students will learn advanced digital image manipulation and colorization skills utilizing Adobe Photoshop. Instruction will focus on image enhancement, restoration and color correction for both print and internet publication. Prerequisite: GRT 415

GRT 426 4 2 4 0 0  
**DIGITAL PUBLISHING III**  **VOC/TECH**
An advanced digital publishing course for students pursuing a digital publishing emphasis for either the AAS degree or diploma. This course is designed to expand and develop graphic design skills. Students will explore trademark, corporate identity, brochure design, book design and advertising design. Students will utilize computers and desktop publishing software to develop and produce various projects. Prerequisite: GRT 406, 416, 421

GRT 427 4 2 4 0 0  
**SPECIALTY PRINTING METHODS**  **VOC/TECH**
A course in specialty printing focusing on flexography and screen printing. The student will work in a lab environment to complete multiple color printed projects advancing their skills in both printing technologies. Prerequisite: GRT 400, 401, 409, 410

GRT 450 3 2 2 0 0  
**EMERGING TECHNOLOGIES**  **VOC/TECH**
This course explores advanced and emerging technologies in the graphic communications industry. Students will be exposed to equipment and software applications that are new to the industry and learn new publishing techniques from hands-on projects. Topics include interactive projects, color management, PDF workflow, variable data publishing and multi-channel marketing. Prerequisite: Completion of terms 1, 2 and 3 of the Graphic Technologies program or instructor approval

GRT 453 4 2 4 0 0  
**PRINTING METHODS CAPSTONE**  **VOC/TECH**
This course is for students pursuing a Graphic Technology emphasis in printing technologies. Students will collaboratively produce a capstone project utilizing their skills in print production. Resumes and portfolio preparation are also covered. Prerequisite: Completion of terms 1 and 2 of the Graphic Technologies program and GRT 420, 427

GRT 455 4 2 4 0 0  
**DIGITAL PUBLISHING CAPSTONE**  **VOC/TECH**
This course is for students pursuing an emphasis in digital publishing in Graphic Technologies. Students work collaboratively to produce a capstone project utilizing their skills in digital publishing and print production. Resume and portfolio preparation are also covered. Prerequisite: Completion of terms 1 and 2 of the Graphic Technologies program and GRT 425, 426

GRT 932 3 4 0 0 0 8-12  
**INTERNSHIP**  **VOC/TECH**
On-the-job training for Graphic Technologies students. Included is a weekly seminar for the exchange of information, review and evaluation. Prerequisite: Completion of terms 1, 2 and 3 of the Graphic Technologies program

HCM 100 2 2 0 0 0  
**SANITATION & SAFETY**  **VOC/TECH**
Principles and methods of sanitation safety and equipment. Equipment selection and facilities planning. Also includes preventive maintenance.

HCM 104 1 0 2 0 0  
**SANITATION & EQUIPMENT LAB**  **VOC/TECH**
The lab consists of sanitation practices. The student will carry out the practice of table service for international cuisine dinners and apply sanitation measures. (P/F)

HCM 110 2 0 4 0 0  
**BAKING (LAB)**  **VOC/TECH**
This course offers instruction in the baking fundamentals and procedures as applied to bread, rolls, cakes, pastries and cake decorating. Practical experience in sanitation, safety and the use of large equipment is also emphasized in this course. Prerequisite: HCM 143, 144 or instructor permission

HCM 124 2 0 4 0 0  
**ADV BAKING/BUFFET DECORATING**  **VOC/TECH**
Advanced principles and procedures of producing baked goods, decorative work and display pieces. Prerequisite: HCM 110, 210

HCM 143 3 3 0 0 0  
**FOOD PREPARATION I**  **VOC/TECH**
Introduces the student to the scientific principles used in food preparation. Involves preparation procedures and techniques to be used with fruits, vegetables, starch products, cheese, eggs, meat, poultry and fish. Establishes criteria needed to produce a standard product. Corequisite: HCM 144

HCM 144 3 0 6 0 0  
**FOOD PREPARATION I LAB**  **VOC/TECH**
Preparation of small servings of salads, starch, cheese, egg, meat, poultry and fish products using the techniques studied in lecture. Oral and written evaluation of each product. Corequisite: HCM 143

HCM 152 2 2 0 0 0  
**FOOD PREPARATION II**  **VOC/TECH**
The study of the principles and procedures of quantity food production as they apply to salads, soups, vegetables, entrees and desserts. Emphasis is on organization and recipe standardization. Prerequisite: HCM 143, 144

HCM 153 2 0 4 0 0  
**FOOD PREPARATION II LAB**  **VOC/TECH**
The production of quick breads, desserts, salads, vegetables, soups and main entrees to be sold to the public. Time is spent on an individual recipe production project. Prerequisite: HCM 143, 144

HCM 167 3 0 6 0 0  
**CULINARY SKILLS DEVELOPMENT**  **VOC/TECH**
Students produce and serve meals for the public in an actual restaurant experience. Emphasis is on the various management functions required to serve quality foods efficiently and intermediate culinary preparation techniques. Prerequisite: HCM 152, 153

HCM 168 2 2 0 0 0  
**ADVANCED CULINARY CUISINE**  **VOC/TECH**
Discussion of the more intricate and difficult cooking principles and techniques of classical cuisine and planning for advanced culinary cuisine. Prerequisite: HCM 167. Corequisite: HCM 169

HCM 169 4 0 8 0 0  
**CULINARY CUISINE LAB**  **VOC/TECH**
Preparation of intricate and difficult classical cuisine dishes. Students will rotate through the cooking stations of the traditional brigade kitchen and then prepare food for service to the public. A la carte preparation is emphasized. Prerequisite: HCM 167. Corequisite: HCM 168

HCM 172 3 0 6 0 0  
**INTERNATIONAL CUISINE (LAB)**  **VOC/TECH**
Application of gourmet cooking through actual quantity preparation of eight-course international dinners. Four evening gourmet dinners will be prepared and served during the semester. Prerequisite: HCM 152, 153. Corequisite: HCM 173

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**Other Course Descriptions**

- **HCm 100 2 0 4 0 0**
- **HCm 110 2 0 4 0 0**
- **HCm 124 2 0 4 0 0**
- **HCm 143 3 3 0 0 0**
- **HCm 144 3 0 6 0 0**
- **HCm 152 2 2 0 0 0**
- **HCm 153 2 0 4 0 0**
- **HCm 167 3 0 6 0 0**
- **HCm 168 2 2 0 0 0**
- **HCm 169 4 0 8 0 0**
- **HCm 172 3 0 6 0 0**

**Corequisites**

- **HCm 143**
- **HCm 144**
- **HCm 152**
- **HCm 153**
- **HCm 167**
- **HCm 168**
- **HCm 169**
- **HCm 173**

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COURSE DESCRIPTIONS

HCM 173 22000 INTERNATIONAL CUISINE VOC/TECH
Students research and plan international dinners. Emphasis is on menu and production planning for eight-course gourmet dinners. The lecture will also focus on the pronunciation and definition of French terms. Prerequisite: HCM 152, 153. Corequisite: HCM 172

HCM 175 30600 INTERNATIONAL CUISINE LAB II VOC/TECH
Application of gourmet cooking through actual quantity preparation of eight-course international dinners. Four evening gourmet dinners will be prepared and served during the semester. Prerequisite: HCM 172, 173

HCM 200 20400 DINING ROOM SERVICE VOC/TECH
A dining room service course in an actual restaurant experience with emphasis on using sound management techniques and quality customer service.

HCM 210 22000 DINING MANAGEMENT VOC/TECH
Students will plan menus and meal service in actual restaurant experience. Emphasis is on using sound management techniques for producing high-quality food and service to the public. Prerequisite: HCM 152, 153

HCM 231 22000 NUTRITION VOC/TECH
An overview of nutrition-related topics including the psychology of eating and evaluation of food intake.

HCM 240 22000 MENU PLANNING & DESIGN VOC/TECH
This course applies the principles of menu planning and layout to the development of menus for a variety of types of facilities and service.

HCM 250 22000 PURCHASING VOC/TECH
Principles and methods of food purchasing with emphasis on specifications and grading of various food products. Includes financial procedures and controls used in the food service industry.

HCM 270 20400 GARDE MANGER VOC/TECH
Application of techniques used in preparation of hot and cold hors d’oeuvres, decorative food displays and ice carvings. Emphasis is placed on aspics, galantines and buffet presentations. Prerequisite: HCM 143, 144

HCM 300 22000 BEVERAGE MANAGEMENT VOC/TECH
This course will familiarize the student with all aspects of beverage service including wine and alcohol laws. The basic mechanics of beverage preparation, sales and promotion will be covered.

HCM 320 22000 INTRO TO HOSPITALITY INDUSTRY VOC/TECH
Course introduces students to the broad world of hospitality while preparing them for careers in the field. Discussed will be three primary areas of hospitality—food and beverage, lodging and tourism, along with an introduction to business basics.

HCM 350 30000 WORK EXPERIENCE VOC/TECH
An approved program of experience in one of the many hospitality areas: restaurant, hotel, club, school food service, motel. (P/F)

HCM 500 22000 INTRO TO LODGING OPERATIONS VOC/TECH
An in-depth look at the management and operations of key services within hotel properties. Included are guest services, housekeeping, maintenance and security. Course will examine the intricacies of these services from a management perspective.

HCM 504 50000 HOTEL SERVICE INTERNSHIP VOC/TECH
An approved program of work experience in one of the many hotel/motel properties in the area. Prerequisite: HCM 520. Corequisite: HCM 600

HCM 605 22000 HOTEL ADMINISTRATION VOC/TECH
A management course that introduces the student to advanced studies of property management, catering, sales, legal aspects, security and maintenance of all departments of the hotel.

HCR 253 52600 RESIDENTIAL HEATING & AC VOC/TECH
Residential heating and cooling basics. Study of installation and service procedures through class and lab practices. Prerequisite: HCR 307

HCR 256 52600 APPLIED HEATING & AC VOC/TECH
This course covers installation and troubleshooting techniques dealing with residential heating, cooling and refrigeration systems. Prerequisite: HCR 253

HCR 260 31400 HVAC TRADE SKILLS I VOC/TECH
This course covers all types of soldering and brazing used in the heating, air conditioning and refrigeration industry.

HCR 270 52600 ADVANCED HEATING & AC VOC/TECH
This course covers installation, advanced troubleshooting, maintaining and repairing of geothermal heat pumps, gas, fuel oil and electric heating systems. Prerequisite: HCR 256

HCR 290 52600 COMMERCIAL HVAC/REFRIGERATION VOC/TECH
Course covers basic commercial refrigeration systems, components and their use, applications, methods of installation, maintenance, diagnosis and repairs. Prerequisite: HCR 270, 506

HCR 307 52600 FUNDAMENTALS OF REFRIGERATION VOC/TECH
This course consists of the principles of refrigeration, domestic systems and equipment.

HCR 404 52600 ELECTRICITY VOC/TECH
A study of basic electricity principles: Ohm’s law, series and parallel circuits as applied to HVAC & refrigeration. Course also includes hands-on practice with training boards in the lab.

HCR 440 52600 ELECTRICAL CONTROLS & CIRCUITS VOC/TECH
The application of motor control circuits used in industrial application, in particular in the HVAC/R field. These applications include contactors, starters, starting relays, interlocks, relays, thermostats, split phase, shaded pole, capacitor start motors and three-phase motors. Prerequisite: HCR 404

HCR 506 32200 AIR CONDITIONING VOC/TECH
Involves the study of fans, blowers and dampers; the design of duct systems for proper air delivery; and allows for final system balancing. Includes lab practice. Prerequisite: HCR 256

HCR 515 31400 SHEET METAL FABRICATION VOC/TECH
This course covers all types of sheet metal fabrication pertaining to the HVAC profession. Prerequisite: HCR 250

HCR 777 32200 BLUEPRINT READING VOC/TECH
A study of blueprint reading related to the HVAC/R trade. Drafting symbols and terminology will be covered, along with skills needed to make simple scaled drawings.

HIS 113 44000 WEST CIV: EARLY MOD TO PRES VOC/TECH
Survey of political, economic, social and intellectual developments from the 18th century to the present. Enlightenment, revolutions and reactions, national unifications, national rivalries, world wars and post-war developments.

HIS 153 44000 U.S. HISTORY SINCE 1877 VOC/TECH
A survey of main themes of American history from 1877 to the present with emphasis on the political, social, economic, religious and intellectual aspects of the Progressive Era, WWI, the Roaring Twenties, the Great Depression, WWII and post-WWII Era.
COURSE DESCRIPTIONS

HIS 201  IOWA HISTORY  3 3 0 0 0  GENERAL
A broad survey of Iowa history from Indian cultures and pioneer farming through modern agriculture, gradual social changes and long-term political trends.

HIS 257  AFRICAN-AMERICAN HISTORY  3 3 0 0 0  CORE
A survey of the history of the African-American community with emphasis on the role of individuals, institutions and ideas in the development of the community from its origins in West Africa to the present.

HIS 266  THE CIVIL WAR  3 3 0 0 0  GENERAL
This telecourse covers the causes, key events, major participants and the long-term impacts of the Civil War using Ken Burns' widely acclaimed TV series. This course vividly captures the entire sweep of America's most significant war.

HSC 102  EMERGENCY CARE  1 1 0 0 0  VOC/TECH
Learn to perform care for medical emergencies: fractures, burns, resuscitation, basic CPR (cardiopulmonary resuscitation, American Heart Level II Standards) Certification.

HSC 105  SURVEY OF HEALTHCAREERS  3 3 0 0 0  VOC/TECH
This course introduces both the variety and requirements for healthcare careers. Basic core knowledge and professional expectations common to all health careers are explored. Workplace safety and an overview of the health system and current trends are also covered.

HSC 109  INTRO TO HEALTHCAREERS  3 3 0 0 0  VOC/TECH
Students will discover the many options available, including roles and responsibilities in healthcare options. This course is designed to provide the student with the information necessary to make their healthcare career choice.

HSC 120  MEDICAL TERMINOLOGY I  3 3 0 0 0  VOC/TECH
Builds a medical vocabulary through an understanding of anatomic roots for words denoting body structures, prefixes, suffixes and body functions.

HSC 121  MEDICAL TERMINOLOGY II  3 3 0 0 0  VOC/TECH
Continues to build a medical language vocabulary by studying body systems such as musculoskeletal, endocrine, nervous and integumentary systems. Prerequisite: HSC 120

HSC 122  NURSE AIDE 75 HOURS  3 2 0 3 0 0  VOC/TECH
Entry-level skills to seek employment in Iowa skilled facilities. Meets OBRA87 standards.

HSC 182  ADVANCED NURSE AIDE  3 2 0 3 0 0  VOC/TECH
A continuation of Nurse Aide to provide additional skills and clinical to work in hospital. Prerequisite: A DMACC-sponsored 75-hour Nurse Aide class or HSC 172

HSC 183  Carer-Dementia Illness Training  1 1 0 0 0  VOC/TECH
This 15-hour course has been developed to meet the training requirements for Intermediate Care Facilities by providing basic knowledge about Alzheimer's disease and other chronic dementia illnesses. Emphasis is on the physical and psychological changes that take place in the Alzheimer patient and the importance of appropriate communication. Explanation of the stages of Alzheimer's disease and appropriate interventions will be introduced.

HSC 231  MEDICAL SCIENCE OBSERVATION I  2 1 0 0 4  VOC/TECH
Supervised experience in a medical healthcare agency. Enable students to learn about the field of the student’s interest area of medical health, accumulate site hours for admission into graduate programs, and apply their skills and knowledge by working directly in the professional field.

HSC 232  MEDICAL SCIENCE OBSERVATION II  2 1 0 0 4  VOC/TECH
Extended supervised experience in a medical science area. Enables students to learn about the field of their interest in medical science. Accumulate site hours for admission into graduate programs and apply their skills and knowledge by working directly in the professional field. Prerequisite: HSC 231

HSC 240  HUMAN NUTRITION  3 3 0 0 0  VOC/TECH
Understanding and implementing present-day knowledge of nutrition; the use of food for health and satisfaction of the individual and family.

HSC 281  LIMITED RADIOLOGY  5 4 0 3 0 0  VOC/TECH
IBN#22 State-required course for people employed in a clinic to take chest and extremities, sinuses or spinal x-rays.

HSC 286  INTRO TO HUMAN SERVICES  3 3 0 0 0  VOC/TECH
History and introduction to the social welfare institution. Theoretical perspectives, concepts, values and intervention strategies are examined. Systems theory is used to explore legislation and services designed to meet client needs.

HSC 286  INTERVIEWING/INTERP RELATION  3 3 0 0 0  OPEN
Study of interviewing theories including roles and relationships between the interviewer and the interviewee. Methodology of developing questions, conducting interviews, recording data and analyzing it, and writing assessments and histories are emphasized.

HSC 230  COMMUNITY ORGANIZATION  3 3 0 0 0  OPEN
A study of various theories, methods and techniques to bring about needed and desirable changes in political, economic, social and bureaucratic structures and processes. Emphasis is placed upon application of learned skills. Prerequisite: 6 hours of Social Sciences

HSC 255  ADDICTIVE DISEASE CONCEPTS  3 3 0 0 0  OPEN
A historical and theoretical background to current concepts of addiction. A variety of addictive behaviors are examined with special focus on psychoactive drug dependency.

HSC 286  INTERVENTION THEORIES/PRAC I  3 3 0 0 0  OPEN
Study of several management and planning theories and practices that are used to assess client needs, establish goals, identify resources and make appropriate referrals. Community resources are explored. Only offered Fall and Spring semesters. Prerequisite: HSC 109, 190

HSC 288  INTERVENTION THEORIES/PRAC II  3 3 0 0 0  OPEN
Theories and values of the social sciences, including human services, are used to interpret and respond to client behaviors. Written analysis is emphasized. Evaluation theory and its applications are also stressed. Only offered spring and summer semesters. Prerequisite: HSC 130, HSC 286 (with minimum grade of C). Corequisite: HSC 802

HSC 802  INTERNSHIP  3 0 0 0 1 3 0 0 0  OPEN
Supervised experience in a human services agency enables students to apply their skills and knowledge by working directly with clients. Only offered Spring and Summer Semesters. Prerequisite: HSC 130, HSC 286. Corequisite: HSC 808

HSC 811  PRACT: CHEM DEPEND COUNSEL I  3 0 0 0 1 2 0 0 0  OPEN
Supervised experience in three of these treatment programs for chemically dependent people: inpatient, outpatient, follow-up care, halfway house and family therapy. Prerequisite: Acceptance at an approved practicum site

HSC 812  PRACT: CHEM DEPEND COUNSEL II  3 0 0 0 1 2 0 0 0  OPEN
Supervised experience in one of these treatment programs for chemically dependent people: inpatient, outpatient, residential, adolescent dual diagnosis or family services. Prerequisite: Acceptance at an approved practicum site

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COURSE DESCRIPTIONS

HUM 116  33000  ENCOUNTERS IN HUMANITIES  3 CRED
An interdisciplinary course exploring the human condition through literature, painting, sculpture, architecture, music and dance. The course examines the cultural context of individual works and movements, the thematic relationships between the arts and the relevance of the arts in our lives today.

HUM 120  32200  INTRODUCTION TO FILM  3 CRED
An introduction to the conventions, scope, purposes and techniques of films. Includes viewing and writing about a variety of films.

HUM 121  32200  AMERICA IN THE MOVIES  3 CRED
An interdisciplinary course that combines the insights of history and literature by examining popular American movies. The course explores the social, cultural and ethical questions raised in such films.

IND 124  22000  CONTROL SYSTEMS OVERVIEW  VO/TECH
An overview of control systems in an industrial environment including hydraulic, pneumatic and electrical/electronic systems. Topics include valves, actuators, motor starters, relays, timers and programmable controllers.

IND 144  43200  PUMP OVERHAUL AND REPAIR  VO/TECH
Overview of internal parts, principles of operation and maintenance of positive displacement and centrifugal pumps.

