2012

Catalog 2012-13

DMACC

DES MOINES AREA COMMUNITY COLLEGE

COURSE CATALOG

2012–2013

877-863-6222 | www.DMACC.edu

DMACC
DES MOINES AREA COMMUNITY COLLEGE
Life's Calling™

FAQs

FREQUENTLY ASKED QUESTIONS

Refer to the Index or Table of Contents section(s) of this catalog.

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?
Academic 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 Services/ Career Center

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?
Transferring Credit to DMACC

Can I finish my high school diploma at DMACC or get a GED?
Adult Basic Education, ABE/HSE/ESL

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

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.

PROGRAMS AVAILABLE 2012–13

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

ARTS AND SCIENCES AND PREPROFESSIONAL EMPHASIS

Arts & Sciences/Liberal Arts ..... AA/AS ..... All

Preprofessional Emphasis—Programs available at selected campuses

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

Associate in General Studies ..... AGS ..... All

VOCATIONAL AND PARAPROFESSIONAL PROGRAMS

PROGRAM	AWARD	CAMPUS
ASEP–General Motors	AAS	A
ASSET–Ford	AAS	A
Accounting & Bookkeeping	Diploma	B,U
Accounting Certificate I	Certificate	A*,B,N*,U
Accounting Certificate II	Certificate	A*,B,U
Accounting Income Tax Preparer	Certificate	A,B,U
Accounting Information Systems	AS	A*,B,U
Accounting Paraprofessional	AS	A,B,C,N*,U
Accounting Payroll	Certificate	A,B,C,U
Accounting Specialist	AAS	B,U
Administrative Assistant	AAS	A,B,C,U
Adult Services	Certificate	A
Advanced Manufacturing Technology	AAS	A
Advanced Web Developer	Certificate	A
Aging Services Management	AS	A
Agribusiness	AAS	A
Agribusiness–Agronomy	Certificate	A
Agribusiness–Animal Science	Certificate	A
Agribusiness–Farm Management	Certificate	A
Agribusiness–Sales/Service	Certificate	A
Agribusiness–Sustainable Agriculture	Certificate	A
Airbrush Art	Certificate	A
Architectural Millwork	Diploma, Certificate	A
Architectural Technologies	AAS, Diploma	A
Auto Collision Technology	AAS, Diploma	A
Auto Mechanics Technology	AAS	A,U*
Auto Chassis & Power Train	Diploma	A
Auto Engines & Tune-Up	Diploma	A
Auto Maintenance & Light Repair Technology	Diploma	A*,U
Basic Visual Communications	Certificate	A
Biomass Operations Technology	Certificate	A
Biotechnology	AS, Certificate	A
Building Maintenance	Certificate	A
Building Trades	Diploma	A
Business Administration	AA, AS	A,B,C,N,U,W
Business Information Systems	AAS	A,B*,C*,U,W*
CAP–Chrysler	AAS	A
Caterpillar Technology	AAS	A
Chemical Dependency Counseling	Certificate	A
Civil Engineering Technology	AAS	B
CNC Operator	Certificate	A
Commercial Horticulture	AAS	A
Greenhouse Production	Certificate	A
Landscape Design	Certificate	A
Turf Maintenance	Certificate	A
Computer-Aided Design Technology	AAS, Diploma	A
Computer Applications	Certificate	A,B,U
Computer Languages	Certificate	A,U*
Corel Painter	Certificate	A
Criminal Justice	AAS or AA	A,B*,N*,U*
Culinary Arts	AAS, Diploma	A
Data Entry I	Certificate	A,B,C,N,U
Database Specialist	Certificate	A,W
Dental Assistant	Diploma	A
Dental Hygiene	AAS	A
Diemaking *(See Tool & Diemaking)*	Diploma	A
Diesel Technology	AAS, Diploma	A
Dietary Manager	Certificate	A
Digital Forensic Investigation	Certificate	A
Digital Illustration	Certificate	A
Digital Publishing	Certificate	A
Early Childhood Education	AS, Diploma, Cert.	A,U*,W*
Electrical Construction Trades	Diploma	N
Electronics, Robotics & Automation	AAS	A
Electronics Systems Servicing Technology	AAS	A
Emergency Med Tech	Certificate	A
Enology	Certificate	A
Environmental Science	AA	A,B,U
Entrepreneurship	Diploma, Certificate	A,N*,U
Fashion	Certificate	A
Fashion/Design	AAS, Diploma	A
Fire Science Technology	AS	A,U*
Fire Specialist	Certificate	A, U*
Fitness and Sports Management	AS	B
Fluid Power Technology	AAS, Diploma	A
Gerontology Specialist	Certificate	A
Graphic Design	AAS	A
Graphic Sales & Customer Service	Certificate	A
Graphic Technologies	AAS	A
Greenhouse Production	Certificate	A
Health Information Technology	AAS	A,*W
Heating, AC, Refrigeration Technology	AAS, Diploma	A

PROGRAMS AVAILABLE 2012–13

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*** Selected courses in this program are offered at this campus**
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AAS = Associate in Applied Science degree AGS = Associate in General Studies degree

Hospitality Business	Diploma	A
Hotel & Restaurant Management	AAS	A
Human Resource Management	Certificate	A

PROGRAM	AWARD	CAMPUS
Human Services	AS	A,N*,U
InDesign	Certificate	A
Industrial Electro-Mechanical Technology	AAS	A,B*,C*
Informatics	Certificate	U
Information Processing Support	Certificate	A,B,C,U
Information Technology Network Admin.	AAS	A,B*,C*,U*,W*
Interactive Media for Graphic Design	Certificate	A
Interior Design Consultant	Certificate	A
Interpretation & Translation	AS	U
Interpretation & Translation, Business	Certificate	U
Interpretation & Translation, Education	Certificate	U
Interpretation & Translation, Healthcare	Certificate	U
Interpretation & Translation, Human Services	Certificate	U
Interpretation & Translation, Judiciary	Certificate	U
Landscape Design	Certificate	A
Legal Assistant	AS, Certificate	U
Long-Term Care Administrator	Certificate	A
Long-Term Care Administrator–Practicum	Certificate	A
Machinist Technology *(see Tool & Diemaking)*	Diploma	A
Maintenance *(Diesel Technology)*	Certificate	A
Management	AA, AAS, Certificate	A,N,B*,U*
Management Information Systems	AS	A*,U
Marketing	AA, AAS	A
Medical Assistant	Diploma	A
Medical Insurance/Coding	Certificate	A
Medical Laboratory Technology	AAS	A
Medical Office Specialist *(see Secretarial Careers)*	AAS, Diploma	A
Medical Transcriptionist	Certificate	A,B*,C*,U*
Microcomputers	Certificate	A,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
Nursing–Practical	Diploma	A,B,C,N
Office Assistant	Diploma	A,B,C,N*,U
Office Specialist	Certificate	A,B,C,N*,U
Optometric/Ophthalmic Technician	Diploma	A

PROGRAM	AWARD	CAMPUS
Paramedic Specialist	AAS, Certificate	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:		
Administrative Assistant	AAS	A,B,C,U
Medical Office Specialist	AAS, Diploma	A
Office Assistant	Diploma	A,B,C,N*,U
Office Specialist	Certificate	A,B,C,N*,U
Supervision	Certificate	A,B,N,U
Surgical Technology	Diploma	U
Telecommunications Technology	AAS	W
Tool & Diemaking	AAS	A
Turf Maintenance	Certificate	A
Veterinary Technology	AAS	A
Visual Communications	Diploma	A
Viticulture	Certificate	A
Wastewater Treatment Technology	Certificate	A
Water & Wastewater Treatment Technology	Diploma	A
Water Environmental Technology	AAS	A
Water Treatment Technology	Certificate	A
Web Developer	Diploma, Certificate	A
Web Development	AAS	A
Welding	Diploma, Certificate	A,N
Welding–Advanced Arc	Certificate	A,N
Welding–Blueprint Reading	Certificate	A,N
Welding–Gas Metal Arc	Certificate	A,N
Welding–Gas Tungsten Arc	Certificate	A,N
Welding–Oxyacetylene	Certificate	A,N
Welding–Pipewelding	Certificate	A,N
Welding–Shielded Metal Arc	Certificate	A,N
Wine Service	Certificate	A

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WELCOME TO DES MOINES AREA COMMUNITY COLLEGE

This is an exciting time for Des Moines Area Community College—a time of growth, a time of commitment, a time when we're being recognized as one of the premier colleges in Iowa. And that's good for DMACC students. We've launched a new Honors Program, upgraded facilities, hired more advisors, and as you will see in this Catalog, we've continued to add new programs that lead to high-wage, high-demand careers.

Throughout our 46-year history, DMACC has remained focused on helping students succeed. We are now in the midst of a 10-year plan to meet the three objectives we call our **First Goals**. They are:

FIRST in quality, by making sure our students are the most successful

FIRST in service, by making a DMACC education accessible to all students in our district

FIRST in affordability, by making DMACC the best value for the dollars you invest in your future

What this means is that we're continuing to put students first. It means intensifying our already-strong focus on providing students with the tools they need to thrive in life during and after DMACC—whether they transfer to a four-year school or go directly into the workforce.

Last year we served more than 75,000 credit and noncredit students at DMACC, each with their own needs and aspirations, each with unique contributions to bring to the college experience. We're pleased that you are considering DMACC, and we look forward to using our resources to help you achieve your career and personal goals.

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 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 on 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 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; the Carroll Campus was initiated in 1979. The Urban Campus began operation in Des Moines in 1972, then moved into a new facility at Seventh and Laurel in 1980. The first classes in Newton were held in the Fall of 1993 as a result of the cooperative effort of the 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 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 co-curricular activities that promote the 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 engage in or allow discrimination covered by law. This includes harassment based on race, color, national origin, creed, religion, gender, sexual orientation, gender identity, age, disability and genetic information. Veteran status in educational programs, activities, employment practices or admission procedures is also included to the extent covered by law. Individuals who believe they have been discriminated against may file a complaint through the College Discrimination Complaint Procedure. Complaint forms may be obtained from the Human Resources Department, the campus Provost's office or the EEO/AA Officer. Persons who wish additional information or assistance may contact the EEO/AA Officer, Human Resources, Bldg. 1, 515-964-6479 or contact the Section 504/ADA Coordinator at 515-964-6857.

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, Gainful Employment information, 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 the DMACC website under DMACC Consumer Information. 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.

PROFILE OF DMACC

ANKENY CAMPUS
2006 S. Ankeny Blvd.., Ankeny, IA 50023-3993
515-964-6200 or toll-free in Iowa: 800-362-2127
FAX: 515-964-6391

BOONE CAMPUS
1125 Hancock Dr., Boone, IA 50036-5399
515-432-7203 or toll-free in Iowa: 800-362-2127
FAX: 515-433-5033

CARROLL CAMPUS
906 N. Grant Rd., Carroll, IA 51401-2525
712-792-1755 or toll-free in Iowa: 800-622-3334
FAX: 712-792-8500

NEWTON CAMPUS
600 N. 2nd Ave. W., Newton, IA 50208-3049
641-791-3622 or toll-free in Iowa: 800-362-2127
FAX: 641-791-1728

URBAN CAMPUS
1100 7th St., Des Moines, IA 50314-2597
515-244-4226 or toll-free in Iowa: 800-362-2127
FAX: 515-248-7216

WEST CAMPUS
5959 Grand Ave., West Des Moines, IA 50266-5302
515-633-2407 or toll-free in Iowa: 800-362-2127
FAX: 515-633-2409

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 9-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.

Newton Campus is located at 600 N. 2nd Ave. West in Newton and began operation in the Fall of 1993.

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

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 from 7:30 a.m. to 4:30 p.m. on Friday, and from 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 three 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 Success Center at **www.dmacc.edu/success/**. The telephone number for the Success Center is 515-287-8700.

PROFILE OF DMACC

DMACC AT PERRY VANKIRK CAREER ACADEMY

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, information technology, health careers, automotive technology and welding. In the afternoon and at night, a wide variety of college-credit liberal arts courses are offered.

DMACC CAREER ACADEMY, HUNZIKER CENTER

The $5 million DMACC Career Academy, Hunziker Center opened its doors on 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 Hunziker Center telephone number 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 — DISTRICT

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

ANKENY CAMPUS

2006 S. Ankeny Blvd.., Ankeny, IA 50023-3993
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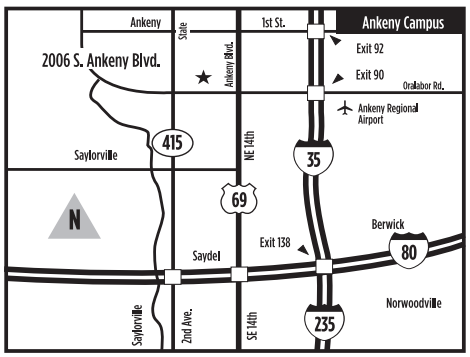
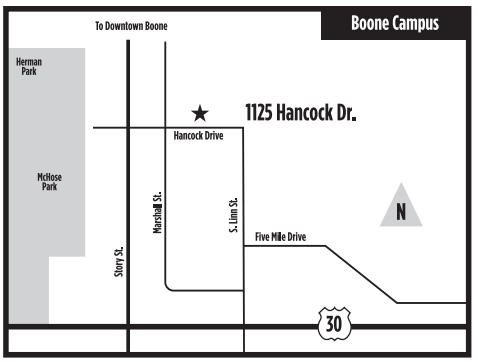
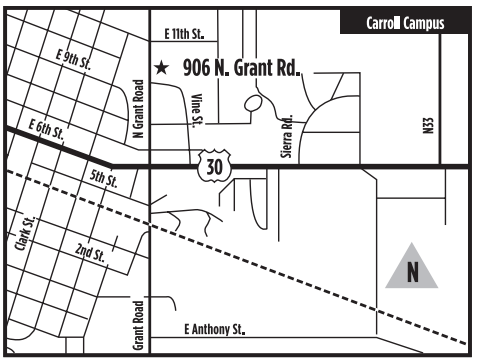
FAX: 515-633-2409

CAMPUS MAPS & DIRECTORIES







Ankeny Campus

515-964-6200 or 1-800-362-2127
Campus Code #1 and the Ext#

	Bldg. No.	Rm. No.	Ext No.
Academic Achievement	6	19	365-7004
Academic Records	1		6341
Accidents–Auto (On Campus)	12	01	6500
Address Changes	1	16	6565
Admissions	1	16	965-7337
Advising	1	16	6200
Alumni Association	22		965-7331
Athletics/Recreation	5	26	6333
Bookstore	5	34	6302
Campus Clubs	5	26	6359/6376
Campus Events	1	06	6200
Campus Nurse	24	103	6352
Career Planning/Counseling	1	06	6200
Career Resource Center	1	06	6474
Child Development Center	09	21	6238
Disability Services	06	10B	6850
Drops/Adds	1	16	6800
Emergencies	1	06	6200/6500
Foundation Office	22		6229
Information Center	1	06	6200
Financial Aid	1	16	6282
Graduation	1	16	6647/6507/7354
Health Insurance/Services	5	09	6352
International Advising	1	33	6471
Library	6	03	6317
Lost & Found	5	27	6359
Program Changes	1	16	6495
Registration	1		6800
Scholarships	1	16	965-7179
Security	12	01	6500
Student Accounts	1	18	6446
Student Employment Assistance	1	16	6215
Testing Center	6	24	6595
Transcripts	1	16	6800
Transfer Evaluation	1	16	6647/6507
Tutoring Services	6	20	965-7004
Veterans Services	1	16	6278

Boone Campus

515-432-7203 or 1-800-362-2127
Campus Code #3

	Rm. No.	Ext No.
Academic Achievement	102	5096
Address Changes	120	5027
Advising	120A/129B	5024/5030/ 5051/5048
Assessment Center	102	5096
Athletics/Recreation	133/120A	5050
Bookstore	101	5034
Campus Clubs	120	5078
Campus Events	120	5026
Career Planning/Counseling	120A/120B	5030
Disability Services	120A/120B	5024
Drops/Adds	120	5026/7203
Emergencies	120	5027
Financial Aid	120	5022/5023
Graduation	120	5026
Information	120	5027
International Students	120A/120B	5030
Library	135	5040
Program Changes	120A/120B	5024/5030
Security	105C	5027
Student Accounts	120C/120D	5022
Student Employment Assistance		5025
Student Housing	120	5078
Transcripts	120	5026
Tutoring Services	102	5096

Veterans Services: Refer all inquiries to 964-6278 or 800-362-2127 Ext.#6278, Ankeny Campus