IND 146  32200  MECH POWER TRANSMISSION I  VO/TECH
A course in fundamental mechanical power transmission used in manufacturing. Topics covered include the inspection, maintenance and repair of chain- and belt-driven equipment. This will include the sizing of belts and pulleys, determining speed ratios and the importance of proper sizing for process control.

IND 147  43200  MECHANICAL POWER TRANS II  VO/TECH
A fundamental course in the principles of mechanical power transmission. Topics include the use of gears to effect speed changes, the identification and use of bearings, clutches, couplings and brakes. Prerequisite: IND 146

INT 124  33000  INTERIOR DESIGN ANALYSIS  VO/TECH
Acquiring knowledge and expertise to create pleasing and effective interior design will be emphasized. Focus will be on space planning, furniture styles, color schemes, wall coverings and floor and window treatments. Also includes exploration of the interior design profession and related career areas.

INT 125  33000  INTERIOR DESIGN PLANNING  VO/TECH
Focuses on the development of interior design plans and the execution of these plans. Builds upon knowledge acquired in Interior Design Analysis through analyzing client needs and creating design boards and presentations to meet those needs. Prerequisite: INT 124

ITP 123  33000  INTRO TO ASL INTERPRETING  VO/TECH
This course is an overview regarding the field in sign language interpretation for the Deaf Community. The course provides a basic historical framework related to the principles, ethics, roles, responsibilities and standard practices of the sign language profession. Prerequisite: Admission to the American Sign Language Interpreter program or permission from the department chair.

ITP 133  33000  DEAF CULTURE AND COMMUNITY  VO/TECH
This course provides students with the opportunity to explore American Deaf Culture and community: its existence, characteristics, institutions, organizations, key historical figures and events, contemporary leaders and contributions to the larger society. Diversity within the community and realities of life as a cultural minority will also be discussed. The course takes a comparative approach by integrating concepts of American Deaf Culture to the students’ own experiences with culture and community plus a comparison and contrast between American Mainstream Culture and American Deaf Culture.

ITP 146  33000  ASL INTERPRET VOICE TO SIGN I  VO/TECH
This course is organized to provide tools to the students for effectively demonstrating an accurate interpretation of meaning from American Sign Language to spoken English. Objectives include developing signing skills with a focus on chunking, dynamic equivalence, concept selection, register receptive skills, proper location of sign interpreters, team interpreting, the use of a Certified Deaf Interpreter (CDI) and other aspects of signing. Special requirements of sign interpreting will also be included, such as methods and techniques of signing for Deaf individuals who are members of the Deaf Community and use ASL, as well as Deaf individuals who may not use ASL and use an English Code Variation. Prerequisite: Admission to the American Sign Language Interpreter program or permission from the department chair.

ITP 148  33000  ASL INTERPRET VOICE TO SIGN II  VO/TECH
This course is organized to provide tools to the students for effectively demonstrating an accurate interpretation of meaning from American Sign Language to spoken English. Objectives include developing signing skills with a focus on chunking, dynamic equivalence, concept selection, register receptive skills, proper location of sign interpreters, team interpreting, the use of a Certified Deaf Interpreter (CDI) and other aspects of signing. Special requirements of sign interpreting will also be included, such as methods and techniques of voice-over, voicing for Deaf individuals who use ASL, as well as Deaf individuals who may not use ASL. Prerequisite: Admission to the American Sign Language Interpreter program or permission from the department chair.

ITP 152  33000  ASL INTERPRET SIGN TO VOICE I  VO/TECH
This course is organized to provide tools to the students for effectively demonstrating an accurate interpretation of meaning from American Sign Language to spoken English. Objectives include developing voicing skills with a focus on chunking, dynamic equivalence, word selection, register receptive skills, proper location of voice interpreters, team interpreting, the use of a Certified Deaf Interpreter (CDI) and other aspects of voicing. Special requirements of voice interpreting will also be included, such as methods and techniques of voice-over, voicing for Deaf individuals who use ASL, as well as Deaf individuals who may not use ASL. Prerequisite: Admission to the American Sign Language Interpreter program or permission from the department chair.

ITP 154  33000  ASL INTERPRET SIGN TO VOICE II  VO/TECH
This course is organized to provide tools to the student for effectively demonstrating an accurate interpretation of meaning from American Sign Language to spoken English. Objectives include developing voicing skills with a focus on chunking, dynamic equivalence, word selection, register receptive skills, proper location of voice interpreters, team interpreting, the use of a Certified Deaf Interpreter (CDI) and other aspects of voicing. Special requirements of voice interpreting will also be included, such as methods and techniques of voice-over, voicing for Deaf individuals who use ASL, as well as Deaf individuals who may not use ASL. Sign to Voice in American Sign Language Interpreting II is unique from SVASLI in that it provides a broader base of basic elements acquired and learned previously. The challenging and detailed nature and expectations of this course build on Level I understanding and skill sets. Prerequisite: ASL Interpret to Voice I and admission to the American Sign Language Interpreter Training program or permission from the department chair.

ITP 190  33000  ETHICS IN ASL INTERPRETING  VO/TECH
This course will set forth standards toward principles of ethical behavior and professional interpreting practices in regard to general guidelines, ideals and/or expectations that need to be taken into consideration regarding an interpreter’s professional behavior. Particular circumstances are inherently unique to the American Sign Language interpreter culture, and a variety of situations will be examined, discussed and analyzed. Prerequisite: Admission to the Interpreter Training program or permission from the department chair.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ITR 152</td>
<td>ASL INTERPRETING INTERNSHIP Voc/tech</td>
<td>6 0 0 24</td>
<td>This course provides real-time experience within the professional field of interpreting. The experience will include 360 hours of real-time experience with an established interpreter and/or agency. The student will self-select an internship site and submit weekly journals and evaluations regarding participation, activities and other assigned and experiential learning moments of related interpreting context. Other requirements specific to internship site may apply. Students will be evaluated on their ability to carry out professional responsibilities, to apply knowledge and skill in working with various groups of people across the lifespan, to identify and accommodate various language preferences and to apply various service delivery models reflective of current practices in the profession. Prerequisite: Satisfactory completion of the DMACC ASL-ITP program or completion of program equivalency of the DMACC ASL-ITP program and authorization by the department chair. This course is Pass/Fail.</td>
</tr>
<tr>
<td>ITR 101</td>
<td>INTRO INTERP &amp; TRANSLATION open</td>
<td>3 3 0 0 0</td>
<td>A general introduction to the field of oral language interpreting and translation (I/T) including linguistic theory of communication, translation approaches, problems and processes, cultural competency and ethics, the role of the interpreter, modes of interpretation and interpreter errors. Taught in English; students need not be bilingual in other languages to take this introductory course.</td>
</tr>
<tr>
<td>ITR 102</td>
<td>TOOLS INTERP &amp; TRANSLATE open</td>
<td>3 3 0 0 0</td>
<td>In-depth training in the research and technological tools that interpreters and translators use in their field. Extensive use of monolingual and bilingual dictionaries and thesauri. Features of Microsoft Word and Excel for language work and glossary development. Internet tools for vocabulary research and enrichment. Interpretation equipment. Digital recorders for modified consecutive interpretation. Introduction to TRADOS translation memory program. Corequisite: ITR 101 or permission of instructor.</td>
</tr>
<tr>
<td>ITR 111</td>
<td>FUNDAMENTALS OF INTERPRETATION open</td>
<td>3 3 0 0 0</td>
<td>Study and practice of the basic theory and techniques of language interpretation, applied to general topics of current events. The modes of interpreting. Simultaneous Interpreting, Consecutive Interpreting, Sight Translation, Introduction to Lexicography and Vocabulary Development. Students are required to be functionally bilingual in English and at least one other language to take this course. Corequisite: ITR 101 or instructor permission.</td>
</tr>
<tr>
<td>ITR 115</td>
<td>FUNDAMENTALS OF TRANSLATION open</td>
<td>3 3 0 0 0</td>
<td>Study and practice of the basic theory and techniques of language translation, applied to general topics of current events. Basic concepts. Translation as product. Translation as process. Cultural problems. Denotative vs. connotative meanings. Formal properties of texts. Language variety. Glossary development. Prerequisite: ITR 101 or instructor permission and a functional proficiency in English and a second language.</td>
</tr>
<tr>
<td>ITR 120</td>
<td>ETHICS FOR THE INTERP/TRANS open</td>
<td>1 1 0 0 0</td>
<td>This course provides an introduction to basic interpreter and translator ethics, including accuracy, representation of qualifications, avoidance of conflicts of interest, professional demeanor, confidentiality, maintaining a proper role, competency, reporting ethical violations, professional development, disputes with clients, collegiality and contracts. Model scenarios are used for developing and applying ethical judgments. Prerequisite: Minimum of “C” in all ITR courses and complete minimum of three ITR courses.</td>
</tr>
<tr>
<td>ITR 128</td>
<td>LEGAL TERM &amp; SIGHT TRANSLATION open</td>
<td>3 3 0 0 0</td>
<td>Identification of the origins of legal terminology, Advanced sight translation training focusing on court/law enforcement documents. Lexicographical training in locating, understanding and using frequently used legal terminology in criminal proceedings. Intensive practice in sight translating the following types of court/law enforcement documents: warrants, trial information, indictments, waivers of detention hearings, plea agreements, informal letters, presentencing reports and pro se pleadings. Prerequisite: Complete the six ITR required courses with a grade of “C” in each course. Corequisite: PRL 103 or instructor permission.</td>
</tr>
<tr>
<td>ITR 130</td>
<td>JUDICIARY INTERPRETING I open</td>
<td>3 3 0 0 0</td>
<td>Advanced simultaneous interpreting training—dual tasking, shadowing, paraphrasing and interpreting—as applied to court/proceedings. Intensive practice in interpreting for the following court proceedings: initial appearances, bail/detention hearings, change of plea hearings, trials and sentencing hearings. Advanced use of simultaneous interpreting equipment. Prerequisite: ITR 130.</td>
</tr>
<tr>
<td>ITR 132</td>
<td>JUDICIARY INTERPRETING II open</td>
<td>3 3 0 0 0</td>
<td>Advanced simultaneous interpreting training focusing on legal documents. Advanced lexicographical training in legal terminology in criminal and civil proceedings. Intensive practice in translating the following types of legal documents: plea agreements, birth certificates, contracts, wills. Prerequisite/Corequisite: ITR 148.</td>
</tr>
<tr>
<td>ITR 137</td>
<td>JUDICIARY TRANSLATION open</td>
<td>3 3 0 0 0</td>
<td>Advanced written translation training focusing on legal documents. Advanced lexicographical training in legal terminology in locating, understanding, and using common human services terminology in social services contexts. Intensive practice in sight translating selected human services applications/financial affidavits, release of information forms, informational materials and notice of decision letters. Prerequisite: Complete the 6 ITR required courses with a minimum grade of “C” in each course; HSV 109 or instructor permission.</td>
</tr>
<tr>
<td>ITR 138</td>
<td>HEALTHCARE TERMINAL &amp; SIGN TRANSL open</td>
<td>3 3 0 0 0</td>
<td>Identification of the origins of healthcare terminology. Advanced sight translation training focusing on healthcare/medical documents. Lexicographical training in locating, understanding and using frequently used legal terminology in healthcare environments. Intensive noticifications, patient letters, instructions for taking medication. Prerequisite: Complete the six ITR required courses with a grade of “C” in each course. Corequisite: BIO 156 or instructor permission.</td>
</tr>
<tr>
<td>ITR 139</td>
<td>HEALTHCARE INTERPRETING I open</td>
<td>3 3 0 0 0</td>
<td>Advanced consecutive interpreting training—listening, analysis, memorization and interpreting—as applied to healthcare situations. Intensive practice in interpreting for the following events: admitting interviews, well baby visits and standard doctor visits. Advanced use of notetaking techniques. Prerequisite: ITR 148.</td>
</tr>
<tr>
<td>ITR 150</td>
<td>HEALTHCARE INTERPRETING II open</td>
<td>3 3 0 0 0</td>
<td>Advanced simultaneous interpreting training—listening, analysis, memorization and interpreting—as applied to healthcare settings in which the interpreter should be more invisible to allow for a better rapport between providers and patients. Intensive practice in interpreting for the following healthcare proceedings: emergency room (cardiovascular, trauma, childbirth, sexual assault, infectious diseases) and mental health consultations/interventions. Continued development of healthcare terminology, Proper positioning and situational control for simultaneous interpreting. Advanced use of simultaneous interpreting equipment. Prerequisite: ITR 150.</td>
</tr>
<tr>
<td>ITR 152</td>
<td>HEALTHCARE TRANSLATION open</td>
<td>3 3 0 0 0</td>
<td>Advanced written translation training focusing on healthcare/medical documents. Lexicographical training in locating, understanding, and using common human services terminology in social services contexts. Intensive practice in sight translating selected human services applications/financial affidavits, release of information forms, informational materials and notice of decision letters. Prerequisite: Complete the 6 ITR required courses with a minimum grade of “C” in each course: HSV 109 or instructor permission.</td>
</tr>
<tr>
<td>ITR 162</td>
<td>HUM SERV TERM &amp; SIGN TRANSL open</td>
<td>3 3 0 0 0</td>
<td>Identification of the origins of human services terminology. Advanced sight translation training focusing on human/social services documents. Lexicographical training in locating, understanding, and using common human services terminology in social services contexts. Intensive practice in sight translating selected human services applications/financial affidavits, release of information forms, informational materials and notice of decision letters. Prerequisite: Complete the 6 ITR required courses with a minimum grade of “C” in each course; HSV 109 or instructor permission.</td>
</tr>
<tr>
<td>ITR 168</td>
<td>HUM SERV TRANSLATION open</td>
<td>3 3 0 0 0</td>
<td>Advanced consecutive interpreting training—listening, analysis, memorization, note-taking, and interpreting—as applied to common human services situations. Intensive practice in interpreting for client/social worker interviews in the following areas/programs: Iowa Dept. of Human Services, HAWK-L, WIC, General Relief, Title XIX (Medicaid), Child Support Recovery Unit, Bureau of Refugee Affairs, and substance abuse treatment facilities. Corequisite: ITR 168.</td>
</tr>
<tr>
<td>ITR 800</td>
<td>JUDICIARY I/T INTERNSHIP open</td>
<td>2 1 0 3 0</td>
<td>Application of the knowledge skills and attitudes gained in the classroom by intern under qualified/certified interpreters and translators in a variety of court/law enforcement situations. Interns will begin by shadowing their mentor and then move into actual interpreting/ translating assignments in appropriate monitored situations. (P/F) Prerequisite: Minimum grades of “C” in all ITR courses. Corequisite: ITR 152 or ITR 137</td>
</tr>
<tr>
<td>ITR 805</td>
<td>GENERALIST I/T INTERNSHIP open</td>
<td>2 1 0 3 0</td>
<td>Application of the knowledge, skills and attitudes gained in the classroom by intern under qualified interpreters and translators in a variety of general work and volunteer situations. Interns will begin by shadowing their mentor and then move into actual interpreting/ translating assignments in appropriate monitored situations. (P/F) Prerequisite: Minimum cumulative GPA of 2.5 in all Interpretation and Translation Generalist Certificate coursework. Corequisite: ITR 120.</td>
</tr>
</tbody>
</table>
### COURSE DESCRIPTIONS

**ITR 820**  
HEALTHCARE I/T INTERNSHIP  |  21030  
--- | ---  
Application of the knowledge, skills and attitudes gained in the classroom by interning under qualified/certified interpreters and translators in a variety of healthcare environments. Interns will begin by shadowing their mentor and then move into actual interpreting/translation assignments in appropriate monitored situations. (P/F) Prerequisite: Minimum grades of “C” in all ITR courses. Corequisite: ITR 152 or ITR 158

**ITR 910**  
EMPHASIS SEMINAR  |  33000  
--- | ---  
A survey of specialized fields of judicial interpretation/translation, healthcare interpretation/translation, human services interpretation/translation, educational interpretation/translation and business translation/interpretation. Introduction to typical texts and interpreting situations in each specialty area. Students must take this course before enrolling in a specialty emphasis plan. Corequisite: ITR 110 or ITR 115, bilingual or instructor permission

**JOU 110**  
INTRO TO MASS MEDIA  |  33000  
--- | ---  
An introduction to mass communication in a global marketplace. Emphasizes print and electronic media, advertising and public relations, ethics and new technology.

**JOU 121**  
BASIC REPORTING PRINCIPLES  |  33000  
--- | ---  
Designed to provide students with experiences in gathering, organizing and writing news stories.

**JOU 125**  
NEWSPAPER PRODUCTION  |  31400  
--- | ---  
Special work in journalism. Students will produce a DMACC newspaper on one of the campuses and will gain experience in writing, copy editing, layout and design. May be repeated for three additional semesters.

**LIT 110**  
AMERICAN LITERATURE SINCE MID 1800  |  33000  
--- | ---  
Examines American literature from early 20th century through contemporary America. Emphasizes major literary works and their social and cultural contexts.

**LIT 111**  
ANALYZING LITERATURE  |  33000  
--- | ---  
Advanced reporting practices and current trends in the field. Emphasis is placed on the most recent general election and its coverage. Prerequisite: JOU 110. Corequisite: POL 127

**LIT 166**  
SCIENCE FICTION  |  33000  
--- | ---  
A survey of speculative fiction from Frankenstein to literature of the 21st century. Examines major influential works in their literary, social and cultural contexts. Critical analysis is emphasized.

**LIT 180**  
MYTHOLOGY  |  33000  
--- | ---  

**LIT 185**  
AN INTRODUCTION TO MYTHOLOGY  |  33000  
--- | ---  

**LIT 190**  
WOMEN WRITERS  |  33000  
--- | ---  
Introduction to the study and appreciation of literature written by women. Examines major influential works from a variety of historical, social and cultural contexts. Critical analysis is emphasized.

**LIT 210**  
AMERICAN LITERATURE TO MID 1800S  |  33000  
--- | ---  
Examines American literature from the Puritan-Times through the 1860s. Critical approaches are emphasized.

**LIT 240**  
AN INTRODUCTION TO LITERATURE  |  33000  
--- | ---  
Introduction to the study and appreciation of poetry, fiction and drama. Exams and critical approaches are emphasized, and a broad range of authors from a variety of cultural and ethnic groups and a wide span of historical periods is presented.

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**MAD 129**  
MEDICAL TERMINOLOGY  |  10200  
--- | ---  
Basic prefixes, suffixes and root words related to all body systems are studied. Spelling, pronunciation and definitions are included.

**MAD 130**  
TRANSCRIPTION  |  10200  
--- | ---  
Provides an opportunity for the student to become adept in using dictation transcription equipment. Case histories, consultations, physical examinations and surgical reports on prepared tapes are used to provide material that is of immediate practical use. Prerequisite: Grade of “C” or better in MAP 118

**MAD 141**  
MEDICAL INSURANCE  |  33000  
--- | ---  
This course provides a practical approach to medical insurance billing. Emphasis will be placed on current procedural codes (CPT-4) and international classification of diseases codes (ICD-9-CM) used to facilitate proper coding in submitting claims. Pertinent billing tips will be offered for each type of insurance. Prerequisite: HSC 120

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**MAP 128**  
MEDICAL LAB PROCEDURES II  |  32200  
--- | ---  
This course provides a practical approach to expanding the knowledge of specialty specific coding issues. Emphasis will be placed on identifying the specific circumstances and rules for coding in the specialty physician practices. Prerequisite: MAP 141

**MAP 129**  
MEDICAL TERMINOLOGY  |  10200  
--- | ---  
Basic prefixes, suffixes and root words related to all body systems are studied. Spelling, pronunciation and definitions are included.