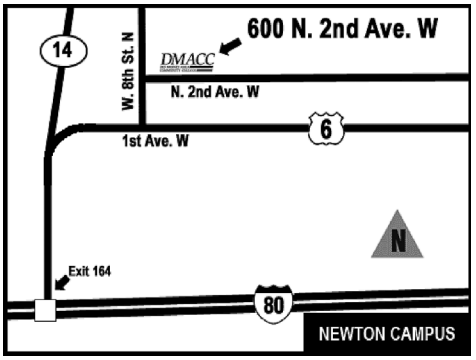
Carroll Campus

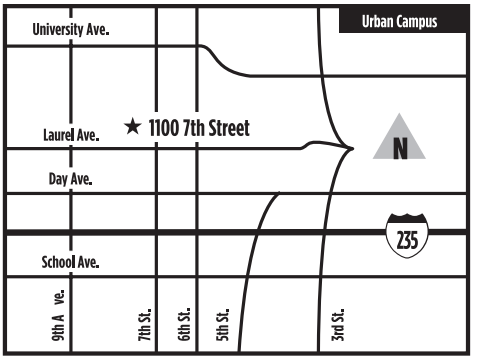
712-792-1755 or 1-800-362-2127
Campus Code #4

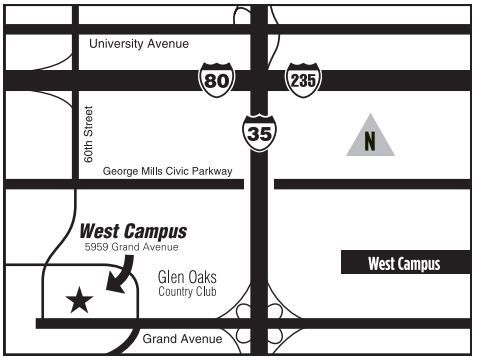
	Rm. No.	Ext No
Academic Achievement	157	8307
Accidents–Auto (On Campus)	Business Office	1755
Address Changes	167	8331/8332/8501
Advising	167	8331/8332
Assessment Center	167	8303
Bookstore	Bookstore	8310
Campus Clubs	167	8331/8332
Campus Events	167	8331/8332
Career Planning/Counseling	104	8501
Disability Services	167	8331/8332
Drops/Adds	167	8331/8332
Emergencies	Business Office	1755
Financial Aid	Business Office	8305
Graduation	167	8331/8332
Health Insurance	167	8331/8332
International Students	167	8331/8332
Iowa New Choices	111	8304
Library	156	8316/8317
Lost & Found	Business Office	1755
Program Changes	167	8331/8332
Security	Maintenance	8312
Student Accounts	Business Office	8305
Student Employment Assistance	167	8331/8332
Transcripts	167	8331/8332
Transfer Evaluation	167	8331/8332
Tutoring Services	157	8307

Veterans Services: Refer all inquiries to 964-6278 or 800-362-2127 Ext.#6278, Ankeny Campus

CAMPUS MAPS & DIRECTORIES







Newton Campus

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

	Rm. No.	Ext No.
Academic Achievement	107	1730
Accidents–Auto (on Campus)	Info Desk	3622/1720
Address Changes	Info Desk	3622
Advising	Advisors	1722/1723
Assessment Center	Info Desk	3622
Bookstore	105	1770
Campus Clubs	Advisors	1722/1723
Campus Events	Info Desk	3622
Career Academy	Bldg. 2	5165
Career Planning	Info Desk	1722/1723
Disability Services	106	1720/1721
Drops/Adds	Info Desk	3622
Emergencies	Info Desk	3622
Financial Aid	106	1725
Graduation	Advisors	1722/1723
Health Insurance/Services	Info Desk	3622
International Students	Info Desk	3622
Lost & Found	Info Desk	3622
Program Changes	Advisors	1722/1723
Security		1795
Student Accounts	106	1725
Student Employment Assistance		1722/1723
Transcripts	Info Desk	3622
Transfer Evaluation	Advisors	1722/1723
Tutoring Services	107	1730

Veterans Services: Refer all inquiries to
964-6278 or 800-362-2127 Ext.# 6278, Ankeny Campus

Urban Campus

515-244-4226 or 1-800-362-2127
Campus Code #2

	Rm. No.	Ext No.
Academic Achievement	204	248-7523
Address Changes	101	248-4226
Advising	101E	248-4226
Assessment/Testing Ctr	207A	248-7218
Bookstore	134A	248-7212
Campus Clubs	101G	248-7515
Campus Events	101	248-4226
Career Planning/Counseling	101E	697-7791
Disability Services	101D	697-7727
Drops/Adds	101	248-4226
Emergencies	101	248-4226
Financial Aid	101A	248-7522
Graduation	101	248-4226
Health Insurance/Services	101A	248-4226
Information	101	248-4226
International Students	101E	248-4226
Library	122C	248-7210
Lost & Found	101	248-4226
Program Changes	101	248-4226
Security	101	248-7200
Student Accounts	101A	248-7242
Transcripts	101	248-4226
Transfer Evaluation	101	248-4226
Tutoring Services	101	697-7798

Veterans Services: Refer all inquiries to
964-6278 or 800-362-2127 Ext.# 6278, Ankeny Campus

West Campus

515-633-2407 or 1-800-362-2127
Campus Code #6

	Rm. No.	Ext No.
Provost's Office	112W	633-2439
Associate Dean	107W	633-2442
Assessment Center	213W	633-2426
Provost's Secretary	110W	633-2406
Academic Achievement	213W	633-2472
Advising	107W	633-2405/2412
Bookstore	115W	633-2423
Campus Tours	109W	633-2408
Disability Services	109W	633-2408
Drops/Adds	109W	633-2408
Financial Aid	110W	633-2411
Registration/Records	109W	633-2408
Resource Center (Library)	213W	633-2426
Student Accounts	110W	633-2411

Veterans Services: Refer all inquiries to
964-6278 or 800-362-2127 Ext.# 6278, Ankeny Campus

2012–2013 ACADEMIC CALENDAR

August 2012

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

September 2012

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30						

October 2012

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

November 2012

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	

December 2012

S	M	T	W	T	F	S
						1
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9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

January 2013

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

February 2013

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28		

March 2013

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

April 2013

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

May 2013

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

June 2013

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30						

July 2013

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

Fall Semester 2012

Aug. 23, 2012	Fall Semester Begins (first day of classes)
Sept. 1–3, 2012	Labor Day, No Classes, Offices Closed
Oct. 1, 2012	Application Deadline for Graduation–Fall
Oct. 17, 2012	Mid-term
Oct. 19, 2012	All Staff In-Service, No Classes, Offices Closed
Nov. 2, 2012	*Last Day to Withdraw from Full Semester Classes
Nov. 22–25, 2012	Thanksgiving Holiday, No Classes, Offices Closed
Dec. 13, 2012	Last Day of Fall Semester
Dec. 22, 2012–Jan. 1, 2013	Holidays, Offices Closed

Spring Semester 2013

Jan. 7, 2013	Spring Semester Begins (first day of classes)
Jan. 21, 2013	Martin Luther King Jr. Holiday, Offices Closed
Feb. 1, 2013	Application Deadline for Graduation–Spring/Summer
Feb. 15, 2013	All Staff In-Service, No Classes, Offices Closed
Mar. 4, 2013	Mid-term
Mar. 18–24, 2013	Spring Break, No Classes, Offices Open
Mar. 26, 2013	*Last Day to Withdraw from Regular Semester Classes
May 2, 2013	Last Day of Spring Semester
May 1, 2013	7:00 p.m. Ankeny/Urban/ Newton/West Graduation
May 3, 2013	10:00 a.m. Boone Graduation
May 6, 2013	6:00 p.m. Carroll Graduation

Summer Term 2013

May 21, 2013	Summer Term Begins (first day of classes)
May 25–27, 2013	Memorial Day Holiday, No Classes, Offices Closed
July 4, 2013	Holiday, No Classes, Offices Closed
Aug. 1, 2013	Last Day of Summer term

*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**
- **Midsemester**
- **Last day to withdraw from classes***
- **Holiday-College Closed**
- **Semester Ends**
- **Spring Break**
- **All Staff In-Service, No Classes, Offices Closed**

ADMISSIONS

Des Moines Area Community College is dedicated to helping individuals 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, preenrollment 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

Current and Returning Students: If you have submitted an admission application in the past three years, you do not need to reapply for admission. Contact the DMACC Admissions Office about your status.

1. Complete an admission application and submit it online or at the 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. Submit ACT or COMPASS exam results to DMACC (Fulltime or ESL only). Assessment guidelines can be found under the heading, Guidelines for Required Assessment.
3. If you are not a resident of Iowa, provide proof of secondary education completion by submitting official high school or GED transcripts.
4. If you have attended another college or university, submit official transcripts to meet any additional admission or program requirements.
5. Complete any program prerequisites for your specific program.