**MAP 130**  
TRANSCRIPTION  |  10200  
--- | ---  
Provides an opportunity for the student to become adept in using dictation transcription equipment. Case histories, consultations, physical examinations and surgical reports on prepared tapes are used to provide material that is of immediate practical use. Prerequisite: Grade of “C” or better in MAP 118

**MAP 141**  
MEDICAL INSURANCE  |  33000  
--- | ---  
This course provides a practical approach to medical insurance billing. Emphasis will be placed on current procedural codes (CPT-4) and international classification of diseases codes (ICD-9-CM) used to facilitate proper coding in submitting claims. Pertinent billing tips will be offered for each type of insurance. Prerequisite: HSC 120

**MAP 150**  
ADVANCED APPLIED ANATOMY  |  33000  
--- | ---  
Provides an opportunity for the student to become adept in using dictation transcription equipment. Case histories, consultations, physical examinations and surgical reports on prepared tapes are used to provide material that is of immediate practical use. Prerequisite: Grade of “C” or better in MAP 118

**MAP 215**  
MEDICAL LAB PROCEDURES I  |  43200  
--- | ---  
Introduction to medical laboratory procedures, ethics, laboratory personnel and OSHA regulations. Includes use of basic lab equipment and application of basic microbiological principles. Routine urinalysis: physical, chemical and microscopic examination. Quality control is emphasized. Corequisite: MAP 347

**MAP 228**  
MEDICAL LAB PROCEDURES II  |  32200  
--- | ---  
Venipuncture and finger puncture. Experience performing hematology, blood chemistry and EKG. Emphasis on OSHA regulations and quality control in the medical laboratory. Prerequisite: Grade of “C” or better in MAP 225. Corequisite: MAP 348

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**MAP 250**  
DIAGNOSTIC RADIOGRAPHY I  |  22000  
--- | ---  
This course includes radiological principles, film evaluation, processing and techniques, positioning of patients and radiation protection of patients and workers. This course partially meets the requirements for a “Limited Diagnostic Radiographer” set by the Radiologic Division of the Iowa Department of Health. Prerequisite: MAP 225
COURSE DESCRIPTIONS

MAP 252 
DIAGNOSTIC RADIOGRAPHY II VO/C/TECH
A continuation of Diagnostic Radiology I with emphasis on evaluation of films exposed by the student under supervision in a physician's office. Prerequisite: Grade of "C" or better in MAP 250. Corequisite: MAP 624

MAP 347 
MEDICAL OFFICE PROCEDURES I VO/C/TECH
Clinical skills including vital signs, patient exam preparation, charting and patient education. Students perform vision and hearing tests and sterilization procedures. Medical asepsis and emphasis on OSHA regulations. Corequisite: MAP 252

MAP 348 
MEDICAL OFFICE PROCEDURES II VO/C/TECH
Student learns how to assist with examinations, tests and treatments. Inventory and use of medical and surgical supplies. Includes principles of pharmacology, injections, theory of IV therapy, sterile procedures, pulmonary functions, bandaging and patient education. Outpatient scheduling, referral, prior authorizations and documentation. Prerequisite: Grade of "C" or better in MAP 347. Corequisite: MAP 228

MAP 423 
PROFESSIONAL DEVELOPMENT VO/C/TECH
Emphasizes professionalism and responsibilities of the certified medical assistant. Medical specialties, first aid procedures, medical ethics and law and HIPPA are studied.

MAP 532 
HUMAN BODY-HEALTH & DISEASE VO/C/TECH
Designed to provide specialized knowledge of the human body relating to disease processes and possible methods of treatment. Drug terminology is added as well as basic knowledge of symbols and abbreviations. Prerequisite: HSC 120

MAP 544 
HUMAN BODY-HEALTH & DISEASE I VO/C/TECH
Basic biological concepts, structure and function of the body. Interrelationship of body systems in the healthy individual is stressed. Symptoms of disease, diagnostic aids used by the physician, possible methods of treatment and prognosis are presented.

MAP 554 
HUMAN BODY-HEALTH & DISEASE II VO/C/TECH
The study of the body systems is completed. Prerequisite: Grade of "C" or better in MAP 544

MAP 606 
PROFESSIONAL DEVELOPMENT III VO/C/TECH
Provides an opportunity for the student to study situations that arise in the clinical experience. Oral reports by students are supplemented by a review of weekly clinical evaluations. In addition, the student is made aware of community health services available to the patient. Corequisite: MAP 624

MAP 624 
PRACTICUM 5 0 0 0 21 VO/C/TECH
A course designed especially for the preparation of students involving supervised practical application of previously studied theory. New material is integrated as the student progresses. The student receives experience in a physician’s office working under the direct supervision of the physician and office staff. There is no financial remuneration. Prerequisite: Satisfactory completion of all courses in first two terms. Corequisite: MAP 252

MAP 803 
INTERNSHIP-MEDICAL OFFICE SPEC 3 0 0 0 12 VO/C/TECH
This course includes 180 hours of experience in an approved medical facility plus a weekly one-hour seminar class. Emphasis is on the technical, interpersonal and team skills required to be successful in the medical office environment. P/F Prerequisites: HSC 121, MAP 532, MTR 121, ADM 215

MAT 053 
ARITHMETIC COLLEGE PREPARATORY
A review of the fundamental operations of arithmetic including addition, subtraction, multiplication and division of whole numbers, decimals and fractions. This is a college preparatory course designed for those students who need to review and improve their knowledge of the fundamentals of mathematics. College preparatory courses cannot be used to fulfill degree requirements.

MAT 063 
ELEMENTARY ALGEBRA COLLEGE PREPARATORY
A beginning algebra course covering most elementary topics of algebra. This includes the real number system, solving equations and inequalities, polynomials, fractional equations and radical expressions. This is a college prep course designed for students with no algebra background or for students who need review. College preparatory courses cannot be used to fulfill degree requirements.

MAT 073 
ELEMENTARY ALGEBRA II COLLEGE PREPARATORY
A review of elementary algebra along with the new topics including exponents and radicals, functions and graphs, quadratic equations, inequalities and systems of equations. This course cannot be used to fulfill degree requirements. Prerequisite: One year H.S. Algebra, department permission or MAP 063

MAT 093 
MATH STUDY SKILLS COLLEGE PREPARATORY
Provides students with the study techniques necessary for successful completion of their college preparatory or college credit math courses. It also addresses feelings and attitudes that might block math learning and offers strategies and techniques designed to overcome these feelings. College preparatory courses cannot be used to fulfill degree requirements.

MAT 109 
MATH FOR LIBERAL ARTS
The student will begin to think critically by studying logic, sets and statistical reasoning. The student will examine problem-solving and decision-making by studying probability, application of statistical data, modeling and financial mathematics. The student will become aware of possible abuses of mathematics. Finally the student will understand the broad usefulness of mathematics by studying history of mathematics and application of mathematics in art, music, business and/or politics. Prerequisite: 1 year of high school algebra or MAT 063

MAT 114 
ELEMENTARY EDUCATORS MATH I CORE
This is the first of two courses focusing on math concepts taught in K-6. Topics will be covered from both a practical and theoretical standpoint, with an emphasis on practical understanding using concrete examples. Course content includes problem-solving, systems of whole numbers, numeration, algorithms for computation, topics from number theory, and topics from geometry including measurement, polygons, polyhedra, congruence and transformations. This course is for students in education fields and is not appropriate for students majoring in other areas. This is not a methods course. Prerequisite: Two years of H.S. Algebra or MAT 073 or department permission

MAT 116 
ELEMENTARY EDUCATORS MATH II CORE
This course is a continuation of MAT 114. Course content includes basic 2D and 3D geometry and measurement, elementary probability, data analysis and statistics, operations and algorithms for computing with fractions, decimals, percents and integers. Prerequisite: MAT 114 with a grade of “C-” or better

MAT 121 
COLLEGE ALGEBRA CORE
This course provides an intensified study of algebraic techniques and prepares students for future study in mathematics. The central theme of this course is the concept of a function and its graph. Topics include functions, exponents, logarithms, systems of equations, matrices, polynomials conic sections and probability. Prerequisite: Two years of high school algebra or MAT 073

MAT 129 
PRECALCULUS CORE
Polynomial and rational functions, exponential and logarithmic functions, trigonometric functions, analytic trigonometry, vectors, complex numbers, elementary theory of equations, linear systems, matrices and analytic geometry. Prerequisite: MAT 130 or equivalent or department permission

MAT 130 
TRIGONOMETRY CORE
Circular functions and their inverses, trigonometric identities, trigonometric equations, solving triangles and graphing. Prerequisite: Two years H.S. Algebra, department permission or MAT 073

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COURSE DESCRIPTIONS

MAT 141 44000 CORE
FINITE MATH
A general education course in practical mathematics for students not majoring in mathematics or science. This course will include such topics as set operations and applications, methods of counting, probability, systems of linear equations, matrices, geometric linear programming and an introduction to Markov chains. Prerequisite: One year H.S. Algebra or MAT 063

MAT 148 44000 GENERAL
LINEAR ALGEBRA W/APPLICATIONS
A study of the use and application of matrices in the solution of systems of linear equations, determinants, vector spaces, linear transformations, eigenvalues, eigenvectors, bases and projections. Linear algebra is a core course in many engineering, physics, mathematics and computer science programs. This course makes heavy use of computing technology. Graphing calculators required. Prerequisite: MAT 211 or equivalent

MAT 157 44000 CORE
STATISTICS
Tabular and graphical presentation, measures of central tendency and variability, standard elementary procedures involving the binomial, normal, student’s T, chi-square and F distributions, correlation, regression, analysis of variance and several nonparametric procedures. Students will not receive credit for both MAT 157 and BUS 211. Prerequisite: Two years H.S. Algebra, department permission or MAT 073

MAT 160 22000 OPEN
STATISTICAL BUSINESS APPL.
This is the second course in the statistics sequence. Course content includes application and interpretation of probability and statistics as applied to business situations by using sampling, confidence intervals, control charges, simple linear regression analysis, multiple regression analysis, correlation analysis, data analysis, time series analysis, hypothesis testing and computer analysis. Prerequisite: BUS 211 or MAT 157

MAT 162 43200 CORE
PRIN. OF BUSINESS STATISTICS
Make inferences about population parameters. Conduct regression inferential analyses. Obtain, present and organize statistical data using measures of location and dispersion; the Normal distribution; sampling distributions; estimation and confidence intervals; inference for simple linear regression analysis. Use computers to visualize and analyze data. Prerequisite: MAT 141 or MAT 157 or equivalent

MAT 166 44000 CORE
CALCULUS FOR BUSN/SOCIAL SCI
Functions, graphs, differential calculus, integral calculus, introduction to max-min theory for functions of two variables. Emphasis on application of calculus to business problems. Not a substitute for MAT 211 and MAT 217. Prerequisite: Two years H.S. Algebra and MAT 141; or MAT 073 and MAT 141

MAT 211 55000 CORE
CALCULUS I
Absolute values, inequalities, functions, limits, continuity, differentiation, definite integral, exponential and logarithmic functions. Prerequisite: MAT 129 or equivalent or department permission

MAT 213 55000 CORE
CALCULUS II
Continuation of Calculus I. Topics include applications of integration, integration techniques, l’Hospital’s rule, improper integrals, infinite sequences, series, Taylor and Maclaurin series, the calculus of plane curves, parametric equations and polar equations. Prerequisite: MAT 211

MAT 219 44000 CORE
CALCULUS III
Continuation of Calculus II. Topics include vectors and vector-valued functions, tangent and normal vectors, arc length and curvature, vector fields, line and surface integrals, Green’s theorem, the divergence theorem and Stokes’ theorem, multi-variable functions, partial derivatives, directional derivatives and gradients, optimization of multi-variable functions. Prerequisite: MAT 217 or equivalent

MAT 227 44000 CORE
DIFF EQUATIONS WITH LAPLACE
Ordinary differential equations; systems of ordinary differential equations, Laplace transforms, numerical methods and applications. Prerequisite: MAT 217 or equivalent must be taken concurrently or prior to this course

MAT 272 33000 VOC/Tech
APPLIED MATH
A course in elementary mathematical skills for technicians. Topics covered include fundamental operations with whole numbers, fractions, decimals and signed numbers; percents; geometric figures and basic constructions; area and volume formulas; English/Metric systems; measurements; and the interpretation of graphs and charts.

MAT 773 33000 VOC/Tech
APPLIED MATH II
A course in algebra and trigonometry for technicians. Topics covered include polynomials, equations, systems of linear equations, factoring, quadratic equations, trigonometry, powers, roots and logarithms. Prerequisite: MAT 772

MFG 105 32200 VOC/Tech
MACHINE SHOP MEASURING
A study of measurements as used in industry. Units of instruction include tools, gauges, comparators, gauge blocks and inspection practices.

MFG 121 20400 VOC/Tech
MACHINE TRADE PRINTREADING I
A beginning and intermediate blueprint reading course covering basic visualization of shapes and sizes and freehand sketching of objects. Includes section lining, print alterations and projections.

MFG 132 31400 VOC/Tech
MACHINE TRADE PRINTREADING II
An advanced blueprint reading course involving study of industrial metal work drawings as they apply to planning and laying out of jigs and fixtures. Prerequisite: MFG 121

MFG 140 11000 VOC/Tech
GEOMETRIC DIMENSION/TOLERANCE
A basic course explaining the GD & T system and the symbols used within it.

MFG 152 11000 VOC/Tech
REL WELD BLUEPRINT-MFG TECH
Basic skills will be developed in reading welding blueprints with emphasis on welding symbols.

MFG 171 20400 VOC/Tech
MANUFACTURING WELDING I
Basic skill will be developed in welding beads and buildup surfacing in the flat position, welding with oxy-acetylene equipment along with an introduction to GMAC welding.

MFG 172 30600 VOC/Tech
RELATED WELDING–INDUST MAINT
A related welding course for industrial maintenance technicians to include the following topics: Theory and operation of welding equipment, related safety issues, metallurgy and related properties.

MFG 200 33000 VOC/Tech
INTRO TO SAFETY SCIENCE
This course will cover the introduction to safety in business and industry. It will familiarize students with terminology and economics, social, environmental, ethical and regulatory pressures of today. Overview of physical safety, protection and chemical, biological and mechanical hazards.

MFG 250 11000 VOC/Tech
ENGINE LATHE THEORY
An introductory level course explaining the theory of the basic operation and care of an engine lathe. Prerequisite: MFG 251

MFG 251 20400 VOC/Tech
ENGINE LATHE OPERATIONS LAB
An introductory level course for the metal cutting lathe. During this course, students will become familiar with the basic setups, as well as safe operation and care of a lathe in a lab environment. Prerequisite: MFG 250

MFG 252 22000 VOC/Tech
ENGINE LATHE THEORY II
An advanced-level course explaining complex setups and procedures for lathes. Prerequisite: MFG 250. Corequisite: MFG 253

MFG 253 30600 VOC/Tech
ENGINE LATHE OPERATIONS LAB II
An advanced course for the metal cutting lathe. During this course, students will become familiar with advanced setups as well as safe operation and care of a lathe. Prerequisite: MFG 251. Corequisite: MFG 252

MFG 260 11000 VOC/Tech
MILL OPERATIONS THEORY
An introductory level course explaining the theory of the basic operation and care of vertical milling machines. Prerequisite: MFG 261

MFG 261 20400 VOC/Tech
MILLING OPERATIONS LAB
An introductory level course for the vertical mill. During this course, students will become familiar with basic setups, as well as safe operation and care of a milling machine in a lab environment. Corequisite: MFG 260

MFG 270 11000 VOC/Tech
GRINDERS THEORY
Theoretical explanation of procedures in surface grinding. Corequisite: MFG 271

MFG 271 30600 VOC/Tech
GRINDERS LAB
During this course, students will become familiar with basic setups, as well as safe operation and care of a surface grinder in a lab environment. Corequisite: MFG 270

MFG 273 22000 VOC/Tech
MILL OPERATIONS II
An advanced course for the vertical and horizontal milling machines. During this course, students will become familiar with advanced setups and machining concepts, as well as safe operation and care of milling machines. Prerequisite: MFG 260. Corequisite: MFG 274
<table>
<thead>
<tr>
<th>COURSE DESCRIPTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>MFG 274</td>
</tr>
<tr>
<td>MILL OPERATIONS LAB II</td>
</tr>
<tr>
<td>An advanced course for the vertical and horizontal milling machines. During this course, students will become familiar with advanced setups and machining concepts, as well as safe operation and care of milling machines. Prerequisite: MFG 251. Corequisite: MFG 275</td>
</tr>
<tr>
<td>MFG 276</td>
</tr>
<tr>
<td>HAND &amp; BENCH MACHINE TOOLS</td>
</tr>
<tr>
<td>Machine shop procedures including shop safety, hand tools, layout and tool grinding. Operations on drill presses, pedestal grinders and sawing machines.</td>
</tr>
<tr>
<td>MFG 290</td>
</tr>
<tr>
<td>HEAT TREATMENTS</td>
</tr>
<tr>
<td>An introduction to the physical and mechanical characteristics of metals directly associated with the area of heat treatment. Includes structure and composition of metals, testing, hardening, tempering and annealing.</td>
</tr>
<tr>
<td>MFG 330</td>
</tr>
<tr>
<td>CNC MILL OPERATIONS THEORY</td>
</tr>
<tr>
<td>An introductory level course explaining the theory behind the basic operation and programming of a CNC vertical machining center. Corequisite: MFG 331</td>
</tr>
<tr>
<td>MFG 331</td>
</tr>
<tr>
<td>CNC MILL OPERATIONS LAB</td>
</tr>
<tr>
<td>An introductory level course for programming and operating a CNC milling center in a lab environment. Corequisite: MFG 330</td>
</tr>
<tr>
<td>MFG 340</td>
</tr>
<tr>
<td>BASIC LATHE OPERATION</td>
</tr>
<tr>
<td>Course covers setup and operation of the metal lathe, including lathe parts, materials and safety procedures.</td>
</tr>
<tr>
<td>MFG 341</td>
</tr>
<tr>
<td>VERTICAL MILL OPERATION</td>
</tr>
<tr>
<td>Vertical mill operation is explained and reinforced with practical experience using vertical milling machines.</td>
</tr>
<tr>
<td>MFG 350</td>
</tr>
<tr>
<td>CNC LATHE OPERATIONS THEORY</td>
</tr>
<tr>
<td>An introductory level course explaining the theory behind the basic operation and programming of a CNC lathe. Corequisite: MFG 351</td>
</tr>
<tr>
<td>MFG 351</td>
</tr>
<tr>
<td>CNC LATHE OPERATIONS LAB</td>
</tr>
<tr>
<td>An introductory level course for programming and operating a CNC lathe in a lab environment. Corequisite: MFG 350</td>
</tr>
<tr>
<td>MFG 381</td>
</tr>
<tr>
<td>EDM FUNDAMENTALS</td>
</tr>
<tr>
<td>Operation of both conventional and wire EDM machines. Construction of EDM electrodes.</td>
</tr>
<tr>
<td>MFG 402</td>
</tr>
<tr>
<td>BASIC DIEMAKING THEORY</td>
</tr>
<tr>
<td>Introduction to diemaking principles covering die sets, die components, cutting and forming applications and material utilization. Experienced individuals may contact instructor to gain admittance to this course. Prerequisite: MFG 270, 271, 350, 351, 330, 331. Corequisite: MFG 403</td>
</tr>
<tr>
<td>MFG 403</td>
</tr>
<tr>
<td>BASIC DIEMAKING LAB</td>
</tr>
<tr>
<td>Introducing the student to basic diemaking procedures as they construct a blank die, piercing die and a forming die. Required: MFG 270, 271, 350, 351, 330, 331. Corequisite: MFG 402</td>
</tr>
<tr>
<td>MFG 411</td>
</tr>
<tr>
<td>PROGRESSIVE DIE DESIGN</td>
</tr>
<tr>
<td>Hands-on drafting experience in the design, drawing and detailing of a progressive die using computer-aided design (CAD). Prerequisite: CAD T19. Prerequisite: MFG 412</td>
</tr>
<tr>
<td>MFG 412</td>
</tr>
<tr>
<td>ADVANCED DIEMAKING THEORY</td>
</tr>
<tr>
<td>Complex diemaking procedures, including CAM actuated dies and exposure to cost estimating and quoting. Prerequisite: MFG 402</td>
</tr>
<tr>
<td>MFG 413</td>
</tr>
<tr>
<td>ADVANCED DIEMAKING LAB</td>
</tr>
<tr>
<td>Constructing a more complex stamping die, including a progressive die that has been partially designed and detailed by the student. Prerequisite: MFG 403. Corequisite: MFG 412</td>
</tr>
<tr>
<td>MFG 452</td>
</tr>
<tr>
<td>MOLDMAKING</td>
</tr>
<tr>
<td>The student is presented with the basic fundamentals of plastic mold construction and molding processes. Experienced individuals may contact instructor to gain admittance to this course. Prerequisite: MFG 402 &amp; MFG 403</td>
</tr>
<tr>
<td>MFG 510</td>
</tr>
<tr>
<td>PRACTICES-CONTINUOUS IMPROVE</td>
</tr>
<tr>
<td>Provide understanding of the theories, methods and concepts of continuous improvement. Includes detailed, in-depth study of the current theories and practices used in business and provides the student with the knowledge to implement these techniques. Prerequisite: MFG 507</td>
</tr>
<tr>
<td>MFG 512</td>
</tr>
<tr>
<td>INTRO QUALITY CONTROL MGMT.</td>
</tr>
<tr>
<td>This course provides the student with an in-depth knowledge of the skills, tools and management techniques unique to supervising and managing a quality function within an organization. Prerequisite: MFG 502, 510</td>
</tr>
<tr>
<td>MFG 521</td>
</tr>
<tr>
<td>MEASURING DEVICES-SPC</td>
</tr>
<tr>
<td>An introduction to quality-control measuring devices, their use and application of data in Statistical Process Control.</td>
</tr>
<tr>
<td>MFG 522</td>
</tr>
<tr>
<td>APPL OF STATISTICAL METHODS</td>
</tr>
<tr>
<td>An in-depth study in applying the concepts of MFG 502. Additional areas of concentration include sampling plan theory, FMEA study, alpha and beta calculations, reliability, values and applying these concepts in case studies. Prerequisite: MFG 502</td>
</tr>
<tr>
<td>MFG 523</td>
</tr>
<tr>
<td>CONTROLLING MFG BUSINESS COSTS</td>
</tr>
<tr>
<td>The purpose of this course is to provide an understanding of the principles and concepts of production and work costs, the cost impact of shop floor activities and the various contributions company employees have on costs and profitability. Emphasis is placed on the effect an individual has on costs on a day-to-day basis.</td>
</tr>
<tr>
<td>MFG 524</td>
</tr>
<tr>
<td>PM &amp; DIAGNOSING MECH/ELEC SYS</td>
</tr>
<tr>
<td>Provide understanding in the concepts and methods of preventative maintenance. Includes the development of a maintenance and documentation system. Provide fundamental troubleshooting methods and concepts.</td>
</tr>
<tr>
<td>MFG 518</td>
</tr>
<tr>
<td>IMT INTERNSHIP</td>
</tr>
<tr>
<td>Supervised work experience with employer based upon individual training plan that enables student to apply skills and knowledge. Prerequisite: Successful completion of courses in terms 1, 2 and 3 of the Integrated Manufacturing Technology program.</td>
</tr>
<tr>
<td>MFG 932</td>
</tr>
<tr>
<td>INTERNSHIP</td>
</tr>
<tr>
<td>Students enrolled in this course will work in a manufacturing facility as a machinist. Emphasis will be on the integration of academic skills with practical work experience. Prerequisite: Complete terms 1 and 2 and instructor permission</td>
</tr>
<tr>
<td>MGT 101</td>
</tr>
<tr>
<td>PRINCIPLES OF MANAGEMENT-GENERAL</td>
</tr>
<tr>
<td>Explore basic management principles, concepts and practices in the areas of planning, organizing, leading and controlling. Paradigm shifts include motivation, leadership, group dynamics, job design, organizational structure, decision-making, social responsibility and global competition.</td>
</tr>
<tr>
<td>MGT 115</td>
</tr>
<tr>
<td>ADMINISTRATIVE MANAGEMENT</td>
</tr>
<tr>
<td>Introduces concepts of office management aimed at increasing efficiency and productivity in operation of the office. Areas covered include planning and organizing, leadership and human relations and controlling office operations.</td>
</tr>
<tr>
<td>MGT 120</td>
</tr>
<tr>
<td>PROJECT MANAGEMENT BASICS</td>
</tr>
<tr>
<td>This class teaches basic project management theory using project management software. The student will learn to use software to create projects, organize schedules, customize reports, plus work with calendars, multiple projects, evaluate and adjust resources, costs and time factors.</td>
</tr>
<tr>
<td>MGT 128</td>
</tr>
<tr>
<td>ORGANIZATIONAL BEHAVIOR</td>
</tr>
<tr>
<td>This course introduces the basic concepts, methodologies and techniques used in the field of organizational development. Topics covered include fundamental concepts, leadership, organizational environment, social environment, group process and operating activities.</td>
</tr>
<tr>
<td>MGT 130</td>
</tr>
<tr>
<td>PRINCIPLES OF SUPERVISION</td>
</tr>
<tr>
<td>A unique view of organizational structure, the managerial function and the role of the supervisor as it relates to the human relationship between supervisors, peers and subordinates and the practice of sound personnel techniques.</td>
</tr>
<tr>
<td>MGT 145</td>
</tr>
<tr>
<td>HUMAN RELATIONS IN BUSINESS</td>
</tr>
<tr>
<td>Emphasizes the importance of the development of proper attitudes toward self, others and organizational settings. Stresses the development of a good self-image and the relationship this has to energy levels, emotions, verbal and nonverbal communication and defensiveness.</td>
</tr>
</tbody>
</table>
### COURSE DESCRIPTIONS

**MG 147**  
**Leadership Development**  
33000  
**VOC/TECH**  
The central focus of this course is the development of leadership ability. The course provides a basic understanding of leadership and group dynamics theory, assists participants in developing a personal philosophy of leadership and an awareness of one's own ability and style of leadership.

**MG 164**  
**Total Quality Management**  
33000  
**VOC/TECH**  
The basis of this course is to present an understanding of the principles and concepts of continuous improvement and the ability to apply them to an organization. Team concepts and the tools of SPC are also discussed.

**MG 170**  
**Human Resource Management**  
33000  
**VOC/TECH**  
This course studies the role of human resource management as it applies to the challenges, problems, techniques, opportunities, ethical considerations and social dynamics in organizations. Emphasis on human resource activities of both managers and human resource specialists.

**MG 194**  
**Relationship Strategies in Business**  
22000  
**VOC/TECH**  
Includes the awareness of communication styles and how to manage successful interpersonal and organizational relationships.

**MG 248**  
**Systems & Information Management**  
33000  
**VOC/TECH**  
An introduction of managing information for decision-making. Planning what information to obtain, sources and methods of collecting information; interpreting and analyzing; presenting and using information for decisions.

**MG 800**  
**Business Internship I**  
6000 24  
**VOC/TECH**  
One semester of full-time successful on-the-job training in a cooperating retail training station. Emphasis is placed on customer service and sales promotion strategies. (P/F)  
Corequisite: MGT 802

**MG 802**  
**Business Internship Seminar I**  
21200  
**VOC/TECH**  
Field experience problems will be discussed, new occupational information will be presented and business people will speak on the functions, institutions and products found in the field of sales promotion. Corequisite: MGT 800

**MG 805**  
**Business Internship II**  
4000 16  
**VOC/TECH**  
Sales promotion training of the level prescribed in the individual training plan. Exposure will be given to merchandising techniques. The training will be scheduled in an approved cooperating training station. Supervision of the training plan will be made by an instructor/Coordinator. (P/F)  
Corequisite: MGT 807

**MG 807**  
**Business Internship Seminar II**  
11000  
**VOC/TECH**  
Students are exposed to areas of sales promotion through guest speakers, visual aids and discussion of business. Corequisite: MGT 805

**MG 810**  
**Business Internship III**  
4000 16  
**VOC/TECH**  
Consists of one term of part-time on-the-job training of the level prescribed in the individual training plan. Exposure given to merchandising control and supervision. Supervision of the training plan will be made by an instructor/Coordinator. (P/F)  
Corequisite: MGT 812

**MG 812**  
**Internship Seminar III**  
11000  
**VOC/TECH**  
Students are exposed to areas of marketing through guest speakers, visual aids and discussion of business internship experiences. Corequisite: MGT 810

**MG 901**  
**Field Experience I Seminar**  
21200  
**VOC/TECH**  
Field experience problems will be discussed, new occupational information will be presented, and business people will speak on the functions, institutions and products found in the field of management. Corequisite: MGT 920

**MG 920**  
**Field Experience I**  
6000 24  
**VOC/TECH**  
Consists of one term of full-time successful introductory on-the-job management training in a cooperating retail training station. Development and supervision of a training plan will be made by a teacher-coordinator. (P/F)  
Corequisite: MGT 903

**MG 115**  
**Business to Business Marketing**  
33000  
**OPEN**  
This course examines development of retailing, organization of retail institutions, the merchandise handling process, understanding the retail customer, and future directions in retailing.

**MG 120**  
**Selling**  
33000  
**OPEN**  
This course examines development of retailing, organization of retail institutions, the merchandise handling process, understanding the retail customer, and future directions in retailing.

**MG 140**  
**Sales Management**  
33000  
**OPEN**  
Expands on the selling process by training the trainer in functional aspects of sales force management. Emphasis on recruitment, selection and training procedures, motivation, group presentations and meeting management; compensation plans, territory management, forecasting and performance evaluation.

**MG 145**  
**Sales Management**  
33000  
**OPEN**  
Expands on the selling process by training the trainer in functional aspects of sales force management. Emphasis on recruitment, selection and training procedures, motivation, group presentations and meeting management; compensation plans, territory management, forecasting and performance evaluation.

**MG 147**  
**Principles of Advertising**  
33000  
This course examines development of retailing, organization of retail institutions, the merchandise handling process, understanding the retail customer, and future directions in retailing.

**MG 150**  
**Customer Relationship Management**  
33000  
**OPEN**  
A problem-solving approach to the operating principles and methods in the retail field. Management decision-making is emphasized. Prerequisite: MGT 160

**MG 182**  
**Customer Relationship Management**  
33000  
**VOC/TECH**  
Customer Relationship Management provides an overview of a business process used by over half of all retail organizations. This course outlines the steps in the process, the technology and marketing components included, and explains the fundamental benefits to a business with an effective CRM program. Prerequisite: MGT 160

**MG 194**  
**Customer Service**  
33000  
**VOC/TECH**  
Designed to make students aware of the value and reliance that a company places on their Customer Service Representative. Focus is placed on developing skills that enable students to effectively work with external as well as internal customers. Self-management techniques are also included to enhance the retention of a positive attitude in the workplace.
Successful completion of the following courses:

MLT 115

MLT 232

ADV. HEMATOLOGY & COAGULATION

OPEN

A review of basic procedures followed by a study of normal and abnormal blood and bone marrow smears as they relate to anemias and leukemias. Hematology instrumentation, quality control, coagulation, and body fluid analysis are studied. This course includes an in-depth study of various anemias, leukemias, and other hematological and coagulation disorders. Prerequisite: Grade of “C” or higher in both MLT 115 and MLT 120.

MLT 242

CLINICAL CHEMISTRY

OPEN

Study and analysis of electrolytes, proteins, lipids, enzymes, hormones, drugs and various other biochemical compounds found in the human body. Test results are correlated with patients’ conditions. Laboratory math, statistics and quality control are presented. Prerequisite: Grade of “C” or better in MLT 115 and MLT 120. Successful completion of the following courses: BIO 164 or equivalent; CHM 122 or equivalent and CHM 132 or equivalent.

MLT 251

CLINICAL MICROBIOLOGY

OPEN

A study of clinically important microorganisms. Students learn and practice techniques used to isolate and identify pathogenic bacteria, parasites and fungi. Prerequisite: Grade of “C” or higher in MLT 115 and MLT 120. Successful completion of the following courses: BIO 164 or equivalent; BIO 172 or equivalent; CHM 122 or equivalent and CHM 132 or equivalent.

MLT 270

IMMUNOLOGY & SEROLOGY

OPEN

Immunology & serology

A study of clinically important microorganisms. Immune reactions of the body will be studied. Reactions between antigen and antibodies will be used as a means to detect diseases such as hepatitis, infectious mononucleosis and rheumatoid arthritis. Prerequisite: Grade of “C” or higher in MLT 232.

MLT 282

CLINICAL LAB PRACTICUM II

OPEN

Students rotate through the various departments (Hematology, Chemistry, Microbiology, Blood Bank and Pathology) of the hospital laboratory, applying the knowledge and skills learned in the classroom. Prerequisite: Completion of first 4 terms of MLT program with a GPA of 2.0 or higher. Corequisite: MLT 290.

MLT 290

CLINICAL SEMINAR AND REVIEW

OPEN

Students review medical laboratory subjects, share experiences in the clinical area, and present case studies. Job-seeking skills, continuing education opportunities, legal responsibilities and professional organizations are also discussed. A mock certification exam is given. Prerequisite: Successful completion of first four terms in the Med Lab Tech program with a GPA of 2.0 or higher. Corequisite: MLT 282.

MLT 295

ADVANCED EQUIPMENT TECHNIQUES

VOCTECH

Advanced Equipment Techniques gives the student the opportunity to become proficient on the following equipment and associated software: CNC router operation and programming; Paint to Point Machine Center operation and programming; Miller operation including template making, setup and maintenance; Beam saw programming, operation and maintenance; Edgebander operation and programming. Prerequisite: MLW 440, MLW 441, MLW 442 and MLW 443.

MLW 445

MILLIMETER CABINET TECH

VOCTECH

This course is an introduction to the rationale of cabinet making and millwork. Prerequisite: MLW 440, 441, 442, 443.

MLW 446

MILLWORK TECHNIQUES

VOCTECH

An introduction to the initial steps of applying various millwork techniques to projects. Prerequisite: MLW 440, 441, 442, 443.

MLW 447

INTRODUCTION TO APPLICATION

VOCTECH

This course will allow students to begin combining their knowledge of the previous courses in Architectural Millwork to produce mock-up projects. Prerequisite: MLW 440, 441, 442, 443.

MLW 448

ADV MILLWORK APPLICATION I

VOCTECH

This course will combine the skills learned from the previous courses to begin producing completed projects. Prerequisite: MLW 444, 445, 446, 447.

MLW 449

ADV MILLWORK APPLICATION II

VOCTECH

This course will combine the students’ previous courses to produce a completed project from beginning to installation. Prerequisite: MLW 448.

MLW 450

BLUEPRINT READING AND LAYOUT

VOCTECH

An introduction to blueprint reading and layout and the application of this knowledge with the use of specific tools.

MLW 451

MATERIAL IDENTIFICATION/USAGE

VOCTECH

An introduction to the materials used in making architectural millwork products.

MLW 452

INTRODUCTION TO PORTABLE TOOLS

VOCTECH

An introduction to portable tools and the proper care and selection of power tools.

MLW 455

STATIONARY EQUIPMENT

VOCTECH

The purpose of this course is to train the student in the identification, operation, and the maintenance of stationary equipment.
COURSE DESCRIPTIONS

MOR 335  3 3 0 0 0
EMBALMING I  VOC/TECH
Basic techniques of embalming through disinfection, preservation and restoration of deceased human remains. Included are instruments, treatment planning and the practical application of modern embalming theory. Prerequisite: Admission to the Mortuary Science program and BIO 133 or BIO 164

MOR 336  1 0 2 0 0
EMBALMING I CLINICAL  VOC/TECH
This course is a study of basic techniques of embalming through disinfection, preservation and restoration of deceased human remains. Included are instruments, treatment planning and the practical application of modern embalming theory. Prerequisite: BIO 133 and Admission to the Mortuary Science program Corequisite: MOR 335

MOR 340  3 3 0 0 0
EMBALMING II  VOC/TECH
This course is a continuation of MOR 335. Theories and principles of embalming, embalming chemicals, cavity treatments and disaster management will be studied with an emphasis on application to specific cases. Prerequisite: Admission to the Mortuary Science program and MOR 335

MOR 341  1 0 2 0 0
EMBALMING II CLINICAL  VOC/TECH
This course is an advanced study of embalming techniques. Included in the study will be the embalming of difficult cases. Prerequisite: MOR 335 and admission to the Mortuary Science program. Corequisite: MOR 340

MOR 345  3 3 0 0 0
RESTORATIVE ART  VOC/TECH
Students will develop knowledge of anatomical modeling, facial expressions, color, cosmetics, display lighting, instruments and materials and techniques necessary to rebuild the human face that has been destroyed by traumatic and/or pathological conditions. Prerequisite: MOR 335 and admission to the Mortuary Science program

MOR 346  1 0 2 0 0
RESTORATIVE ART LAB  VOC/TECH
This course is designed to provide the student with the theories applied in restorative art procedures. The student will study the anatomical structure of the cranial and facial areas of the human skull, facial proportions and markings, methods and techniques used to restore facial features destroyed by traumatic or pathological conditions and color and cosmetology theory. Prerequisite: MOR 335. Corequisite: MOR 345

MOR 350  2 1 2 0 0
FUNERAL HOME OPERATIONS  VOC/TECH
This course is designed to give the student an understanding of the principles of the operations of a funeral home. Topics of study will include funeral services forms, death benefits and vital statistics. In addition, this course will study the role and function of the funeral director as an effective manager. Emphasis is placed on small business management functions of planning, organizing, motivation, direction and controlling in the funeral home setting and introduces students, through a hands-on approach, to the basic computer applications that are part of the day-to-day operations of a funeral home. Prerequisite: Admission to the Mortuary Science program. Corequisite: MOR 325

MOR 354  1 0 2 0 0
FUNERAL HOME OPERATIONS I  VOC/TECH
This course is designed to give the student an understanding of the principles of the operations of a funeral home. Topics of study will include the role and function of the funeral director as an effective manager, with emphasis placed on small business management functions of planning, organizing, motivation, direction and controlling in the funeral home setting. In addition, the role of inventory knowledge, management and presentation will be addressed. Prerequisite: Admission to the Mortuary Science program. Corequisite: MOR 330

MOR 355  1 0 2 0 0
FUNERAL HOME OPERATIONS II  VOC/TECH
This course is designed to give the student an understanding of the principles of the operations of a funeral home. Topics of study will include funeral services forms, death benefits and vital statistics; an introduction, through a hands-on approach, to the basic computer applications that are part of the day-to-day operations of the funeral home; and conducting non-religious funeral ceremonies. Prerequisite: Admission to the Mortuary Science program. Corequisite: MOR 325

MOR 356  2 2 0 0 0
THANATOCHEMISTRY  VOC/TECH
This course is a survey of the basic principles of disinfection and preservation as they relate to embalming. Especially emphasized are the chemical principles involved in sanitation, disinfection and embalming practice. The development and use of personal, professional and community sanitation practices is addressed, as well as use and precautions related to potentially harmful chemicals that are currently used in the field of funeral services. Prerequisite: Admission to the Mortuary Science program or instructor permission. Corequisite: MOR 335

MOR 365  2 2 0 0 0
SURVEY OF INFECTIOUS DISEASES  VOC/TECH
This course provides a survey of infectious disease processes, nonspecific and specific defense mechanisms and principles of infection control and epidemiology. Safe handling of infectious materials and personal protective equipment are emphasized. Prerequisite: Admission to the Mortuary Science program

MOR 366  1 0 2 0 0
APPLIED VOICE  GENERAL
This course is especially for the beginner in piano. Students will be introduced to the fundamentals of piano playing, including beginning note reading for the keyboard, technical development and appropriate repertoire.