Admission procedures and entry requirements vary by program. Check our website for specific program details, **www.dmacc.edu/programs.asp**. Please note: Some programs accept a limited number of students. If you have met all of the program requirements and the program is full, you will be placed on a waiting list until a seat becomes available.

Once your application is received, it will be processed as soon as possible. You should receive communication from us **within five working days** informing you of your admission status.

GUIDELINES FOR REQUIRED ASSESSMENT

Assessment scores used for admission purposes must be five (5) years old or less from the test date.

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 term. 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 Assessments in math, reading and writing are given to students who do not qualify under options 2 or 3.
2. Submit ACT Scores. ACT scores must be mailed to the Admissions Office.
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 coursework such as psychology, sociology, economics, etc., and/or vocational technical coursework requiring comparable reading skills.
   - Math—grade of C or higher in a college-level mathematics course.
   - If college experience is older than five years, students are strongly encouraged to take the COMPASS test.

Assessment 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 below 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 first language is not English. All full-time and part-time students whose first 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 coursework. Placement in ESL courses, college preparatory courses or college-level courses is based on minimum scores. Please contact the DMACC Testing Center at the campus nearest you for more information.

STUDENTS WITH DISABILITIES

Students taking the COMPASS test who are in need of an accommodation due to a disability may apply and provide documentation to the Disability Services Coordinator at 515-964-6850. This request must be submitted prior to the test, and the student should make accommodation arrangements with both the Testing Center and the Disability Services Coordinator in advance of the test date. Accommodations are generally granted for access to assistive technology for the COMPASS test.

ADMISSIONS

ADMISSION OF HIGH SCHOOL STUDENTS

DMACC offers the opportunity for high school students to enroll in credit courses. **Juniors and Seniors:** Complete steps 1 and 2 below if enrolling as a part-time student. Complete steps 1, 2 and 3 if enrolling as a full-time student. **Freshmen and Sophomores and Home-Schooled Students:** Complete steps 1, 2, 3 and 4. Freshmen and sophomores are limited to **no more than** two credit courses each semester and must remain part-time students.

1. Submit a completed Application for Admission.
2. Submit completed DMACC Permission Form for High School Student.
3. Complete COMPASS testing or submit ACT scores. Course placement is 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 to the extent 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. Submit a completed application for admission.
2. Approval of the school counselor or principal and approval of the parent or guardian on the DMACC High School Permission Form.
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. Student must provide documentation that they have been identified as talented and gifted.
5. Any specific course or program prerequisite must be met.
6. Students are limited to no more than two credit courses per semester.
7. Students must meet with the appropriate instructor, program chair, or dean for an evaluation of readiness for each desired course.

ADMISSION OF GUEST STUDENTS (SUMMER ONLY)

Guest Students: Students whose primary enrollment is at another college and are enrolling at DMACC for Summer term only:

1. Submit a completed DMACC Application for Admission. Always apply as Liberal Arts, no matter what your major.
2. Provide proof of enrollment, such as an acceptance letter or valid student ID from primary school of attendance.

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 30 days prior to the first day of the semester.

Semester	Deadline
Fall 2012	July 20, 2012
Spring 2013	December 7, 2012

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 July 20, 2012, DMACC will process the application for the Spring semester.

Deadlines for International Transfer Students

Semester	Deadline
Fall 2012	July 27, 2012
Spring 2013	December 14, 2012

INTERNATIONAL STUDENT APPLICANTS

New Full-Time International Student Applicants

New full-time international students need to obtain 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.

All international students must report to DMACC by 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 and accompanied by a letter or bank statement dated within six months of the application. Financial support of approximately $18,034 (USD) is needed per year. (In addition, a refundable deposit of $4,000 (USD) is required. Refer to #7 for more deposit details.) 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. 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 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 coursework 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. A refundable deposit of $4,000 (USD) is required for new or transfer F-1 students and must be paid before course registration. It may not be used to pay educational expenses until the last semester the student is enrolled.
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 transfers 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. Students should designate "Liberal Arts" as their major program of study.

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

RESIDENCY

Requirements for proof of Iowa residency are established for community colleges by the Iowa Department of Education. **Please note that a student cannot be a resident of two states at the same time. If your home is in another state and you are living in Iowa for the purpose of attending school, you are a resident of your home state and not a resident of Iowa.**

You will be considered a resident of Iowa for DMACC tuition and fee purposes if the information you provide DMACC during the admission process demonstrates that you are:

1. Permanently domiciled in Iowa (not living in Iowa primarily for educational purposes); and
2. Have resided here for a period of not less than 90 days prior to the first day of the semester in which you will be attending; and
3. You provide supporting documentation issued/dated on or before the appropriate date on the timeline below to prove your Iowa residency. (See list of acceptable documents under Application Process below.)

In-state tuition is also given to residents of Iowa Sister States. These include:

- Hebei Province, China
- Shijiazhuang, China
- Saint Etienne, France
- Provincia di Catanzaro, Italy
- Veneto Region, Italy
- Kōfu, Japan
- Yamanashi Prefecture, Japan
- Terengganu, Malaysia
- Naucalpan, Mexico
- Yucatan, Mexico
- Stavropol Krai, Russia
- Taiwan (the entire country/state)
- Cherkasy Oblast, Ukraine

Proof must be given showing that the student is actually from the Sister State.

If you are classified as an out-of-state student, it is your responsibility to submit the appropriate documents needed to prove Iowa residency. In-state residency status is not automatically changed after a certain period of time.

RESIDENCY APPLICATION TIMELINES

To meet the 90-day requirement, **you must provide documentation** proving that you began residing in Iowa on or before the following dates:

Semester	Deadline
Fall 2012	On or before May 25, 2012
Spring 2013	On or before Oct. 9, 2012
Summer 2013	On or before Feb. 20, 2013

Residency status cannot be reclassified once the semester begins.

To apply for reclassification from nonresident to resident status, follow these steps:

- Complete the DMACC Request for Residency Status form.
- Submit supporting, dated documentation demonstrating residency in Iowa to any DMACC campus **prior to the first day of the semester** for which you are registering. To show that your purpose for living in Iowa is for more than attending school and to show that you have been a resident of Iowa for 90 days or more, you must provide one of the items listed in A through E below as evidence. The second document you provide may be from A through G.
  a. Iowa driver's license
  b. Iowa vehicle registration form
  c. Iowa state income tax return, signed and dated
  d. Iowa voter registration card
  e. Proof of Iowa Homestead credit on property taxes
  f. Written and *notarized* documentation from an employer that you have been employed in Iowa for a minimum of 90 days prior to the start of the semester

g. Other indicators of Iowa residency, such as apartment lease dated and signed by both you and the manager, utility bills, bank statements, etc., dated and showing your Iowa address.

If you are a lawful permanent resident (LPR) of the United States or an approved refugee, you may apply for residency status. International students who are in the United States on any type of student visa (e.g., an F-1 or F-2 visa) *cannot* establish in-state residency while studying in this country.

For more information, see our website at **www.dmacc.edu/admissions/residency.asp** or contact the Registrar's office at 515-964-6320.

READMISSION

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; 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 that have earned credit from an institution whose transcript is in a language other than English must have the transcript evaluated and translated by an approved credential evaluation service. Contact the DMACC Credentials staff for more information.

A maximum of 43 semester credit hours of transfer credit is applicable toward associate degree requirements. The total grade point average 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 coursework 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 coursework 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, clicking the "Visit DMACC" link at **www.dmacc.edu** or by calling the individual campus at:

Ankeny Campus	515-965-7100
Boone Campus	515-432-5025
Carroll Campus	712-792-8501
Newton Campus	641-791-3622
Urban Campus	515-248-4226
West Campus	515-633-2408

REGISTRATION

REGISTRATION PROCEDURES

New, Full-Time Students

All new full-time students (12 credits or more Fall and Spring semesters 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 requires all first-time, full-time students seeking an AA–Liberal Arts, AGS or AS–Liberal Arts degree to take SDV 108, The College Experience, during their first semester. Students taking all classes online may take the online SDV 108. The goal of the course is to connect students with DMACC faculty/staff, the designated program of study, resources, and other students, all while teaching healthy lifestyles, leadership, ethics, basic study skills, diversity and college procedures. Blackboard skills and other DMACC technology skills are taught. SDV 108, The College Experience, gives students the knowledge and support they need to succeed at DMACC and beyond.

Exceptions to the requirement of SDV 108 (ES 4503):

- Reverse transfer students with 24 credits, a GPA of 2.0 and above, and an official transcript from the previous institution
- Students who register for, and complete, the DMACC Honors (HON 101) orientation course
- Students who meet the definition of Guest Student (ES 4100)

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 visiting **www.dmacc.edu/discover.asp**.

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 on the DMACC website and in the Credit Schedule of classes can be completed in person, by telephone or via the Internet.

Continuing Students

These students may register in person, by telephone or the Internet in accordance with the times and dates published on the DMACC website and in the Credit Schedule of classes.

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 or the Internet. Students are not permitted to attend a course unless officially registered for the course.

DROPPING A COURSE

Students may drop a full-semester 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 semesters and Summer terms 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. Students may view the drop deadlines on the academic calendar at **www.dmacc.edu**. Courses dropped during the first week of the semester will not appear on 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 the last day 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 or 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 tuition and fees chart on the following page. 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, 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 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 $20 fee 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, which 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.

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.

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.

BILLING POLICY

DMACC students will receive notification of their DMACC bills electronically approximately 4–6 weeks before a semester begins via the students' DMACC email address. Statements may also be viewed at any time by clicking on QuikPay on the DMACC WebInfo system.

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: *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 semester.*

Payment for Noncredit 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 on 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 drafts(s) drawn from your account.

DROP FOR NONPAYMENT

Students will be dropped for nonpayment **the day after the due date**. Students must have made arrangements and/or paid 100% of their bills in order to avoid being dropped.

PAYMENT FOR REGISTRATION AFTER THE DUE DATE

Students who register for classes after the due date for the term will be required to make payment arrangements at the time they register.

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 one or more of these factors:

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 from the student requesting a class drop
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 semester classes only)

First Week of semester	100%
Second Week of semester	100%
After Second Week of semester	No Refund

Important:

1. Refunds for classes other than the normal full-semester 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.
2. Refunds for TV classes are based on the published class/semester dates—NOT the viewing dates.

DMACC reserves the right to change the Refund Schedule at any time.

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

Full- or Part-Time Enrollment (per credit) Resident	$133.00
Full- or Part-Time Enrollment (per credit) Nonresident	$266.00
Audit (per credit) Resident	$133.00
Audit (per credit) Nonresident	$266.00
Career Supplemental Noncredit Courses (per contact hour)	Market Rate
Continuing and General Adult Ed–Local Schools (per contact hour)	Market Rate
Adult High School Diploma—Course Fee	$100.00
Correspondence Course Fee	$100.00
Nonresident tuition is 200% of resident rate.	

FEES

Music Fee (piano/instrumental per course)	Market Rate
Correspondence Course Fee	$15.00/course
TV Course Fee	$30.00/course
Lab Fees for Advanced Technology Center and Computer Application Courses (per course)	Market Rate
International Student Processing Fee	$100.00
GED—Testing/Diploma	$100.00
GED—Instructional Materials Fee	$50.00
NLN Testing (per test)	$100.00
Online Course Fee (per credit hour)	$25.00
Web-Blended Course Fee (per credit hour)	$10.00
Late Registration Fee	$25.00
Re-Registration Fee for Nonpayment	$25.00
Tobacco-Free Violation	$50.00
Background Checks, Certification & Testing & Consumable Supplies (per course)	Market Rate
Deferred Payment Fee	$ 25.00
Returned Check Fee	$30.00

TRANSCRIPT FEES

Regular Request (sent within two business days)	No Charge
Same-Day Service Request	$5.00
FAX Requests	$5.00

TRAFFIC FINES

Parking in Handicapped Stall	$100.00
Illegal Parking	$10.00
Improper Permit Displayed or No Permit Displayed	$10.00
Parking in Unauthorized Area	$25.00
Moving Violation	$50.00
Littering, Reckless Driving, Driving in Unauthorized Area	$50.00

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

FINANCIAL AID

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 students 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 2009–2010 budget, are as follows:

	Iowa Resident	Nonresident
Tuition and Fees	$3,450	$6,900
Books and Supplies	$1,160	$1,160
Room and Board	$5,462	$5,462
Personal/Misc.	$1,922	$1,922
Transportation	$2,320	$2,320
Total	**$14,314**	**$17,744**

Current cost of attendance can be found at **www.DMACC.edu/fin_aid/finstudentexpense.asp**.

FILING REQUEST FOR SPECIAL CONSIDERATION

There are times, after receiving the award notification from the DMACC Student Financial Aid Office, that a student/family may find it difficult to finance their expected contributions due to changes in their financial circumstances. If this is the case, a student/family may file a Request for Special Consideration. If a student/family has new or additional information concerning their financial circumstances, it should be submitted in writing and sent to the attention of the Director of Student Financial Aid, Ankeny Campus. Any supporting documentation should be sent with the Request for Special Consideration.

GAINFUL EMPLOYMENT INFORMATION

Gainful Employment information about DMACC certificates and diplomas may be found at **www.dmacc.edu/gainfulemployment/welcome.asp**.

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.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.gov**.

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 semester.

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 taxes be completed before filing the FAFSA, when possible.
4. Submit the FAFSA online.
5. You can obtain a PIN to electronically sign the form by visiting **www.pin.ed.gov**. 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 his or her PIN, 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 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)

IVTT Grants are available for students enrolled in vocational-technical programs. The Iowa College Student Aid Commission notifies DMACC of award recipients. 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.

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 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

FINANCIAL AID

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.

Miscellaneous Scholarships

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

APPLYING FOR DMACC FOUNDATION SCHOLARSHIPS AND OUTSIDE SCHOLARSHIPS AND GRANTS

DMACC Foundation Scholarships

Each year, the DMACC Foundation receives generous gifts from individuals, corporations and foundations. Fundraising efforts combined with earnings from Foundation investments provide scholarships to hundreds of students annually. These awards are granted through a competitive application process.

Most awards are based on financial need, academic achievement, or both. For a listing of **Foundation scholarship awards available, visit www.dmacc.edu/foundation**.

DMACC Foundation's Scholarship Application Process

By applying through the Foundation online application, eligible applicants could be chosen to receive scholarships from any of our six campuses. The online application is available after February 1 each year at: www.dmacc.edu/foundation. Application and notification deadlines vary. Visit www.dmacc.edu/foundation.

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

Criteria and Conditions:

- 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 are 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 in the semester for which the award is given. Some awards are renewable for the following semesters. If a recipient fails to maintain his or her original enrollment criteria or drops out before the semester ends, he or she may be required to repay the DMACC Foundation.

Outside Scholarships and Grants Websites

FASTWEB: **www.fastweb.com**

CollegeQuest: **www.collegequest.com**

CASHE: **www.cashe.com**

EMPLOYMENT

Federal College Work-Study Program (CWSP)

The College Work-Study Program is for students who are enrolled and show financial need. The College Work-Study Program offers part-time jobs on- and off-campus. Students should contact the DMACC Career Center 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 after-school program or a library. Community Service opportunities are listed in the Career Center on all DMACC campuses.

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.

LOANS

Federal Direct Student Loan Program—Subsidized and Unsubsidized

Subsidized loans are need-based, fixed 6.8 percent interest rate loans available to assist students for educational costs. Students must file a completed Free Application for Federal Student Aid (FAFSA) and be enrolled at least half-time to apply for a loan. The government pays the interest on the subsidized loan during periods of enrollment and the six-month grace period. The student pays all interest after receiving an unsubsidized loan.

Repayment for both loan types begins six months after terminating enrollment or dropping to less than half-time. The maximum annual subsidized/unsubsidized Direct Loan amounts are $3,500 for freshmen and $4,500 for sophomores. Independent students may be eligible to receive additional unsubsidized loans. Entrance and exit counseling are required.

Federal Direct Parent Loans for Undergraduate Students (PLUS)

A PLUS loan is a fixed 6.8 percent interest rate loan that is available to parents of dependent students. Students must be enrolled at least half-time. Parents can borrow the cost of the dependent student's education minus any financial aid the student receives. Parents apply through the DMACC Financial Aid Office.

FINANCIAL AID

ALTERNATIVE LOANS

Alternative low-interest loans are available 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.

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 **www.dlservicer.ed.gov** to complete the Exit Counseling requirement or visit any DMACC campus for Exit Counseling.

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, (VA) and serves as a resource to other DMACC departments and services.