MUA 121  2 1 2 0 0
APPLIED PIANO  GENERAL
Individual instruction in all instruments. Weekly one-hour lessons. May be repeated for a maximum of 4 credits.

MUS 100  3 3 0 0 0
MUSIC APPRECIATION  CORE
A survey of the development of western music through study of representative compositions of many periods and styles. Includes definitions of musical terminology and a major emphasis on listening.

MUS 102  3 3 0 0 0
MUSIC FUNDAMENTALS  CORE
This course introduces students to the elements of music through performance on recorder and piano. Includes instruction in teaching the elements of music to preschool and elementary school children.

MUS 106  4 3 2 0 0
MATERIALS OF MUSIC I  GENERAL
All aspects of music theory will be introduced and explored with the experienced music student. Activities will include ear training, sight singing, keyboard training and written theory assignments.

MUS 107  4 3 2 0 0
MATERIALS OF MUSIC II  GENERAL
As a sequel to Materials of Music I, this course will examine music theory in greater complexity and will emphasize the harmonic aspects of music. Activities will include ear training, sight singing, keyboard skills and written theory assignments. Prerequisite: MUS 106

MUS 143  2 1 2 0 0
CONCERT CHOIR  GENERAL
The concert choir is open to all students. Varied literature is chosen. May be repeated for a maximum of 8 credits.
COURSE DESCRIPTIONS

MUS 150 102 00
CHAMBER ENSEMBLE
GENERAL
This course is open by audition with the conductor to any DMACC student. The Chamber Ensemble (Choir) performs music that represents a variety of musical styles; the music is generally more difficult than the music Concert Choir performs, so prior choral experience is most helpful. Performances serve as the midterm and final exams. There is no limit on the number of times a student may register for this course. However, only four semesters of credit for this course may be used as elective credit toward a DMACC degree.
Prerequisite: audition with the conductor

MUS 202 330 00
WORLD MUSIC
CORE
This course is a survey of musical styles from countries whose music is primarily based on concepts that are not part of the Western culture music tradition. The list of cultures whose music will be studied includes, but is not limited to African, Chinese, Japanese, Indian, cultures from the Near East and indigenous cultures from the Americas.

NET 123 424 00
COMPUTER HARDWARE BASICS
VOC/Tech
This course follows the recommendations of CompTIA on the subject and materials to assist the student in learning about computer hardware and functions needed to pass the A+ Plus exam. A detailed study and hands-on lab component give the student the opportunity to install and troubleshoot computer hardware. It is recommended that the student have a basic understanding of computers, their use and operation.

NET 124 330 00
MICROPROCESSOR INTERFACING
VOC/Tech
A study of microprocessor/microcomputer interface methods. It includes parallel interfacing using the 8255 PPI and serial interfacing using UART and USART's. Digital-to-Analog and Analog-to-Digital converters are also examined.
Prerequisite: ELT 611, 612.
Corequisite: NET 125

NET 125 408 00
MICROPROCESSOR INTERFACING LAB
VOC/Tech
An evaluation of microprocessor interface techniques. The experiments include parallel devices such as 8255 Programmable Peripheral Interface chip, UART and USART serial devices, D/A and A/D converters.
Prerequisite: ELT 611, 612.
Corequisite: NET 124

NET 126 220 00
NETWORKING TECH-MAINFRAME
VOC/Tech
To provide a technical level of understanding in the areas of mainframe networking connectivity, data communication concepts and protocol communication concepts.

NET 127 220 00
SERVICE & SUPPORT
VOC/Tech
Provides technical level of competence installing network interface cards, replacing hard drives, installing communications software and hardware and troubleshooting 3.X and 4.X systems.
Prerequisite: NET 408

NET 128 440 00
NETWORK COMPATIBILITY PRODUCTS
VOC/Tech
Concepts of the software and hardware used to link various computers and operating systems.
Prerequisite: NET 443, 444.
Corequisite: NET 129

NET 129 204 00
NETWORK COMPATIBILITY PROD LAB
VOC/Tech
Course covers installing and configuring compatibility software and hardware. Use of software to share data between dissimilar system types.
Prerequisite: NET 443, 444.
Corequisite: NET 128

NET 139 432 00
MCSE DESKTOP OP SYSTEM
VOC/Tech
Course involves installation, configuration, maintenance and administration of Windows XP Professional software. Prepares students with a knowledge base for Windows XP Pro version certification exam.
Prerequisite: NET 223 or Net Plus Certification

NET 144 322 00
DIGITAL & COMPUTER ELECTRONICS
VOC/Tech
In the context of today's computer technology, this class studies digital electronic circuits concentrating on gates, counters, registers and memory. Also included is the study of data communications by bus structure, parallel and serial ports and microprocessors.
Corequisite: NET 145

NET 145 306 00
DIGITAL & COMPUTER ELECT. LAB
VOC/Tech
In the context of today's computer technology, this class continues the study of digital electronic circuits concentrating on gates, counters, registers and memory through hands-on lab experiments. Also included are lab tasks involving data communications by bus structure, parallel and serial ports and microprocessors.
Corequisite: NET 144

NET 213 424 00
CISCO NETWORKING
VOC/Tech
This course provides the student with a technical level of understanding in the areas of PC and mainframe networking connectivity, data communications and protocol communication.

NET 223 424 00
CISCO ROUTERS
VOC/Tech
This course includes network standards, LANs, WANs, OSI models, routers, router programming, Ethernet and IP Protocol addressing and decision-making and problem-solving techniques.
Prerequisite: NET 213

NET 224 424 00
CISCO SWITCHES
VOC/Tech
CISCO training includes learning the basics of setting up, configuring and maintaining a switch, bridge and router. Additional areas cover layer 1, 2 & 3 network designs, IP addressing scheme, VLANs, IPX compatibility, access lists, TCS and TBC design.
Prerequisite: NET 223

NET 224 424 00
CISCO WIDE AREA NETWORKS (WAN)
VOC/Tech
CISCO training involves WAN design, point-to-point protocol, ISDN, frame relay and network management. Part of this course is involved with extensive review of semester one through semester four material in preparation for the CCNA.
Prerequisite: NET 223

NET 225 432 00
WINDOWS NETWORK MANAGEMENT
VOC/Tech
This course is designed to meet the requirements of MCSE Test #70-278. It covers the basic, entry-level, Windows networking materials and skills.
Prerequisite: NET 123

NET 333 330 00
IMP WINDOWS NETWORK INFRASTRUCTURE
VOC/Tech
This course concentrates on the specifics of network infrastructure administration, including setting up, maintaining and administering the network. The content is geared toward preparation for the associated Microsoft certification test.
Prerequisite: NET 223, 623, 628

NET 343 322 00
WINDSORS DIRECTORY SERVICE
VOC/Tech
This course concentrates on the specifics of active directory administration. Course includes setting up, maintaining and administering the active directory services of current Windows server products.
Prerequisite: NET 223, 623, 628

NET 365 330 00
DESIGN MS ACTIVE DIR & NETWORK
VOC/Tech
This course covers the current curriculum for designing MS active directory services and network infrastructure.
Prerequisite: NET 335, NET 443, NET 664

NET 376 330 00
DESIGNING SECURITY FOR MS.NET
VOC/Tech
Provides knowledge and skills to design a secure network infrastructure, to design security policies and the operations framework. Topics include assembling the design team, modeling threats, analyzing security risks in order to meet business requirements for securing computers in a networked environment, designing an acceptable use policy, designing policies for managing networks, and designing an operations framework for managing security.
Prerequisite: NET 335, NET 343, NET 664

NET 402 322 00
LINUX NETWORK ADMINISTRATION
VOC/Tech
This is the first in a series of ITNA Linux courses. This course covers the basic installation and administration of Linux operating system. For more information, contact the program chairperson of the ITNA Department.
Prerequisite: NET 623 or instructor permission

NET 412 322 00
LINUX SYSTEM ADMINISTRATION
VOC/Tech
This is the second in a series of ITNA Linux courses. This course covers administration of the Linux operating system. For further information, contact the program chairperson of the ITNA Department.
Prerequisite: NET 402 or instructor permission

NET 412 322 00
LINUX SYSTEM PROGRAMMING
VOC/Tech
This is the third in a series of ITNA Linux courses. This course covers system programming for the Linux operating system. The final project for the course will be creating your own Packet Sniffer/ Intrusion Detection System/Firewall. For more information, contact the program chairperson of the ITNA Department.
Prerequisite: NET 412 or instructor permission

NET 452 322 00
LINUX SYSTEM SECURITY
VOC/Tech
This is the first in a series of ITNA Security courses. This course details how to protect your network from malicious users and how to choose and configure a firewall for Microsoft Windows, Novell, Linux and Cisco. For further information, contact the program chairperson of the ITNA Department.
Prerequisite: NET 623 or instructor permission

NET 454 322 00
LINUX SYSTEMS & CERTIFICATION
VOC/Tech
This course provides the student with a thorough study into various Linux/Unix systems available, the advantages and disadvantages, installation techniques and management functions. A significant amount of time will be spent loading, operating and contrasting the various operating systems.
Prerequisite: NET 402, 412, 432
NET 435  32200  LINUX PROGRAMMING FOR ADMIN  VO/C/TECH
This course includes the study of creating and installing bash and Perl scripts, as well as a detailed study of their uses and power controlling a Linux or UNIX environment. The student will also create, compile and link C code and explore the UNIX/Linux kernel. Prerequisite: NET 422

NET 436  32200  LINUX NETWORK PROGRAMMING  VO/C/TECH
The purpose of this class is to familiarize the student with the functions and program skills to successfully support Linux in a network environment. The course will include a major project of programming and installing a successful Linux network service. Prerequisite: NET 435

NET 443  22000  UNIX OPERATING SYSTEM  VO/C/TECH
Concepts of the UNIX operating system commands. Use of shells, shell scripts, facilities and management commands. Corequisite: NET 444

NET 444  10200  UNIX OPERATING SYSTEM LAB  VO/C/TECH
Course includes working with UNIX commands. Students will work with shells, write shell scripts, run facilities and work with management commands. Corequisite: NET 443

NET 484  43200  NETPLUS CERTIFICATION  VO/C/TECH
This course is a comprehensive study for learning, mastering and practicing the concepts required to pass the CompTIA Net+ Certification Exam. The student will have a significant amount of reading and studying, as well as skill-building lab time. This course is intended for the student seeking certification.

NET 488  22000  NETWARE 4.X ADMINISTRATION  VO/C/TECH
Course covers the knowledge and skills needed to perform Netware 4.0 network administration or system management tasks effectively.

NET 512  32200  LINUX ENTERPRISE ADMIN II  VO/C/TECH
Provides advanced administration skills to design, configure and administer a complex NetWare 5 network. Prerequisite: NET 213, 223

NET 541  22000  NOVELL SYSTEM PROGRAMMING  VO/C/TECH
The two main goals of the service and support course are NetWare installation and upgrade and basic network troubleshooting. After completing this course, you will be able to install file servers and workstations, configure and install network boards and cables and isolate and diagnose common network problems. Prerequisite: NET 512, 532

NET 562  33000  FUND OF NETWORK SECURITY  VO/C/TECH
The course prepares students to recognize the threats and vulnerabilities present in existing information systems and to learn to design and develop the secure systems needed in the near future. It also prepares students for the role of decision-maker in the area of information security. Topics include legal and ethical issues, security technologies risk management, network and system security, cryptography and information security maintenance. Prerequisite: BCA 113 or instructor approval

NET 623  44000  NETWORK APPLICATIONS  VO/C/TECH
This course will provide the student with an understanding of the software systems and applications that provide network services across differing networks and operating system platforms. Prerequisite: NET 213. Corequisite: NET 628

NET 628  20400  NETWORK APPLICATIONS LAB  VO/C/TECH
This course will provide the student with hands-on experience in installing and configuring the software systems and applications that provide network services across differing networks and operating system platforms. Prerequisite: NET 213. Corequisite: NET 623

NET 653  43200  MICROSOFT EXCHANGE SERVER  VO/C/TECH
This course covers the current Microsoft Curriculum in the Microsoft Exchange Server Series.

NET 664  52600  MS WINDOWS PROF/SERVER  VO/C/TECH
This course includes the curriculum for the current Microsoft versions of professional and server products. The content is geared toward preparation for the associated Microsoft certification tests. Prerequisite: NET 225, 628, 623

NET 680  33000  TCP/IP FOR NETWORKING  VO/C/TECH
Concepts of the TCP/IP protocol suite. Includes protocol formats, usage and network commands. Concepts of design, installation and management are introduced. Prerequisite: NET 443, 444. Corequisite: NET 681

NET 681  10200  TCP/IP FOR NETWORKING LAB  VO/C/TECH
Hands-on command manipulation of a TCP/IP network. Also includes installation and management. Corequisite: NET 680. Prerequisite: NET 443, 444

NET 711  33000  SQL DATABASE  VO/C/TECH
This course covers the current curriculum for implementing a database in Microsoft SQL Server. For more information, contact the program chairperson of the ITNA program. Prerequisite: NET 330, 664, 545

NET 715  33000  DATABASE SECURITY & AUDITING  VO/C/TECH
This course is intended for students preparing for careers as developers, systems analysts, business analysts, database administrators or system development managers working with database applications. Students learn to implement database security and auditing in order to protect data. Prerequisite: CIS 503

NET 750  32200  COMPUTER FORENSICS & INV.  VO/C/TECH
An introductory course intended for system administrators, providing training in detecting and analyzing data stored or often hidden on computer systems. The course prepares students to use computer forensic tools to uncover violations of company policy, embezzlement, e-mail harassment, leaks of proprietary information, and criminal activity. Prerequisite: NET 612

NET 752  300012  INTERNSHIP  VO/C/TECH
A semi-structured experience in the student's chosen field of information technology working as an intern with a sponsoring organization. The student has the opportunity to network with professionals and employers in his or her field. The student will write a resume suitable for employment applications.

OPT 110  21200  OPHTHALMIC PRETESTING  VO/C/TECH
This course covers the 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, depth perception, as well as the specialized testing procedures of keratometry and blood pressure measurement.

OPT 112  32200  OPHTHALMIC SPECIALTY TESTING  VO/C/TECH
This course provides the student experience and knowledge in the areas of special vision care procedures: subjective refraction, kerometry (non-contact and Goldmann), visual field testing, slit lamp, basic concepts of orthoptics, and the treatment of eye diseases. This course also prepares the technician to assist the doctor in advanced office techniques in the area of ultrasound and in-office surgical procedures. Also covered is medications commonly prescribed for systemic conditions. Patient instruction and assistance are emphasized in laboratory sessions. Prerequisite: OPT 110, OPT 120, OPT 123

OPT 120  32200  BASIC OPTICAL CONCEPTS/OPTICS  VO/C/TECH
This course covers the properties of light and the function of a lens in vision correction. This course begins the study of the neutralization and verification of spectacle lens powers, to include spherical, cylindrical and prism lenses. Corequisite: MAT 772

OPT 123  21200  OCULAR ANATOMY AND PHYSIOLOGY  VO/C/TECH
This course is intended to familiarize the 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. Corequisite: BIO 733

OPT 130  21200  OPHTHALMIC DISPENSING I  VO/C/TECH
This course covers frame definition, parts and types of frames, measurement of frames and lenses, alignment of frames, inserting and removing lenses and an introduction to dispensing of eyewear and frame repairs.
COURSE DESCRIPTIONS

OPT 132  21200  OPHTHALMIC DISPENSING II  VOC/TECH
This course assists the student in developing a mastery of the alignment, adjustment of eyewear and lensometry. It also covers the various lens materials, multifocal styles and lens tints. Prerequisite: OPT 130, OPT 120

OPT 140  32200  CONTACT LENSES  VOC/TECH
This course gives the student in-depth exposure to the technical aspects of a clinical contact lens practice. Lecture and laboratory experiences emphasize lens verification, patient education and evaluation. Prerequisite: OPT 120, OPT 110, OPT 123

OPT 803  10030  PRECLINICAL  VOC/TECH
This course prepares the student for clinical affiliation by having them complete vision screenings on patients. Discussions are held analyzing the results of the screening as well as the student’s performance. Also included in this course will be an introduction to office management techniques including appointment setting and triage, HIPAA, and insurance claim processing. Corequisite: OPT 112, Prerequisite: OPT 110, OPT 120

OPT 818  800032  CLINICAL EXTERNSHIP  VOC/TECH
Students participate 40 hours per week for twelve weeks of assigned clinical experience in clinical settings. The student is expected to achieve specific educational objectives determined for this experience. Prerequisite: Completion of all program courses with a minimum grade of “C” in each

PEA 102  10200  AEROBIC FITNESS I
Introduces aerobic concept of physical fitness. Includes aerobic activities, aerobic exercising and aerobic dance. Course designed for men and women.

PEA 110  10200  BADMINTON I
Introduction to basic skills (serve, clear, drop, drive and smash) and basic knowledge of game play.

PEA 117  10200  BOWLING I
Beginning skills only.

PEA 134  10200  GOLF I
Beginning skills only.

PEA 144  21200  PHYSICAL FITNESS/CONDITIONING
Development of personal fitness using a variety of conditioning and exercise techniques, including weight training, aerobics and aquatic fitness. Instruction on acute and chronic responses to exercise, and the role of exercise in health promotion and weight management.

PEA 146  10200  PHYSICAL FITNESS I
Various exercises and activities to improve physical fitness.

PEA 164  10200  TENNIS I
Introduction to basic skills (forehand, backhand, service and volley) and basic knowledge of gameplay.

PEA 174  10200  SWIMMING I
Beginning skills only.

PEA 176  10200  VOLLEYBALL I
Beginning skills only.

PEA 184  31400  WATER SAFETY INST/LIFEGUARD TR
Provides the student with the practical, cognitive, behavioral and decision-making skills needed for lifeguarding and the necessary skills to conduct/instruct all levels of Red Cross swimming and water safety lesson programs. Upon satisfactory completion, student will receive Red Cross Certification in Lifeguarding and Water Safety Instructor.

PEA 187  10200  WEIGHT TRAINING I
Introduction to basics of weight training. Emphasizes increasing physical capacity, i.e., increased muscular strength and power.

PEA 224  10200  GOLF II
Expansion of basic golf skills. Prerequisite: PEA 134 or equivalent skill

PEA 284  10200  ADVANCED LIFESAVING
Purpose is to provide the student with the skills/techniques to successfully rescue a person in need. Focus on water safety, personal and self rescue, swimming rescues and artificial resuscitation. Upon satisfactory completion, the student will receive Red Cross Certification. Required: Students must pass a swim test

PEC 110  11000  COACHING ETHICS, TECH & THEORY
Course covers techniques and theory of coaching in addition to sports psychology, preparation for competition and issues in coaching.

PEC 161  33000  SPORTS OFFICIATING
Study of the rules and official’s mechanics for high school football, basketball and baseball. Provides guidelines for students to become licensed officials in Iowa for these sports.

PEH 102  33000  HEALTH
Physical, emotional and social factors as they relate to our state of personal health. To better understand and aid in the alleviation of communicable and chronic diseases, drug use and environmental problems.

PEH 110  22000  PERSONAL WELLNESS
This course will aid in the enhancement of knowledge, skills and attitudes necessary to promote positive lifelong wellness decisions. Students will look at the physical, social, intellectual, emotional, occupational and spiritual components of wellness.

PEH 120  33000  PRINCIPLES: PERSONAL TRAINING I
Entry-level course designed to introduce the field of personal training. Basic exercise assessment and prescription concepts will be used to discuss and demonstrate safe and appropriate fitness programs with an emphasis on preparing students for taking a nationally recognized certification exam.

PEH 141  22000  FIRST AID
Discussion and application of the basic techniques in administering first aid will be covered in this course. Cardiopulmonary resuscitation will be covered and other emergency situations will be discussed. Red Cross Certification will be awarded to those who qualify.

PEH 162  33000  INTRO TO PHYSICAL EDUCATION
History of physical education. Careers and professional leadership in physical education with emphasis on teaching. Examines the four areas of most vital concern to the physical educator: recreation and leisure, sports, curriculum, and research and evaluation.

PEH 178  33000  SPORTS DIVERSITY
This course examines diversity in sports and in sports organizations: how individuals differ, how differences influence organizations, how to manage diversity in the workplace, how to understand legal issues and manage diversity training.

PEH 190  22000  SPORTS NUTRITION
Basic principles of human nutrition and nutritional needs for athletes and/or physically active populations. Issues discussed include ergogenic aids, carbohydrate loading/ manipulation, eating disorders, protein supplements and hydration. Practical application will include dietary analysis and composition for people in various activities and conditions.

PEH 255  33000  PRINCIPLES–SPORTS MANAGEMENT
The foundation and principles of sport management. Theory, ethics and practice of management are discussed in relation to the fitness and sport industries.

PEH 262  33000  WELLNESS PROG/PLANNING/ORGANIZ
The purpose of this course is to familiarize the student with wellness programs in the workplace. Emphasis will be on program design, health assessment, corporate management issues and promotion.

PEH 265  21200  LEADERSHIP TECH FITNESS PROG
Development of exercise leadership skills for a variety of activities. Includes the planning and promotion as well as the teaching techniques for developing fitness in others using a variety of exercise modalities. Aerobics, weight training and aquatic fitness are included. Prerequisite: PEA 144

PEH 920  20008  FIELD EXPERIENCE
Supervised experience in fitness or sports management agency. The student will be able to apply their own knowledge and skills in a professional setting.

PET 110  21200  INTRO TO ATHLETIC TRAINING
Entry-level course designed to introduce the potential coach or athletic trainer to the field of athletic training. Basic care and prevention of athletic injuries will be dealt with in order to equip the coach or trainer with the knowledge to make intelligent decisions regarding common athletic injuries.
COURSE DESCRIPTIONS

PEV 115 1 0 2 0 0
VARSITY BASEBALL
OPEN
Provides experience and instruction in men’s baseball. Course is designed for the varsity athlete in terms of conditioning, practice, game preparation and weight training. Limit 1 credit per year with a maximum of 2 credits total. Credit for a sport course may not be applied toward graduation if credit is also received for any skill technique course in the same sport. Prerequisite: Permission of the head coach

PEV 170 1 0 2 0 0
VARSITY VOLLEYBALL
OPEN
Provides experience and instruction in women’s volleyball. Course is designed for the varsity athlete in terms of conditioning, practice, game preparation and weight training. Limit 1 credit per year with a maximum of 2 credits total. Credit for a sport course may not be applied toward graduation if credit is also received for any skill technique course in the same sport. Prerequisite: Permission of the head coach

PHR 100 2 2 0 0 0
PHARM TECHNICIAN ORIENTATION
VOC/TECH
This course is designed to provide the student with an overview of the pharmacy profession, pharmacy law and the role and function of the pharmacist, the pharmacy technician and the pharmacy clerk. A large component of this course will focus on learning the importance of interpersonal communication skills and confronting communication barriers.

PHR 101 3 3 0 0 0
PHARMACY OPERATIONS I
VOC/TECH
This course simulates daily activities in the pharmaceutical practice setting. Topics include: order entry processes, medication distribution systems, inventory, prescription processing, billing, repackaging, cart fills, floor stock, robotics, controlled substance distribution, pharmaceutical computer systems, utilization of drug information resources and proper communication techniques.

PHR 124 3 3 0 0 0
PHARMACOLOGY II
VOC/TECH
This course provides practical knowledge of pharmacology including mechanisms of drug actions, interactions, indications and contraindications, and medication side effects in the following therapeutic categories: dermatology, sensory (eye and ear), immunology, hematology, urinary/renal, infectious disease, oncology, nutrition, toxicology, recombinant technology and over-the-counter medications. Prerequisite: PHR 123 or permission of program chairperson

PHR 132 3 3 0 0 0
PHARMACEUTICAL MATHEMATICS
VOC/TECH
Pharmaceutical mathematics including reading, interpreting and solving calculation problems encountered in the preparation and distribution of drugs will be covered. The student will work on the conversion of measurements within the metric system of weight and volume. Topics will include ratio and proportion, percentage, dilution and concentration, milliequivalents, units, intravenous flow rates and solving dosage problems. Prerequisite: evidence of "C" or better in one year of high school algebra or the equivalent (MAT 065)

PHR 140 1 1 0 0 0
PHARMACY LAW
VOC/TECH
This course reviews the laws affecting pharmacy practice. Course highlights include the Food, Drug and Cosmetic Act and various federal and state controlled substance acts.

PHR 160 3 1 4 0 0
COMPOUNDING
VOC/TECH
This course provides an introduction to admixture within a pharmacy setting including sterile and nonsterile compounding. Specific study topics include: medication and parental administration, facilities-equipment-supplies utilized in admixture preparation, techniques utilized in parenteral product compounding, terminology and calculations used in compounding products, parenteral medication incompatibilities and quality assurance in the preparation of compounding products. Prerequisite: PHR 123

PHR 801 2 0 0 0 8
PHARM TECHNICIAN INTERNSHIP I
VOC/TECH
This course provides the application of basic pharmacy technician concepts in a community pharmacy setting with rotation options in a long-term care pharmacy or a home healthcare pharmacy. Internship requires 150 contact hours. Prerequisite: approval of program chairperson
**COURSE DESCRIPTIONS**

**PHR 802 3 1 0 0**

**PHARM TECHNICIAN INTERNSHIP II** VOC/TECH

This course provides an advanced level of internship rotation in a pharmacy setting such as community hospital or medical center, intravenous home healthcare facility, drug information center or a customized rotation based on a student’s previous experience. Internship includes 16 hours of seminar. Internship requires 150 contact hours. Corequisite: Approval of program chairperson.

**PHYS 152 4 3 2 0**

**ASTRONOMY** CORE

The student is introduced to a scientific overview of stars, planets, galaxies and other inhabitants of the universe and the forces that determine their behavior. The history of discovery and the methods used to study distant objects are included.

**PHYS 106 4 3 2 0**

**SURVEY OF PHYSICS** CORE

The student is exposed to the scientific method with an emphasis on elementary problem-solving. Along with a review of basic mathematics, the topics of weights and measures, mechanics, heat, gas laws, electricity, magnetism, sound, light and modern physics are covered.

**PHY 160 5 4 2 0**

**GENERAL PHYSICS I** CORE

This course is the first semester of a two-semester sequence in non-calculus physics. Topics include forces, linear and rotational motion, energy, momentum, fluids, gases and heat. Prerequisite: MAT 150 or HS equivalent.

**PHY 161 5 4 2 0**

**GENERAL PHYSICS II** CORE

This course is the second semester of a two-semester sequence in non-calculus physics. Topics include electricity, magnetism, optics and modern physics. Prerequisite: PHY 160 or instructor’s permission.

**PHY 213 6 5 2 0**

**CLASSICAL PHYSICS I** CORE

This course is calculus-based and intended for engineering and science majors. Topics covered include statics, dynamics, kinematics, fluid behavior, wave motion, vibrating systems, heat and thermodynamics. Corequisite: MAT 211 or equivalent must be taken concurrently with or prior to this course.

**PHY 223 6 5 2 0**

**CLASSICAL PHYSICS II** CORE

This course is a continuation of Classical Physics I. Topics covered include static electricity, electrical circuits, magnetism, time-dependent electric and magnetic fields, optics and modern physics. Prerequisite: PHY 213 or equivalent. Corequisite: MAT 217 must be taken concurrently or prior to this course.

**PHY 710 3 2 2 0**

**TECHNICAL PHYSICS** VOC/TECH

A physics course for students of technology. Topics include forces, work, energy, heat, electricity and magnetism with a strong emphasis on practical applications. Prerequisite: MAT 712 or equivalent.

**PN 151 4 2 4 0**

**FUNDAMENTALS OF NURSING** OPEN

Introduces the concepts of health assessment, safety, critical thinking, pharmacology, teaching/learning and communication. Associated skills are performed in the laboratory setting.

**PN 152 4 2 2 3**

**NURSING PRACTICE I** OPEN

Introduces nursing care of clients with common health problems with a focus on health assessment, standardized plan of care, therapeutic interventions, safety and basic communication. Includes lab and practicum applications. Prerequisite: PN 151 and PN 153.

**PN 153 2 2 0 0**

**SUCCESS IN NURSING** OPEN

Explores the art and science of nursing practice including nursing history, roles, and legal/ethical practice issues for the professional practical nurse. Healthcare settings and health/illness/hospitalization will be discussed. Strategies for success in nursing will be applied.

**PN 155 2 2 0 0**

**PRACTICAL NURSING ROLES** OPEN

Examines roles and responsibilities of the licensed practical nurse including client response to acute and chronic illness and individual readiness to practice nursing. Prerequisite: PN 151, 152, 153, PSY 121, BIO 754.

**PN 605 5 3 0 6**

**NURSING PRACTICE II** OPEN

Theory and practice in caring for clients with predictable health needs involving sexuality, reproduction, sensory/perception/cognition, health promotion, illness prevention, self-concept, mobility and bowel elimination alterations. Prerequisite: PN 151, PN 152, PN 153, PSY 121, BIO 754.

**PN 606 5 3 0 6**

**NURSING PRACTICE III** OPEN

Theory and practice in caring for clients with predictable health needs involving comfort, circulation, oxygenation, nutrition, endocrine and urinary alterations. Prerequisite: PN 151, PN 152, PN 153, PSY 121, BIO 754.

**PNL 111 3 3 0 0**

**AMERICAN NATIONAL GOVERNMENT** CORE

A study of the American political system and how and why the citizenry relate to the government as they do. Emphasis is placed upon the organization and functioning of the presidential, legislative and judicial subsystems.

**PNL 112 3 3 0 0**

**AMERICAN STATE & LOCAL GOVERNMENT** CORE

A study of the organization, operations and politics of state and local governments. Emphasis on an analysis of the legislative, executive and judicial roles and processes.

**PNL 121 3 3 0 0**

**INTERNATIONAL RELATIONS** CORE

The international system is examined from several perspectives including the United States, Russia and China. Emphasis is placed upon ideology, national interest, the use of power, international law and organization.

**PNL 125 3 3 0 0**

**COMPARATIVE GOV'T & POLITICS** CORE

Examination of the government and politics of such countries as Great Britain, Mexico, Germany and Russia. Each nation is viewed in terms of its political culture, party system, executive, legislative and legal organization.

**PNL 127 3 3 0 0**

**NEWS MEDIA-ELECTORAL POLITICS** GENERAL

Course will examine the role the news media play in electoral strategy and outcomes. Focus will be on the relationship between the voting public, television and print media, and public officials. The most recent election will be assessed. The course is designed for prospective journalism and political science majors. Corequisite: JOU 163.

**PNL 129 3 3 0 0**

**POLICIES OF TERRORISM** GENERAL

An interactive course analyzing the philosophy and methodology of prominent extremist groups in the US and the world. Focus will be on definitions, conditions, media response, and prospects for future terrorist activity. Assessments will be student-centered and emphasize research and composition.

**PRL 111 3 3 0 0**

**INTRO TO PUBLIC ADMINISTRATION** CORE

Study of the theory and practice of public administration examining alternate organization theories and practices, personnel administration, problems of communications within organizations, and styles of leadership. Course emphasizes the interrelationships of professional and political influences on decision-making.

**PRL 112 3 3 0 0**

**LEGAL RESEARCH & WRITING I** OPEN

The nature of legal authority and tools and techniques of basic legal research and writing. Emphasis will be on Iowa law. Degree Students: If transcript has not been submitted, you must contact the Registration Office to register for this course. Prerequisite: ENG 105.

**PRL 113 3 3 0 0**

**LEGAL RESEARCH & WRITING II** OPEN


**PRL 114 3 3 0 0**

**ADV LEGAL RESEARCH & WRITING** OPEN

Research and analysis of complex and multiple factual and legal issues. Preparation of legal documents using analysis and application of legal research. Use of specialized research sources. Prerequisite: PRL 113.

**PRL 115 3 3 0 0**

**COMPUTERIZED LEGAL RESEARCH** OPEN

Introduction to computer-assisted legal research. Training in legal research search strategies using both the Lexis and Westlaw systems. Prerequisite: PRL 112.

**PRL 125 3 3 0 0**

**EVIDENCE: THEORY & PRACTICE** OPEN

A study of the substantive and procedural laws of evidence. Introduction to the rules of evidence. Methods of discovering, preserving and presenting evidence in civil and criminal trials. Prerequisite: PRL 131 or instructor permission.

**Victoria ONLINE: www.DMACC.edu**
## COURSE DESCRIPTIONS

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Units</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>PRL 131</td>
<td>3 3 0 0 0</td>
<td>OPEN</td>
</tr>
<tr>
<td>Torts &amp; Litigation I</td>
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<tr>
<td>A study of the basic law relating to personal and property damage. Topics include intentional tort, negligence, nuisance, strict liability and automobile law. Principles of trial practice including drafting basic pleadings and organization of materials for trial. Prerequisite: PRL 103, 112 or instructor permission</td>
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<tr>
<th>Course Code</th>
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<tbody>
<tr>
<td>PRL 132</td>
<td>3 3 0 0 0</td>
<td>OPEN</td>
</tr>
<tr>
<td>Torts &amp; Litigation II</td>
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<tr>
<td>A continuation of Torts &amp; Litigation I. Areas of concentration will be premise liability, family torts, defamation, governmental immunity, malpractice and wrongful death. Advanced trial practice including drafting of pleadings and discovery documents. Prerequisite: PRL 131</td>
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<tr>
<th>Course Code</th>
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<tbody>
<tr>
<td>PRL 137</td>
<td>3 3 0 0 0</td>
<td>OPEN</td>
</tr>
<tr>
<td>Debtor/Creditor Law</td>
<td></td>
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<tr>
<td>Procedures in non-bankruptcy debt collection. Fundamentals of bankruptcy law and bankruptcy procedure. Examination of alternatives to formal bankruptcy proceedings. Prerequisite: PRL 103, 112</td>
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<tr>
<th>Course Code</th>
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<tbody>
<tr>
<td>PRL 141</td>
<td>3 3 0 0 0</td>
<td>OPEN</td>
</tr>
<tr>
<td>Business &amp; Corporate Law I</td>
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<td></td>
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<tr>
<td>A study of the fundamentals of the law of contracts, the uniform commercial code and the rights of creditors in transactions.</td>
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<th>Course Code</th>
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<tbody>
<tr>
<td>PRL 142</td>
<td>3 3 0 0 0</td>
<td>OPEN</td>
</tr>
<tr>
<td>Business &amp; Corporate Law II</td>
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<tr>
<td>Continuation of Business &amp; Corporate Law I. Survey of rights of debtors and creditors in collections and bankruptcy. Formation of proprietorships, partnerships and corporations, and a survey of the law applicable to each. Preparation of documents necessary to the organization and operation of each. Prerequisite: PRL 141</td>
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<th>Course Code</th>
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<tbody>
<tr>
<td>PRL 151</td>
<td>3 3 0 0 0</td>
<td>OPEN</td>
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<tr>
<td>Real Estate Law</td>
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<tr>
<td>A study of the law of real property and a survey of the more common types of real estate transactions. Emphasis is on the preparation of the instruments necessary to complete various real estate transactions. Prerequisite: PRL 103, 112 or instructor permission</td>
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<th>Course Code</th>
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<tr>
<td>PRL 167</td>
<td>3 3 0 0 0</td>
<td>OPEN</td>
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<tr>
<td>Probate Procedure</td>
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<tr>
<td>A study of wills including validity requirements, modification and revocation. Formation of trusts and the characteristics and requirements of each type. Laws of testament and intestate succession. Forms and procedures for probating an estate. Prerequisite: PRL 103, 112 or instructor permission</td>
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<th>Course Code</th>
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<tbody>
<tr>
<td>PRL 169</td>
<td>3 3 0 0 0</td>
<td>OPEN</td>
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<tr>
<td>Wills/Estate Planning/Taxation</td>
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<tr>
<td>Basic principles of estate planning in order to minimize estate and gift tax consequences. Preparation of federal estate, gift tax returns and Iowa inheritance tax returns. Drafting of wills designed to carry out estate plans. Prerequisite: PRL 167</td>
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<th>Course Code</th>
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<tbody>
<tr>
<td>PRL 171</td>
<td>3 3 0 0 0</td>
<td>OPEN</td>
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<tr>
<td>Administrative Practice</td>
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<tr>
<td>A study of administrative law and procedures for administrative hearings in various governmental agencies. Drafting and researching administrative rules and regulations will be covered. Prerequisite: PRL 103, 112 or instructor permission</td>
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<th>Course Code</th>
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<tbody>
<tr>
<td>PRL 182</td>
<td>3 3 0 0 0</td>
<td>OPEN</td>
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<tr>
<td>Mediation</td>
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<tr>
<td>Classroom study of mediating legal disputes. Students will study the purposes of mediation using “objective” criteria, impediments to resolution, moving beyond impasse and reaching an agreement. Prerequisite: PRL 103, 112 or instructor permission</td>
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<th>Course Code</th>
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<tbody>
<tr>
<td>PRL 200</td>
<td>4 1 0 0 0</td>
<td>OPEN</td>
</tr>
<tr>
<td>Legal Internship &amp; Ethics</td>
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<tr>
<td>Application of the theoretical knowledge gained in the classroom by interning in a private law office, governmental agency or private business that utilizes attorneys. Students will participate in seminars concerning their internship experiences and legal ethics. Total internship requirement is 225 hours. (P/F) Prerequisite: Minimum grades of “C” in all PRL courses and complete a minimum of eight PRL courses</td>
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<th>Course Code</th>
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<tbody>
<tr>
<td>PRL 212</td>
<td>3 3 0 0 0</td>
<td>CORE</td>
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<tr>
<td>Developmental Psychology</td>
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<tr>
<td>The study of factors that affect human development from conception to death, with emphasis on topics such as physical, cognitive and social changes, methods of study and current issues.</td>
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<tbody>
<tr>
<td>PRL 214</td>
<td>3 3 0 0 0</td>
<td>OPEN</td>
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<tr>
<td>PRIN. OF BEHAVIOR MODIFICATION</td>
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<tr>
<td>The principles of learning theory with a major emphasis on operant conditioning will be studied. Emphasis will be on the practical application of these principles to the areas of mental health, mental retardation and education.</td>
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<tr>
<th>Course Code</th>
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<tbody>
<tr>
<td>RCP 100</td>
<td>3 3 0 0 0</td>
<td>OPEN</td>
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<tr>
<td>Intro to Respiratory Care</td>
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<tr>
<td>This initial course in the Respiratory Therapy program emphasizes the assessment and evaluation of patients. Also included will be a history of healthcare, medical specialties, communication skills and medical terminology. Students must demonstrate skill in the assessment of patient vital signs. Prerequisite: B1O 153 or B1O 164</td>
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<th>Course Code</th>
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<tbody>
<tr>
<td>RCP 240</td>
<td>4 3 2 0 0</td>
<td>OPEN</td>
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<tr>
<td>Respiratory Therapeutics</td>
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<tr>
<td>This course introduces the student to basic therapeutic techniques utilized in respiratory care. Major topics include medical gas therapy, humidity and aerosol, cylinder systems and physical principles of gases and liquids. Students will be required to demonstrate competence in the techniques to receive a passing grade in the course. Prerequisite: RCP 100 must be taken concurrently or prior to this course</td>
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<tr>
<th>Course Code</th>
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<tbody>
<tr>
<td>RCP 250</td>
<td>4 3 2 0 0</td>
<td>OPEN</td>
</tr>
<tr>
<td>Cardio/Pulmonary Therapeutics</td>
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<tr>
<td>Students will learn basic patient care techniques of hyperinflation therapy, secretion clearance, airway care, patient assessment, pulmonary rehabilitation, subacute respiratory care and assessment of effectiveness of therapies. Students will be required to demonstrate competence in procedures to succeed in this course. Corequisite: RCP 100 must be taken concurrently with or prior to this course; Corequisite: RCP 240</td>
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<tbody>
<tr>
<td>RCP 350</td>
<td>5 5 0 0 0</td>
<td>OPEN</td>
</tr>
<tr>
<td>Cardio/Pulmonary Renal Pathophysiology</td>
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<tr>
<td>An in-depth study of the normal functioning of the cardiovascular, pulmonary and renal systems, emphasizing their interactions, is presented. Progresses to study of the common adolescent and adult diseases affecting the three systems. Interpretation of the results of arterial blood gas pH data will be taught. Prerequisite: RCP 250 and B1O 153 must be taken concurrently with or prior to this course</td>
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</table>
COURSE DESCRIPTIONS

RCP 400 3 3 0 0 0
RESP THERAPY PHARMACOLOGY OPEN
This course provides a study of the actions and interactions of drugs with and within the body. Theories of drug action, pharmacodynamics and methods for drug administration will be taught. Drugs affecting the cardiovascular, pulmonary and renal systems will be emphasized. Prerequisite: RCP 250 and BIO 734 must be taken concurrently with or prior to this course.