Students who could be eligible for veterans educational benefits through the VA include: 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 VA. 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 VA for benefits. Monthly pay rates are set by Congress and the VA. These vary according to students' benefits categories and are based on credit hour enrollment for each semester. Further details may be obtained at the Office of Student Financial Aid/Veterans Services, Ankeny Campus, 515-964-6284, or 1-800-362-2127, or at **www.dmacc.edu/veterans**.

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) in the 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.

IOWA NEW CHOICES

The Iowa New Choices Program located at the Boone, Carroll and Urban Campuses provides support to single parents who have full or joint custody of minor children, single pregnant women, or low-income Iowans receiving public assistance or preparing to enter the job market.

The support services include academic advising, career assessment and planning, referral services to various community agencies and the promotion of nontraditional occupations. Financial assistance may be provided in the following forms: Bus passes on a first-come, first-served basis; mileage allowance to the Ankeny and Urban Campuses if the student lives outside Polk County; and childcare assistance if not eligible for State block grant. All financial assistance depends on availability of funds. Details may be obtained from the Iowa New Choices Office on the Urban Campus, 515-248-7520.

Similar services are also available at the Boone and Carroll Campuses.

DISLOCATED WORKERS

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

STRIVE

The STRIVE (Selected Training Received in Vocational Education) Program provides vocational education to special needs students from high school. Details may be obtained at **www.dmacc.edu/strive**.

VOCATIONAL REHABILITATION

Through a special agreement with the Iowa Vocational Rehabilitation Services division of the Department of Education, a vocational rehabilitation staff person is assigned to each DMACC campus. Agency services are available to eligible clients. As a part of an individual written plan requiring training to meet a student's vocational goal, financial assistance may be available per Agency guidelines.

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 ACADEMIC PROGRESS STANDARDS

DMACC has two standards for measuring academic progress:

1. The U.S. Department of Education has defined the academic standard measurements the Financial Aid Office must use when determining eligibility for financial aid. The policy must measure both grade point average (GPA) and credit hours earned. Financial aid recipients' academic progress, ES 4300, is described here.
2. DMACC's standard academic policy for all students ES 4650 can be found at the following link: **http://go.dmacc.edu/handbook/polprocedures/Pages/satisfactoryprogress.aspx**.

The FA-SAP standards apply to undergraduate students who wish to establish or maintain financial aid eligibility. These standards apply to a student's entire academic record at Des Moines Area Community College whether or not financial aid was received for prior terms of enrollment.

FINANCIAL AID

General FA-SAP Requirements

The College's records are reviewed at the completion of every semester of enrollment to determine compliance with the SAP policy. There are three components to the SAP policy:

1. Minimum GPA

Students must maintain a cumulative GPA of a 2.0 or higher to remain eligible for financial aid. Academic records are reviewed at the completion of every term of enrollment (Fall, Spring, Summer) to determine FA-SAP.

2. Minimum Pace of Completion

Students must complete course work at a minimum cumulative rate of 67%. Completed course work is defined as any course for which the student receives a passing grade. Academic records are reviewed at the completion of every term of enrollment (Fall, Spring, Summer) to determine FA-SAP.

Use the formula below to determine the pace of completion. The minimum pace requirement is 67%. Completed Credit Hours (all passing grades) divided by Attempted Credit Hours (completed hours, hours enrolled in as of the end of the 14th day [census] of the semester and hours with nonpassing grades or incompletes). For more information or examples, please visit the financial aid website at **http://go.dmacc.edu/fin_aid/Pages/finsatisfactory.aspx** or contact the financial aid office.

Note: Students who completely withdraw or fail all classes during their first term of enrollment will automatically go to Suspension. We encourage students to visit with an academic advisor or counselor and complete an Academic Improvement Plan and submit it to the Financial Aid Satisfactory Academic Appeals Committee for financial aid reinstatement consideration.

3. Maximum Time Frame (Duration of Eligibility)

Federal regulations limit financial aid eligibility to 150% (96 credits for a two-year program) of the published length of the education program, as measured in attempted credit hours. Transfer credit hours (if available) are counted in the calculation of duration of eligibility. When the student has completed 100% of their education program, a letter is mailed to the student and a message is posted to the student's DMACC e-mail account as notification that they are approaching the maximum time frame.

Repeating a Course

The credit hours from a repeated course are counted as attempted hours every time the course is repeated. Once the course is passed, the credit hours are counted as both attempted and completed credit hours. Incompletes are counted as non-passing grades.

Appealing Financial Aid Suspensions

Students who have extenuating circumstances may appeal their financial aid suspension one time. For details on how to appeal, see the College Policy ES 4300 for complete details, **http://go.dmacc.edu/student_services/int/Procedures/ES4300%20Final.pdf**.

Gainful Employment

Students may find gainful employment information about DMACC diplomas and certificates of specialization by visiting **http://go.dmacc.edu/gainfulemployment/pages/welcome.aspx**.

REPEATING CLASSES

Financial Aid will monitor students with excessive retakes. 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 for 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 instructor error was made, the student may obtain a signature from the instructor on an official drop/add form and submit it to the Registrar's office to reenroll.

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QUIT-ATTENDING PROCESS

(Midsemester—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 be 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.

FINANCIAL AID/ACADEMIC INFORMATION

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 or 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 semesters of the promissory note. That was, 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 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 $1,500.* (2010–2011 tuition rate is estimated. 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 Financial Aid Awarded	$2,981
Multiply Percent of Unearned Aid	x .90
Amount of Unearned Aid	**$2,682.90**

Per federal requirements, DMACC and Bill must repay a total of $2,682.90.

DMACC is required to return the lesser of the unearned amount of financial aid, or the amount of total institutional charges multiplied by the percent of unearned aid.

In this example, DMACC would be required to pay back the amount of institutional charges, because it is the lesser amount.

Total Institutional Charges	$1,500.00
Multiply Percent of Unearned Aid	x .90
Amount to be Repaid	**$1,350.00**

Bill is required to return the remaining unearned amount.

Total Unearned Aid	$2,682.90
Subtract Percent of Unearned Aid	-$1,350.00
Amount Bill Must Repay	**$1,332.90**

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 $1,350.00 to Bill's loan. Bill will be required to repay $383.00 to the Federal Direct Student Loan Program, through a repayment plan in accordance with the semesters 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**

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.

ACADEMIC INFORMATION

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.

ACADEMIC RECOGNITION

Dean's/Provost's List: Students who have earned 6 credits in any semester with a 3.50 to 3.99 grade point average are honored by being named to the Dean's/Provost's List. Students are mailed a certificate from their respective Dean or Provost and the names of students on the list are sent to their hometown newspaper for publication.

ACADEMIC INFORMATION

President's List: Students who have earned 6 credits in any semester with a 4.00 grade point average are honored by being named to the President's List. Students are mailed a certificate from the president and the names of students on the President's List are published in their hometown newspaper.

ATTENDANCE AND ENROLLMENT

Students have the primary responsibility for dropping courses or withdrawing from the College if they decide not to attend. The College, however, has administrative procedures whereby students may be dropped.

At the beginning of the semester, instructors are asked to report the names of students who do not attend class. Students are notified and dropped from those courses. If there has been an instructor error and they wish to reenroll in class, they must obtain their instructors' written permission by an established date. Financial aid may be adjusted for students who are administratively dropped.

When approximately one-third of the semester has passed, instructors are asked to report progress grades for all students or those who have quit attending class. All students are notified. Those students who quit attending all courses and have financial aid may be dropped. Students may be required to repay financial aid under the federal repayment formula and will be notified. (For information on the Return of Title IV Funds, please see the Financial Aid section.) The students will have the established options to appeal in writing to the Financial Aid Appeals Committee or the Petition for Policy Waiver Committee. Students are required to meet with the ombudsperson before filing a petition for policy waiver.

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' records with no credit and marks of "N."

Students auditing courses are not required to complete regular assignments or examinations, though attendance is expected. Instructors may exclude students who are auditing 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.

The deadline for changing a course from credit to audit is the same as the deadline for dropping a course. Completion of a Drop/Add form with the instructor's signature is required prior to processing an audit request. If a course has been placed on audit, it cannot be changed back to credit unless the semester has not begun.

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.

GRADE REPORTS

Final grade reports are available on the DMACC web information system approximately one to two weeks after the end of a semester. Progress grade reports are issued prior to midsemester and the deadline for dropping classes. This report notifies students of their grade thus far in the semester. The intent of this notification is to allow students time to 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.