RCP 410 3 3 0 0 0
CARDIO/PULMONARY DIAGNOSTICS OPEN
Principles and techniques of testing of cardiovascular and pulmonary function will be learned with an emphasis on the evaluation and interpretation of the results of the tests. Integration of test results with clinical picture and principles of polysomnography will be learned. Prerequisite: BIOL 734 or BIOL 164, RCP 360, 400.

RCP 500 5 4 2 0 0
ADVANCED RESPIRATORY THERAPY OPEN
Techniques of initiation, monitoring, maintenance and discontinuation of mechanical ventilation in a variety of care settings will be learned. Students will develop skill in ABG analysis and electrocardiography. Adjuncts for the advanced life support will be learned. Students will become proficient in the analysis of arterial blood gases and basic techniques of electrocardiography. Students will learn the use of adjuncts for the treatment of cardiopulmonary arrest. Prerequisite: BIOL 734 or BIOL 164, RCP 360.

RCP 601 4 3 2 0 0
NEONATAL/PED RESP THERAPY VOC/TECH
Course will begin with embryonic development of the respiratory and cardiovascular systems and progress to teaching normal function, as well as teaching the common neonatal and pediatric diseases, including therapeutic techniques and monitoring of the patients. Prerequisite: BIOL 734 or 164, RCP 360.

RCP 700 4 2 0 8 0
RESP THERAPY PRACTICUM I OPEN
This is the initial hospital experience. Consists of supervised care of patients with respiratory disorders. Students will administer IPPB, aerosol, postural drainage and incentive breathing therapies. Other therapeutic modalities that have been learned will be introduced as well. Prerequisite: RCP 250, Corequisite: RCP 360, 400.

RCP 705 5 2 0 11 0
RESP THERAPY PRACTICUM II OPEN
This practicum will continue the supervised experience in provision of basic patient care techniques to therapies from Practicum I. Arterial puncture, arterial line sampling and analysis of blood samples will be introduced. Suctioning of airways will be emphasized. Prerequisite: RCP 700.

RCP 710 7 2 0 16 0
RESP THERAPY PRACTICUM III OPEN
The practicum continues supervised experience in basic therapeutic techniques with emphasis on increased speed and efficiency. Neonatal intensive care will be introduced. Students will continue development of skills in sampling and analyzing arterial blood. ECGs and other cardiac diagnostic tests will be observed. Prerequisite: RCP 601, 705.

RCP 715 7 2 0 15 0
RESP THERAPY PRACTICUM IV OPEN
Hospital respiratory care with the addition of mechanical ventilation and care of patients in critical care units will complement the techniques from the prior practicums. Observation and performance of pulmonary function testing will be learned. Prerequisite: RCP 500, 710, 410 must be taken concurrently with or prior to this course.

RCP 720 5 2 0 11 0
RESP THERAPY PRACTICUM V OPEN
The fourth clinical experience with emphasis on the care of patients in critical care areas of the hospital. All techniques and procedures previously performed will continue to be administered to patients. Prerequisite: RCP 410, 715.

RCP 800 3 3 0 0 0
RESP THERAPY MGMT & ETHICS OPEN
 Begins with study of the organization and management of a respiratory therapy department. Consideration of issues of jurisprudence and medicolegal aspects of healthcare. Tactful interactions and ethical practices will be emphasized. Will also serve to review much of what has been assimilated in the program. Prerequisite: RCP 710.

RDG 038 3 3 0 0 0
COLLEGE PREPARATORY READING I COLLEGE PREPARATORY
The first in a series of two courses designed to help students succeed with college-level reading assignments. Emphasis will be placed on vocabulary development and basic comprehension skills, particularly the skill of recognizing the main idea and supporting details. College preparatory courses cannot be used to fulfill degree requirements. Prerequisite: COMPASS reading score of 35 or higher or instructor permission based on alternative test.

RDG 039 3 3 0 0 0
COLLEGE PREPARATORY READING II COLLEGE PREPARATORY
The second in a series of courses designed to help students succeed with college-level reading assignments. Emphasis is on strengthening vocabulary and comprehension skills including annotating, summarizing, making inferences and reading critically. College preparatory courses cannot be used to fulfill degree requirements. Prerequisite: Grade of “C” or higher in RDG 038 or COMPASS score of 61 or higher on the Reading section or instructor approval based on an alternative test.

RDG 163 3 3 0 0 0
SPEED READING GENERAL
An advanced reading course designed to improve reading speed and comprehension. Emphasis on adapting to varying content and levels of difficulty and reading purposes. Prerequisite: Grade of “C” or higher in RDG 039, ACT reading score of 19 or higher. COMPASS score of 61 or higher on the Reading section or instructor permission based on alternative test.

REL 101 3 3 0 0 0
SURVEY OF WORLD RELIGIONS CORE
Study of major living religions, their commonalities and contrasts. How these religions enrich human lives.

RRO 101 2 2 0 0 0
RAILCAR SAFETY VOC/TECH
A fundamental course in the safe and proper operation around railroad operations on industrial property. Topics include work area hazards, railcar equipment components, safety equipment, proper and safe loading and unloading of railcars and federal (FRA) regulations.

SDV 108 1 1 0 0 0
THE COLLEGE EXPERIENCE OPEN
This course is designed to introduce students to college resources, services and expectations and to assist them in gaining maximum benefit from their college experience.

SDV 115 2 2 0 0 0
STUDY STRATEGIES OPEN
Provides students with study/reading strategies for independent learning and academic success. An examination of college policies and procedures is also included.

SDV 130 11 0 0 0
CAREER EXPLORATION GENERAL
Provides help in choosing a career goal. Emphasis will be placed on how to access labor market information, interests, abilities and values, explore options and make decisions that will lead to career satisfaction and success.

SDV 153 2 2 0 0 0
PRE-EMPLOYMENT STRATEGIES VOC/TECH
Covers all aspects of professional job placement procedures including career goal setting, developing prospective employer lists, resume writing, job application forms, employment tests, personal appearance, interviewing and follow-up.

SDV 157 11 0 0 0
BUILDING A PROFESSIONAL PORTFOLIO VOC/TECH
This course provides the writing and research skills necessary to compile a professional portfolio highlighting abilities, experiences and accomplishments. The portfolio will include a resume, reference letters, certificates, sample demonstrations of work performance, documentation that shows knowledge of subject area and other applicable items.

SDV 164 2 1 2 0 0
ELECTRONIC PORTFOLIO DEV GENERAL
Students will receive instruction in creating an electronic portfolio of work. Emphasis will be on selecting artifacts, reflecting on choices, formatting and displaying a web-based portfolio for career or college transfer.

SDV 165 11 0 0 0
TRANSFER PLANNING GENERAL
Provides students with the information, resources and tools necessary to plan a successful transition from a community college to a four-year college or university. Special emphasis will be placed on developing individual transfer plans.

SDV 171 11 0 0 0
LIBRARY INSTRUCTION GENERAL
This course will provide students with practical knowledge of information literacy skills; specifically the process of conducting information research for academic assignments and lifelong learning. Students will learn and be able to articulate and perform the research process.

VISIT US ONLINE: www.DMACC.edu 173
### COURSE DESCRIPTIONS

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credits</th>
<th>Type</th>
<th>Prerequisites/Notes</th>
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</thead>
<tbody>
<tr>
<td>SDV 172</td>
<td>INTERNET RESEARCH TECHNIQUES</td>
<td>1</td>
<td>GENERAL</td>
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<tr>
<td></td>
<td>Students will learn how information resources are organized on the internet, and how to reference, search and evaluate information on particular topics. Prerequisite: Basic computer literacy.</td>
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<tr>
<td>SDV 197</td>
<td>SAC EXPERIENCE</td>
<td>1</td>
<td>GENERAL</td>
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<td>Students will have experiential opportunities for leadership skill development through participation in the Student Activities Council as an at-large member. Open only to SAC members. This course can be repeated each semester student is a member of SAC, to a maximum of 6 semesters. (P/F) Corequisite: Must be an appointed member of a DMACC campus Student Activities Council</td>
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<tr>
<td>SDV 212</td>
<td>COOP CAREER SEMINAR</td>
<td>1</td>
<td>VOC/TECH</td>
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<td>Examination of topics relevant to the internship experience, sharing workplace problems encountered and the solutions found to those problems. This course may be repeated for a maximum of 4 credits. Corequisite: SDV 222, 223, 224, 225, 226 or 227</td>
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<tr>
<td>SDV 222</td>
<td>COOP CAREER EXPERIENCE I</td>
<td>1</td>
<td>VOC/TECH</td>
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<td></td>
<td>Supervised work experience with employers that enables students to apply their skills and knowledge. Work experiences will relate to the students' academic programs of study. (P/F) Prerequisite: SDV 212</td>
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<tr>
<td>SDV 223</td>
<td>COOP CAREER EXPERIENCE II</td>
<td>2</td>
<td>VOC/TECH</td>
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<td>Practical experience through on-the-job training in an approved business setting. Tasks will be consistent with student's career objectives, skills and knowledge. (P/F) Prerequisite: SDV 212</td>
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<tr>
<td>SDV 244</td>
<td>COOP CAREER EXPERIENCE I</td>
<td>3</td>
<td>VOC/TECH</td>
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<tr>
<td></td>
<td>Students will learn how information resources are organized on the internet, and how to reference, search and evaluate information on particular topics. Prerequisite: Basic computer literacy</td>
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<tr>
<td>SDV 225</td>
<td>GROUP DYNAMICS</td>
<td>3</td>
<td>GENERAL</td>
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<td></td>
<td>The study of group behavior including leadership, interaction, team-building, decision-making, cooperation, cohesion, power, problem-solving, and conflict between and within groups.</td>
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<tr>
<td>SDV 226</td>
<td>ISSUES IN AGING</td>
<td>2</td>
<td>OPEN</td>
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<td>This course will address the issues of aging: in transition, explore the conflicts of change, and examine the needs and strategies to best meet the demands and challenges presented to this fast-growing segment of our population.</td>
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<tr>
<td>SDV 227</td>
<td>INTERPERSONAL &amp; SMALL GRP COMM</td>
<td>3</td>
<td>CORE</td>
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<td></td>
<td>An introduction to interpersonal and group communication theories and their application in relationship development, conflict resolution, group problem-solving, and group presentations.</td>
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<tr>
<td>SDV 232</td>
<td>INTRODUCTION TO SOCIOLOGY</td>
<td>3</td>
<td>CORE</td>
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<td></td>
<td>The study of human interaction, groups and society. Topics included are culture, socialization, organizations, deviance, inequality, institutions, health, population, ecology, social change and research methods.</td>
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<tr>
<td>SDV 235</td>
<td>JUVENILE DELINQUENCY</td>
<td>3</td>
<td>GENERAL</td>
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<tr>
<td></td>
<td>An investigation of juvenile delinquency in American society, sociological theories and research of delinquency, impact of groups, juvenile justice system and prevention programs. Prerequisite: SOC 110 or instructor permission</td>
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<tr>
<td>SDV 240</td>
<td>CRIMINOLOGY</td>
<td>3</td>
<td>GENERAL</td>
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<td>The nature and extent of crime and criminality, society's efforts to control crime, theories of causation, emphasis on social processes, systems and methods of correction. Prerequisite: SOC 110 or instructor permission</td>
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<tr>
<td>SDV 242</td>
<td>ENVIRONMENTAL SOCIOLOGY</td>
<td>3</td>
<td>GENERAL</td>
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<td>This course examines the relationships between society and the natural environment. It focuses upon human understanding of nature, the use and abuse of natural resources and what can be done to improve the relationship. It is recommended that students take SOC 110 prior to this course.</td>
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<tr>
<td>SDV 250</td>
<td>MINORITY GROUP RELATIONS</td>
<td>3</td>
<td>CORE</td>
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<td>This course is the study of the relations between racial, ethnic and gender categories. Focus on stereotypes, prejudices, discrimination and exploitation. Major emphasis upon group relations in the United States. Prerequisite: SOC 110 is recommended.</td>
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<tr>
<td>SDV 255</td>
<td>SOCIAL GERONTOLOGY/APPL</td>
<td>4</td>
<td>OPEN</td>
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<td></td>
<td>The influence of social factors on the aging process and experience including family, gender, ethnicity, retirement, living environments, and health/elder care services. Students will complete an older adult service learning project.</td>
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<tr>
<td>SDV 260</td>
<td>SURVEY DRAFTING</td>
<td>3</td>
<td>VOC/TECH</td>
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<td>This course includes the application of manual and computer-aided techniques in survey drafting. The topics include plat maps, topography, field notebook sketches and property descriptions. Third-party software will be utilized. Prerequisite: CET 178</td>
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<tr>
<td>SDV 270</td>
<td>SAFETY IN THE WORK ENVIRONMENT</td>
<td>1</td>
<td>VOC/TECH</td>
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<td>This course will address the various safety hazards and causes of illness and injury in the work environment. Topics will include acceptable safety conduct and positive safety attitudes and practices; basic first aid techniques; proper traffic control procedures; avoiding the effects of temperature extremes; recognizing and avoiding hazardous materials; potential hazards from poisonous plants and animals and ergonomic principles to prevent musculoskeletal disorders.</td>
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<tr>
<td>SRV 110</td>
<td>US PUBLIC LANDS SURVEY SYSTEM</td>
<td>3</td>
<td>VOC/TECH</td>
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<td>This course will develop a working knowledge of the United States Public Land Survey System and its application in Iowa surveying. Topics will include: the general plan; methods of survey; the system of rectangular surveys; monumentation; restoration of lost or obliterated corners; resurveys; special surveys and special instructions; field notes and plats. Prerequisite: CET 119, CET 169</td>
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<tr>
<td>SRV 215</td>
<td>INTRO TO LAND INFORMATION SYS</td>
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<td>VOC/TECH</td>
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<td>An introduction to Land Information System and Land Records Research. Mapping information analysis compiled from country records for environmental protection, land uses, land values and the responsibility of the professional surveyor to a land information system will be covered. An introduction to GIS software will be included.</td>
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<tr>
<td>SRV 220</td>
<td>BOUNDARY SURVEYING</td>
<td>3</td>
<td>VOC/TECH</td>
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<td>This course will develop a working knowledge of land boundary surveying including liability, professional stature, original surveys, apportionment procedures and description writing. Field work in both urban and rural settings will be performed. Prerequisite: SRV 120, CET 119 and CET 169</td>
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<tr>
<td>SRV 225</td>
<td>SURVEYING ETHICS</td>
<td>2</td>
<td>VOC/TECH</td>
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<td></td>
<td>Introduction to ethical and business issues involved in the surveying profession. Case studies and problems included.</td>
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COURSES DESCRIPTIONS

SRV 230 3 3 0 0 0 LAND SUBDIVISION VO/C/TECH
Covers different phases of the land development process: study financing of the project, site analysis, design of preliminary plat and a final plat. Prerequisite: CET 119 and CET 169

SRV 235 5 4 2 0 0 INTRODUCTION TO GEOGEOY VO/C/TECH
This course deals with concepts of astronomy and geodesy that are relevant to the practice of surveying. They include theory, field techniques, coordinate systems, gravity, and leveling; control surveys and networks; GPS surveying, an introduction to the figure of the Earth and its geometric and physical characteristics; solar and Polaris observation and computations involved in the determination of true north. Prerequisite: SRV 120, CET 119 and CET 169

SRV 240 4 4 0 0 0 BOUNDARY LAW VO/C/TECH
This is an in-depth course dealing with the determination and location of property boundaries and recognized landlines. Laws and administrative rules relating to land surveying in the State of Iowa will be addressed. The role of the surveyor in issuing opinions regarding boundary locations and in resolving boundary disputes will be examined. Prerequisite: CET 119 and CET 169

SRV 305 5 0 0 0 20 FIELD COOP VO/C/TECH
Practical experience through on-the-job training in an approved surveying setting. Tasks will be consistent with students’ career objectives, skills and knowledge. Prerequisite/Corequisite: Successful completion of 32 credit hours of SRV program courses and/or department approval

SUR 130 2 2 0 0 0 INTRO TO SURGICAL TECHNOLOGY VO/C/TECH
Introduces the field of surgical technology. History of the profession, roles and responsibilities will be covered. Hospital administration, standards of conduct, working as a team, ethical issues, safety, laws, scope of practice and the physical environment will be reviewed. This course includes one operating room shadowing experience.

SUR 140 5 3 4 0 0 FUNDAMENTALS OF SURGICAL TECH VO/C/TECH
This course teaches the skills needed to work as a surgical technologist. It includes instruction on sterilization as well as sterile technique, surgical case management and instrumentation. This course also discusses diagnostic procedures including specimen care.

SUR 150 2 2 0 0 0 MED TERMINOLOGY FOR SURG TECH VO/C/TECH
This course is designed to help students gain the knowledge needed to communicate clearly with other healthcare team members. Instruction starts with a foundation of word parts, prefixes, suffixes and word roots, and then builds words by combining the parts. The course also covers terms not built from word parts and includes specialized vocabulary for surgical technologists. Exercises are included to help recognize and define new medical terms.

SUR 200 5 3 4 0 0 SURG PROCEDURES/TECHNIQUES I VO/C/TECH
This course teaches the student about the aspects of common surgical procedures. Minor and major cases in a variety of surgery areas will be discussed including: general, obstetric and gynecological, ophthalmic, orthopedic, reconstructive, urologic and orthopedic.

SUR 202 3 3 0 0 0 SURG PROCEDURES/TECHNIQUES II VO/C/TECH
This class will compare and discuss surgical procedures and emergency cases. The specialties areas that will be included are oral and maxillofacial, cardiothoracic, peripheral vascular and neurosurgery. This course will prepare the student to discuss the relevant anatomy and physiology, preoperative preparations, instrumentation and equipment used in the specialties areas of oral and maxillofacial, cardiothoracic, peripheral vascular and neurosurgery. Prerequisite: SUR 200 with a grade of “C” or better

SUR 420 2 2 0 0 0 PHARMACOLOGY FOR THE SURG TECH VO/C/TECH
In this course the student will review basic math skills. The student will learn a framework of pharmacological principles to apply in surgical situations. Commonly used medications by category, with frequent descriptions of actual surgical applications, will be presented. The student will also learn basic anesthetic concepts to function more effectively as a surgical team member.

SUR 810 5 0 0 1 5 0 CLINICAL PRACTICUM II VO/C/TECH
This course will further enhance the skills needed to work independently as a surgical technologist. This includes instruction with a preceptor on preoperative, intraoperative and postoperative surgical case management at the clinical facility. The student should feel comfortable assisting in the circulating role and independently scrubbing for a variety of surgical cases. Prerequisites: SUR 200 and SUR 805 with a grade of “C” or better

TEL 111 3 3 0 0 0 BASIC ELECTRICITY/ELECTRONIC I VO/C/TECH
For beginners to solve basic electronic problems involving voltage, resistance and power. Relationship between electricity and magnetism, operation of resistors, meters, switches, relays, capacitors, inductors and batteries will be explained.