Letter Grade	Numerical Value
A	4.00
A-	3.67
B+	3.33
B	3.00
B-	2.67
C+	2.33
C	2.00
C-	1.67
D+	1.33
D	1.00
D-	.67
F	.00

Other Grade Designations:

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

ACADEMIC INFORMATION

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:

	Semester Hours		Quality Grade	Points
Composition I	3	x	B+ (3.33) =	9.99
Fund. of Oral Communication	3	x	A (4.00) =	12.00
Finite Mathematics	4	x	C- (1.67) =	6.68
Intro to Computer Literacy	3	x	C+ (2.33) =	6.99
Elementary Spanish I	5	x	D+ (1.33) =	6.65
TOTAL	18 semester hours			42.31

Divide 42.31 points by 18 semester hours = 2.350

OTHER CREDIT OPTIONS AND SPECIAL OFFERINGS

Advanced Placement (AP)

This program allows high school students 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 the 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 Test 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 is 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 coursework 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.

ACADEMIC INFORMATION

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 and Boone Campuses. For more information, visit our website at **www.dmacc.edu/testingcenter/cleptesting.asp.**

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 during the 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 term.

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

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 semester and eight hours in total may be earned through independent study.

Students may register for coursework in independent study at any time during the semester.

International Travel/Study Courses

Many DMACC faculty have traveled extensively and 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 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.

Study 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.

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.

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 10-11	PSY 111	D	3.00 E
SP 11-12	PSY 111	A	3.00 I

ACADEMIC INFORMATION

Incomplete and Failing Mark Policies

Students unable to complete some portion of assigned coursework during the regular semester may sign a contract with an instructor approving an "I" (Incomplete) grade. In such cases, the students must complete the course by the midsemester date of the following semester. Incomplete grades are generally not approved by instructors unless there are extenuating circumstances 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 semester. A grade of Incomplete automatically changes to an "F" if the coursework is not satisfactorily completed within the time period specified.

SATISFACTORY ACADEMIC PROGRESS

Des Moines Area Community College has implemented a Scholastic Standards Policy to identify students who have difficulty successfully completing courses and to prescribe practices that may help students succeed.

The following applies to credit enrollment at Des Moines Area Community College.

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

Students who have attempted 1 or more credits with grades of A, A-, B+, B, B-, C+, C, C-, D+, D, D-, F, P, L,T, I or W 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. Satisfactory academic progress is also indicated by completing 67% or more of cumulative attempted credits.

3. Guidelines for placing a student on "ACADEMIC WARNING":

a. A student whose cumulative GPA. falls below 2.00 and/or their completion rate is less than 67% at the end of any semester will be placed on ACADEMIC WARNING for the next semester of enrollment;

b. A student on ACADEMIC WARNING will return to a status of "good academic standing" when his/her cumulative GPA. is raised to 2.00 or higher and/or their completion rate is 67% or greater;

c. A student on ACADEMIC WARNING will continue on warning status if his/her semester GPA. for the semester following his/her placement on probation is 2.00 or higher but the cumulative GPA. remains below 2.00 and or/the cumulative completion rate is less than 67%. This same rule will apply for subsequent semesters of enrollment.

4. Guidelines for placing a student on "CONDITIONAL ENROLLMENT":

a. A student on warning who earns a semester GPA. of less than 2.00 and/or completes less than 67% of the attempted credits will be placed on CONDITIONAL ENROLLMENT for the following semester of enrollment;

b. If the student is registered for the following semester and is placed on CONDITIONAL ENROLLMENT for that semester, he/she will be required to meet with a counselor/advisor no later than the fifth day of the CONDITIONAL ENROLLMENT semester to review his/her course selections and complete and Academic Improvement Plan. Failure to comply will result in canceled classes;

c. If the student placed on CONDITIONAL ENROLLMENT is not yet registered for the next semester, he/she must meet with a counselor/advisor prior to re-enrolling for any credit coursework to complete an Academic Improvement Plan;

d. A student on CONDITIONAL ENROLLMENT who earns a semester GPA. of 2.00 or higher and the completion rate is 67% or higher but whose cumulative GPA. remains below a 2.00 and the cumulative completion rate is less than 67% for the semester will remain on CONDITIONAL ENROLLMENT;

e. A student on CONDITIONAL ENROLLMENT who earns a semester GPA. and a cumulative GPA. of 2.00 or higher and a semester and cumulative completion rate of 67% or higher will be placed in good standing.

5. Guidelines for placing a student on "ACADEMIC DISQUALIFICATION":

a. A student on CONDITIONAL ENROLLMENT who earns a semester GPA. of less than 2.00 and/or a semester completion rate of less than 67% will be placed on ACADEMIC DISQUALIFICATION and will not be allowed to enroll in credit coursework for a period of one semester (or one Summer term plus one semester in the case of a suspension at the end of the Spring semester).

b. Students may appeal an ACADEMIC DISQUALIFICATION status only one time. Subsequent appeals will not be accepted.

6. Guidelines for RE-ENROLLMENT OF ACADEMICALLY DISQUALIFIED students:

a. After non-enrollment for a minimum of one semester, a student on ACADEMIC SUSPENSION may apply for re-enrollment;

b. In all instances, a re-enrolled student will be placed on CONDITIONAL ENROLLMENT;

c. A student seeking re-enrollment must develop an Academic Improvement Plan with a counselor/advisor and obtain the appropriate approval signatures;

d. A student on Academic Suspension for a second or subsequent time may re-enroll only after receiving the written approval of the Director of Student Development.

e. Individual programs of study may impose additional re-enrollment requirements.

7. A student placed on ACADEMIC DISQUALIFICATION may appeal that placement to the Academic Reinstatement Committee no later than FOUR business days (no later than 4:30 pm) prior to the start of the semester of desired enrollment. Appeals received after the deadline date will not be accepted. The appeal must be made in writing, and must at a minimum explain the reasons for the past unsatisfactory academic performance and how the student proposes to improve his/her performance. The Committee may grant or deny the appeal based on the written statement or the committee chairperson may choose to conduct a personal interview with the student or require the student to undergo counseling or academic assessment before making a decision. If the appeal is granted, the committee chairperson is authorized to impose reasonable restrictions on the student's subsequent enrollment.

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 open only 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 students 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 maximum of two-thirds of the program credits may transfer into DMACC (one-third 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, make a request.

Transcripts can be requested online using the DMACC Web Info System. Transcripts can also be requested by downloading the Transcript Request form on the DMACC website and mailing or faxing it to DMACC Academic Records—Transcript Request. Transcript request forms are also available at each campus. The Transcript Request form must be filled out completely, or it may not be processed.

A letter requesting a transcript will also be honored. Transcript request letters must include the student's name, Social Security number or DMACC ID number, telephone number, dates of attendance, the address to where the transcript should be mailed, and the student's signature.

Transcripts are sent within three to four working days after the receipt of the request. During peak periods (end of semester) processing a transcript request will take longer. Transcript requests are processed in the order they are received. There is no fee for transcripts unless special services are requested.

Transcripts mailed directly from DMACC to the receiving institution are marked as official. Copies of transcripts issued directly to students are considered unofficial. Students may view their academic record on the DMACC Web Info System.

Students with an unpaid financial obligation to DMACC will not be issued transcripts and academic records may not be viewed on the DMACC Web Info System.

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 that 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 & GRADUATION

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 coursework, 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 24 semester credit hours, no more than one-eighth of the total number of credits may be substituted. In programs of fewer than 24 semester credit hours, only one course of up to four semester credit hours may be substituted.

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

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 and grade point averages required in any program offering these degrees at Des Moines Area Community College. Specific programs may and often do require additional coursework. Students must refer to the programs of study, which are approved by the State Department of Education and published in this college catalog. For specific programs, see the program section for course and grade point average 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).
4. Complete a minimum of 64 semester credit hours.
5. Include at least 46 semester credit hours of core courses.
   - Communications ..... 9 credits
   - Social & Behavioral Sciences ..... 9 credits
   - Math & Sciences ..... 9 credits
   - Humanities ..... 9 credits
   - Distributed Requirements.....10 credits
   - Diversity Requirement .....*3 credits

   **Courses with a grade of "C" or better, taken to fulfill the Diversity Requirement, may be "double counted" in any of the categories above.*
6. Include at least 18 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 ..... 3 credits
   - Distributed Requirements..... 4 credits
   - Diversity Requirement .....*3 credits

   **Courses with a grade of "C" or better, taken to fulfill the Diversity Requirement, may be "double counted" in any of the categories above.*
6. Include at least 36 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; 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 a minimum of 12 semester credit hours at DMACC after the effective date of the AGS degree (January 1, 1992).
5. Complete a minimum of 64 semester credit hours.