TEL 112 2 2 0 0 0 BASIC ELECTRICITY/ELECTRONIC II VO/C/TECH
For those who have an understanding of volts, ohms, amps and series parallel circuits. Explain the difference between alternating current (AC) and direct current (DC), the AC generator; analyze simple AC currents, transformer action, series and parallel resonant circuits. May also be taken as a study course.

TEL 116 2 2 0 0 0 ELECTRONIC CIRCUITS VO/C/TECH
Basic and operational amplifiers, power supplies, oscillators, pulse circuits and modulation. Must have prior knowledge in electricity/electronics. Prerequisite: TEL 112

TEL 118 3 3 0 0 0 SEMICONDUCTOR DEVICES VO/C/TECH
N-type, P-type, PN junctions, diodes, zener diode, transistors, bipolar characteristics, field effect, thyristors, integrated circuits and optoelectronics. Should have knowledge in AC/DC electronics.

TEL 210 3 3 0 0 0 TELECOMMUNICATIONS I VO/C/TECH
Provides an overview of telecommunications and covers basic telecommunications circuits, equipment & diagnostic procedures for lines, basic key systems, and an understanding of the telecommunications industry. Corequisite: TEL 213

TEL 215 3 0 6 0 0 INTRODUCTION TO TELEPHONY LAB VO/C/TECH
Provides hands-on experience in installation and fault isolation of telephone lines and basic key systems, basic cable counts, cable splicing and cable termination procedures. Corequisite: TEL 210

TEL 220 4 4 0 0 0 TELECOMMUNICATIONS II VO/C/TECH
Covers basic telecommunications equipment used by businesses and its connection to a switched public or private network. Covered subjects include electronic key systems, private branch exchange systems (PBX), trunks and associated equipment. Analog and digital communications and associated equipment are also covered. Experienced individuals may contact the instructor to gain admittance to this course. Corequisite: TEL 223

TEL 222 4 0 8 0 0 TELECOM OUTSIDE PLANT VO/C/TECH
Provides hands-on training in the telecommunications outside plant field. Topics covered include: basic installation and repair troubleshooting, fiber and copper cable repair and troubleshooting, outside plant cable splicing and design, ladder safety, working aloft and pole climbing. Prerequisite: TEL 210. Corequisite: TEL 220

TEL 223 3 0 6 0 0 TELECOM TRANSPORT LAB VO/C/TECH
Provides hands-on training on a private branch exchange system, user data modification for a digital central office switch, digital key systems, and associated equipment. Experience includes wiring, soldering, call routing, fault isolation, and modular splicing. Prerequisite: TEL 210, TEL 215. Corequisite: TEL 220

TEL 230 4 4 0 0 0 ADVANCED TOPICS IN TELECOM VO/C/TECH
Covers advanced digital switching principles and practices, system configuration, and diagnostic procedures common to digital central office switching systems and private branch exchanges. Advanced topics using high-speed broadband links and fiber optics are introduced. Experienced individuals may contact the instructor to gain admittance to this course. Prerequisite: TEL 220, 223. Corequisite: TEL 233

TEL 232 3 3 0 0 0 DATA COMMUNICATIONS VO/C/TECH
An introduction to data communications and data networks. Includes digital communications, analog communications and interfaces. Networks including both LAN and WAN operation and common test techniques. Prerequisite: TEL 210, 215

TEL 233 3 0 6 0 0 ADVANCED TOPICS IN TELECOM LAB VO/C/TECH
Provides hands-on learning experience with broadband fiber circuits, digital multiplex systems and high-speed transport devices. Focus on system configuration and diagnostics are also presented. Prerequisite: TEL 220, 223. Corequisite: TEL 230

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COURSE DESCRIPTIONS

TEL 240  33000
TELECOMMUNICATIONS MANAGEMENT VOC/TECH
Telecom management course covering new and emerging technology and implementation in the business environment. Discussion covering technology management and leveraging of telecom assets. Prerequisite: TEL 230, 233. Corequisite: TEL 243

TEL 243  30600
INTERNETWORKING LAB VOC/TECH
Provides hands-on lab experience configuring and troubleshooting networks. Internetworking is the primary focus using various software tools and test equipment to connect and analyze differing networks. Voice over IP, ATM, xDSL, ISDN and other technologies are used and implemented in the lab setting. Prerequisite: TEL 230, 233. Corequisite: TEL 240

VIN 101  43200
INTRO TO STARTING A VINEYARD VOC/TECH
Introduction to selecting and preparing successful vineyard sites, economics of vineyards, and cultural practices for non-bearing vineyards.

VIN 102  43200
INTRO TO BEARING VINEYARDS VOC/TECH
Introduction to management of bearing vineyards: cultural practices, fertility and economics.

VIN 103  43200
INTRO TO VINEYARD PEST MGMT VOC/TECH
Introduction to pests that affect vineyards, pest management and proper use of control methods. This course will also involve preparation for students to take the test for commercial pesticide applicator's license.

VIN 149  43200
GRAPE AND WINE SCIENCE VOC/TECH
This course introduces the grape and wine industry worldwide and in the Midwest. It investigates grape origin, vine growth habit, wine production and winery quality control.

VIN 150  33000
INTRODUCTION TO WINE VOC/TECH
This course presents introductory information on wine appreciation, focusing on sensory analysis, production, classification and culture of wine.

VIN 151  43200
CELLAR TECH. AND OPERATIONS VOC/TECH
This course presents winery technology and provides practical instruction on grape processing equipment. Prerequisite: VIN 150 or industry experience

VIN 152  43200
INTRO TO WINE SCIENCE VOC/TECH
This course examines the basic scientific principles of wine production and provides instruction of wine laboratory analysis equipment. Prerequisite: VIN 150 or industry experience

VIN 189  21200
WINE MICROBIOLOGY VOC/TECH
This course examines beneficial and spoilage unicellular organisms specifically related to wine production. Prerequisite: BIO 187

VIN 190  43200
WINE SCIENCE VOC/TECH
This course focuses on principles of enology and wine laboratory analysis focusing on the most common evaluation methods utilized in a successful wine quality control program. Prerequisite: CHEM 122 and VIN 149

VIN 201  43200
VITICULTURAL SCIENCE VOC/TECH
Advanced concepts in the science of viticulture. Prerequisite: VIN 149 or instructor permission

VIN 202  43200
VINE HEALTH VOC/TECH
Advanced concepts in the identification, life cycles, management and control of vineyard pests. Prerequisite: VIN 201 or instructor permission

VIN 203  43200
VINEYARD ESTABLISHMENT VOC/TECH
Advanced concepts in vineyard establishment. Prerequisite: VIN 201 or instructor permission

VIN 204  43200
ENGINEERING IN AGRICULTURE VOC/TECH
A study of engineering principles that relate to agricultural industries. Prerequisite: Instructor permission

VIN 248  10200
HORT/BOTANY LAB VOC/TECH
Laboratory exercises designed to introduce the principles of botany. Corequisite: AGH 221 or instructor permission

VIN 249  43200
PLANT PHYSIOLOGY VOC/TECH
A study of how plants function and interact with the environment. Corequisite: AGH 221 or instructor permission

VIN 275  43200
SENSORY SCIENCE VOC/TECH
This course presents applied information on wine sensory analysis required to recognize personal sensory biases and evaluate wine types and styles critically and scientifically. Prerequisite: MAT 157

VIN 290  43200
COMMERCIAL WINE PRODUCTION VOC/TECH
This course presents applied enology and industry topics related to the production of commercial grade wines.

VIN 920  30000
FIELD EXPERIENCE VOC/TECH
This course provides viticulture work experience. The student will maintain employment at a commercial winery working in the production of wine and gain experience as a cellar worker, laboratory technician or logistic coordinator. Prerequisite: VIN 150 or instructor permission

VIN 932  30000
INTERNSHIP IN ENOLOGY VOC/TECH
This course provides enological work experience. The student will maintain employment at a commercial winery working in the production of wine and gain experience as a cellar worker, laboratory technician or logistic coordinator. Prerequisite: VIN 150 or instructor permission

WEL 111  33000
WELDING BLUEPRINT READING VOC/TECH
The basic skills needed to read shop drawings (including welding symbols) will be learned. Prerequisite: MAT 172

WEL 120  20400
OXIDE FUEL WELDING/CUTTING VOC/TECH
Skills will be developed in oxy-acetylene welding, cutting and repair. Safety is emphasized.

WEL 150  20400
ARC WELDING I (SMAW) VOC/TECH
Skills will be developed in welding beads, buildup surfacing, and fillet weldments in the horizontal position. Safety is emphasized. Prerequisite: WEL 166

WEL 166  20400
ARC WELDING III (SMAW) VOC/TECH
Skills will be developed in welding corner fillet joints, weld arounds, and sheet metal weldments in the flat positions. Safety is emphasized. Prerequisite: WEL 166

WEL 167  30600
ARC WELDING IV (SMAW) VOC/TECH
Skills will be developed in welding beads, buildup surfacing, and fillet weldments in the horizontal position. Safety is emphasized. Prerequisite: WEL 166

WEL 168  30600
ARC WELDING V (SMAW) VOC/TECH
Skills will be developed in welding fillet joints in the vertical downhilt and vertical uphill position. Safety is emphasized. Prerequisite: WEL 167

WEL 169  20400
ARC WELDING VI (SMAW) VOC/TECH
Skills will be developed in welding and testing vee groove joints in the flat and horizontal positions. Safety is emphasized. Prerequisite: WEL 169

WEL 177  30600
ARC WELDING II (SMAW) VOC/TECH
Skills will be developed in welding and testing in the vertical and overhead positions. Safety is emphasized. Prerequisite: WEL 176

WEL 181  20400
GAS METAL ARC WELDING VOC/TECH
Practical application in the use of the gas metal arc welding process including submerged arc and flux cored arc. Safety is emphasized.

WEL 190  20400
GAS TUNGSTEN ARC WELDING VOC/TECH
A course to develop skills in the gas tungsten arc welding process using mild steel, stainless steel and aluminum. Safety is emphasized. Prerequisite: WEL 120

WEL 303  30600
PIPE WELDING/SMAW VOC/TECH
Welding practice and testing on open groove plate weldments in the 1G, 2G, 3G and 4G positions, and, as time permits, on pipe weldments in the 2G, 5G and 6G positions. Safety is emphasized. Prerequisite: WEL 177

WTT 103  33000
INTRODUCTION TO WIND ENERGY VOC/TECH
To provide the student with knowledge of common terminology and general information related to the wind industry. The student will become familiar with the various types of turbines, the technology, sectors, jobs and organizations as well as an outlook on the future of the wind industry.
COURSE DESCRIPTIONS

WTT 114 5 4 2 0 0
FIELD TRAINING & PROJECT OPER  VOC/TECH
Course includes information corresponding to industry practices and standards of safe operations of a wind power generating facility, including the techniques of proper ascent and descent of wind turbine generators, day-to-day operations and the infrastructure that is in place as part of a typical power plant. Course also includes tools and equipment used and teamwork, as it applies to operations and maintenance of the facility. Prerequisite: WTT 103

WTT 133 3 2 2 0 0
WIND TURBINE MECHANICAL SYS  VOC/TECH
Course includes the nomenclature and terms common to metals and metallurgy. Instruction will also include gears and gear failure analysis techniques, gear structures, inspection of gears and analysis of lubricants. Course includes discussion of the application of lubricants and proper procedures for acquiring lubricant samples and the effects of friction, gear damage and wear. Prerequisite: WTT 103

WTT 216 3 2 2 0 0
POWER GENERATION/TRANSMISSION  VOC/TECH
This course will serve as an introduction to the generation of electrical power with a wind turbine generator, moving that power through a local transmission system to a substation where a customer will purchase the generated power. This course will cover all aspects of working with components of a high-voltage transmission system. Prerequisite: ELT 303, ELT 134

WTT 223 3 2 2 0 0
AIRFOILS AND COMPOSITE REPAIR  VOC/TECH
This course will enable the student to more efficiently inspect, repair and move/transport wind turbine blades. Students will understand common industry terms used in the manufacture and repair of wind turbine blades. Prerequisite: WTT 103

WTT 225 4 2 4 0 0
DATA ACQUISITION & ASSESSMENT  VOC/TECH
This course will give students information on how wind resource data is collected and analyzed for use in the development of wind-powered generation of electricity. Students will also learn how to access power production of individual wind turbines. Prerequisite: WTT 103, ELT 303, ELT 134, ELT 141, ELT 119, WTT 216, WTT 245

WTT 245 4 2 4 0 0
ELECTRICAL PRACTICAL APP  VOC/TECH
This course will provide students with practical wiring exercises involving installation, wiring and troubleshooting of electrical devices and equipment used in, but not specific to, wind turbine control systems. Students will study electrical diagrams, design of electrical systems, and electrical safety. Prerequisite: ELT 303, ELT 134, WTT 133

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FACULTY AND STAFF 2009-2010

ABBOTT, MATTHEW A., 2007, Biology. B.A., Grinnell College; Ph.D., Iowa State University
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AGYEMAN, AHMED, 2004, Academic Advisor. B.S., M.Ed., Iowa State University
ALBERTSON, MARCIA, 1974, P.C. Applications. B.A., University of Northern Iowa
AMLING, STACY L., 2006, Spanish. B.A., University of Northern Iowa; M.A., Michigan State University
ANDERSON, ROBERT L., 1974, Hospitality Careers. A.O.S., Culinary Institute of America; Mankato Area Vocational Technical Institute; C.C.E.; Order of the Golden Toque Society
ANDERSON, RON D., 1999, HVAC. A.A., Arapahoe Community College; B.S., University of Colorado-Denver
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ATAL, HADI, 2002, Academic Advisor. B.A., Grinnell College
AUKES, SHIELA R., 2006, Counselor. B.A., St. Cloud State University; M.S.W., University of St. Thomas
AUSTIN, JEREMY C., 2007, Academic Advisor. B.A., M.S., Pittsburg State University
BADGER, BARBARA J., 2006, Financial Aid Advisor. B.A., University of Northern Iowa
BAILEY, GREG A., 2000, Industrial Electromechanical Technology Assoc., National Institute of Technology
BAKARI, ROSENNIA, 2008, Psychology. B.S., Cornell University; M.S., State University of New York; Ph.D., University of Northern Colorado
BAKER-BRODERSEN, BETH M., 2005, English/Academic Achievement Center. B.A., Northwest Missouri State University; M.A., Iowa State University
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BELL, DEBORAH P., 1987, Dental Assistant. A.A., Des Moines Area Community College
BELL III, LEONARD, 2005, Education Outreach Advisor. B.L.S., Iowa State University
BELTRAME, DAVE, 2004, Graphic Technologies. Diploma, Des Moines Area Community College; RIT, PIA/GATF
BERGIN, TIMOTHY M., 1996, Biology. B.S., Kansas State University; M.S., University of Nebraska-Lincoln; Ph.D., Bowling Green State University
BERGLUND, ERIC J., 2000, Coordinator, Network Systems. A.A.S., DeVry Institute of Technology
BETHARDS, MELODY L., 2002, Nursing. A.D.N, Des Moines Area Community College; B.S.N., Grand View College; M.S.N., Drake University
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BITTNER, SHARON G., 2000, Director, Program Development. B.S., Indiana State University; M.A., Drake University
BLAIR, MICHAEL L., 2005, Graphic Design. A.A.S., Des Moines Area Community College
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BOOTH, CONNIE, 1982, Nursing. B.S.N., Creighton University; M.S.N., University of Nebraska Medical Center
BOUDJARANE, KHALED, 2005, Physics. B.Sc., M.Sc., University of Quebec, Trois-Rivieres; Ph.D., Laval University, Quebec, Canada
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BRAND, SONJA K., 1995, Academic Achievement Center. B.S., Northwest Missouri State University
BREN D, JOSEPH, 1998, Bldg Trades.
BRINKLEY, LISA K., 2008, Academic Advisor. A.A., Muscatine Community College; B.A., Mount St. Clare College; M.S., Iowa State University
BROCKELBY, JOHN W., 1987, Business Administration. B.S., University of Nebraska at Omaha; M.A., Webster University
BROWN, GEORGIA K., 1971, Academic Achievement Center. B.A., Simpson College; M.S.E., Drake University
BROWN, LORI M., 2005, Dental Hygiene. B.S., University of Iowa
BROWN, REBECCA F., 2002, Business Administration. B.S., Meredith College; M.B.A., Bellevue University
BRUNUSS, CYNTHIA C., 1987, Nursing. B.A., Central College; M.Ed., East Carolina University; B.S.N., Grand View College; M.S.N., Drake University; CNM/ARNP
BRUMBACK, LISA P., 2005, Academic Achievement Center. B.A., Albright College
BURKHALT, BRYAN A., 2001, Director, Electronic Crime Institute. B.S., M.S., Iowa State University
BURNS, JERALD L., 2004, Automotive Technology. A.A.S., Des Moines Area Community College
BUSH, KRISTINE L., 2008, Nursing. B.S.N., Central Missouri State University; M.S.N., Drake University
BUTIN, PATRICIA, 1992, Coordinator, Veterans/Scholarships. A.A., Des Moines Area Community College; B.A., Drake University
CALLIN, JEFREY B., 1988, Automotive Technology.
CAMPBELL, KAREN J., 1999, Medical Laboratory Technology. B.A., M.A.T., Drake University
CAREY, PHILIP J., 2004, Hospitality Careers. A.S., Des Moines Area Community College; B.S., Upper Iowa University
CARLSON, LISA L., 2007, Coordinator, District Student Support Systems. B.A., University of Northern Iowa; M.S.E., Drake University
CARPENTER, CHRISTINA M., 2004, Counselor. A.A., State Fair Community College; B.S., M.S., Central Missouri State University; Kansas State University
CARPENTER, HOWARD R., 2008, Director, Program Development. B.S.B.A., M.A., Central Missouri State University
CARRICO, TRAVIS L., 2007, Mortuary Science. A.A.S., Cincinnati College of Mortuary Science; B.A., William Penn University
CARROLL, JOHN W., 2003, Title I Corrections. B.A., Loras College; M.A., University of Northern Iowa
CERFOGLI, FRANK M., 2007, Veterinary Technology. B.A., University of Northern Iowa; D.V.M., Iowa State University
CHACKO, SANDRA J., 1980, Nursing. R.N., Iowa Lutheran Hospital School of Nursing; B.S.N., M.A., University of Iowa; Ph.D., Iowa State University
CHERRY, MICHAEL R., 2000, Safety/Fire Science. A.A., Des Moines Area Community College; B.A., Simpson College
CHOPARD, LOIS, 1987, Academic Advisor. B.A., University of Northern Iowa
CHRISTENSEN, KATHY R., 2008, Instructional Assistant. B.A., Buena Vista University
CHRISTMAN, RICK L., 1989, English. B.A., University of Wisconsin-Madison; M.A., Mankato State University; D.A., Drake University
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How to Apply
Any current or prospective DMACC student who is registering for at least 6 credit hours and has a verifiable GPA of at least 2.0 is eligible to apply for a scholarship. The application is available online from approximately January 15 through the April 1 deadline at www.dmacc.edu/foundation. Students who do not have access to the internet may request a paper application by calling the Foundation Office at 515-965-7105.
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For more information, call the Scholarship Office at (515) 964-6278.

Reasons to Support the DMACC Foundation:
- DMACC is an essential part of the community—we are of, by and for the residents of the local area—help us and you help your neighbors and yourself.
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- DMACC emphasizes a mission to support student success.
Contact Us

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www.DMACC.edu

EMAIL:
Admissions: admissions@dmacc.edu
Financial Aid: finaid@dmacc.edu

PHONE:
In the Des Moines/Ankeny area call: 964-6200
Or call any campus toll-free: 1-877-TO-DMACC

Information About DMACC Campuses

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