PROGRAM REQUIREMENTS & GRADUATION

6. Complete the following AGS degree requirements:
   - Communications ..... 3 credits
   - Social & Behavioral Science/ Humanities ..... 3 credits
   - Math & Sciences ..... 3 credits
   - Distributed Requirements ..... 4 credits
7. Electives ..... 51 credits

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

Associate in Applied Science Degree (AAS)

Programs of study that lead to an Associate in Applied Science degree include specific courses required for the degree in addition to the AAS degree education requirements listed below. Refer to individual AAS programs of study in this catalog to learn the courses required in addition to these general requirements. Students must complete a specific program in order to receive the AAS degree.

To receive an AAS degree, students must:

1. Maintain a 2.00 grade point average on all work applicable for the AAS 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 AAS degree requirements:

   a. Communications—3 credits

   ENG 105, 106, 108
   COM 703
   ADM 157

   b. Social & Behavioral Sciences/ Humanities—3 credits

   AGB 101
   ANT 100, 105
   ART 101, 184, 186
   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
   FLJ 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
   BIO 138, 156, 732, 733, 734, 104, 112, 113, 135, 186, 164, 168, 173
   BUS 211 or MAT 157, BUS 112
   CHM 105, 122, 132, 165, 175, 263, 273
   ELT 106, 108
   MAT 110, 114, 116, 121, 141
   MAT 157 or BUS 211
   MAT 162, 166, 130, 129, 211, 217, 219, 227, 772, 773
   PHS 152, 166
   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 general requirements:
   - One Communications course
   - One Social & Behavioral Science or Humanities course
   - One Math or Science course

Course options for the above general 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 coursework from an accredited institution of higher education.
   - One Communications Core course
   - One Social & Behavioral Science 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.
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.
5. Complete the final 10 semester credit hours at DMACC (or petition to the Registrar for, and receive, an exception).

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-semester program of study offered through the Continuing Education Department or the Transportation Institute.

PROGRAM REQUIREMENTS & 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 Career 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 to meet the minimum requirement of 32 credits.
- 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 (GED) test administered by the College.

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:

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.

PROGRAM REQUIREMENTS & GRADUATION

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 coursework with a 3.50 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 coursework applicable to their program of study will graduate with program honors.

GRADUATION REQUIREMENTS

Students must satisfy the requirements in effect at 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 semester of enrollment in their program of study, students can no longer use those requirements and must instead 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 Info 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 semester 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 a graduation application for each program.

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

Fall	October 1
Spring	February 1
Summer	February 1
(if students plan to participate in the annual commencement ceremonies)	
Summer	June 1

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 semester to be sent once grades and graduation status are finalized. There is no charge for transcripts unless special services are requested.

HONORS PROGRAM

Starting in the Fall semester, 2012, DMACC will offer an honors program designed for both students preparing to enter the workforce and those continuing to an Honors Program at a four-year college. Students admitted to the program complete 20 credits, including four special seminars. To learn more, go to **www.dmacc.edu/honors**.

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.

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 Programs (APP)

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

STUDENT SERVICES

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 homework help, 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 noncredit studies for academic upgrading, prerequisites or enrichment.

Computer-assisted instruction is also available in many academic areas. Contact the Academic Achievement Center at each campus for additional information.

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 **www.dmacc.edu/alumni**.

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.

ASSESSMENT TESTING

The COMPASS assessment is available for current and prospective students at each of the following DMACC Testing Centers.

Ankeny Campus.....515-964-6595
Boone Campus.....515-433-5096
Carroll Campus.....712-792-1755
Hunziker Center.....515-663-6700
Newton Campus.....641-791-3622
Perry VanKirk Academy.....515-428-8100
Success Center.....515-287-8700
Urban Campus.....515-248-7218
West Campus.....515-633-2408

DMACC offers English as a Second Language (ESL) COMPASS tests for students whose first language is not English. All full-time and part-time students whose first language is not English are required to take and pass 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 Testing Centers at the campus nearest you for more information concerning other tests for program entry requirements, or check the website at **www.dmacc.edu/testingcenter/welcome/asp**.

CAMPUS RECREATION 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 Campus Recreation 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 are eligible to utilize the Campus Recreation Center, as are paid Alumni Association members (with a valid membership card). 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 **www.dmacc.edu/campusrecreation** 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 Association member. 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.

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 5:00 p.m., Friday; and 8:00 a.m. to 3:00 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.

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 an appointment at 515-964-6474.

STUDENT SERVICES

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 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, 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 for 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**.

Online class books are available ONLY at the Ankeny Campus bookstore. MasterCard, VISA, American Express 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, third-party agency, voucher purchases and buyback transactions.

COLLEGE PREPARATORY EDUCATION

College Preparatory Education offers a variety of courses to help students succeed in reaching their educational and career goals. The preparatory reading, writing and math courses are particularly designed for students who need to strengthen their academic skills before enrolling in college-level courses. Although credits from the preparatory reading, writing and math courses do not count toward a degree or diploma, they do count toward semester load and are figured into the GPA.

Other preparatory courses, such as SDV 108, The College Experience; SDV 115, Study Strategies; and SDV 130, Career Exploration, do count toward a degree or diploma as elective credits, and are transferable.

Preadmission chemistry and preadmission biology are also offered as self-paced, noncredit courses for students who did not complete these courses in high school or who need to strengthen their skills before enrolling in a college-level biology or chemistry course. Enrollment in these courses is through the Academic Achievement Centers.

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.

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.

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 **www.dmacc.edu/campusrecreation** and in the Campus Recreation Center in Building 5 on the Ankeny Campus.

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 1-877-TO-DMACC.

STUDENT SERVICES

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.dmacc.edu/library**. 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 that 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 InterLibrary 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 photocopiers, 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 audiovisual 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 research using library resources.

Newton Campus

The Library 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.dmacc.edu/library** at the computer stations located in the Library, or from their home computers. The Library 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 Library. Students may borrow materials housed at any of the other DMACC libraries by processing an Interlibrary Loan request at the Library.

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 Academic Resource Center (ARC) at West Campus will assist students in accessing the resources available through the Ankeny Campus and other participating libraries.

CAREER CENTER

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.collegecentral.com/DMACC. For additional information, visit www.dmacc.edu/careercenter.**

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

STUDENT SERVICES

SERVICES FOR STUDENTS WITH DISABILITIES

DMACC is committed to providing an accessible environment that helps students with disabilities reach their full potential. Support services are available for all students with disabilities to ensure equal access to educational opportunities.

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 or e-mail at **hlcoon@dmacc.edu** or contact 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 Blvd., 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 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 HEALTH

Student Health Services is located on the Ankeny Campus in Building 24, Room 103, with some services extending to other campus locations.

Student Health Services offers students limited medical care, immunizations, emergency treatment and referrals. The Student Health Specialist is available M–F, 8:00 a.m.–4:30 p.m. during student contact days. A Nurse Practitioner is available two days a week for four hours during the Fall and Spring semesters. Information regarding Student Health Insurance is available along with health education and support materials. Contact 515-964-6352 for more information.

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, B.J. McGinn, at 515-433-5046. 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 information, visit our website at **www.dmacc.edu/testingcenter**.

TOBACCO-FREE DMACC

Des Moines Area Community College has been a tobacco-free campus since July 2008. For the purpose of promoting a healthy environment and in accordance with Iowa law, the use of tobacco products is prohibited on the grounds of the College, including all outdoor areas, inside any vehicle located on school grounds and including a perimeter area of ten feet beyond the grounds of the College. Violators may be charged penalties in accordance with Iowa statute.

TUTORING

The Tutoring Office provides peer tutors to assist students who have difficulty with a particular course or courses. Knowledgeable tutors can assist students by reviewing the course material, answering questions and reviewing for exams. Students may be scheduled individually or with a group. For more information, contact the Tutoring Office on the Ankeny Campus at 515-965-7004 or stop by Building 6, Room 20. Students interested in tutoring on the Boone, Carroll, Newton, Urban and West Campuses should contact the Academic Achievement Center at the campus attended. The College cannot guarantee the availability of tutors.

Employment Opportunities

The tutoring offices hire students as peer tutors. Tutors work in a fun, flexible environment and earn extra money while on campus. Contact the Tutoring Office on the Ankeny Campus at 515-965-7004 or the Academic Achievement Center on the Boone, Carroll, Newton, Urban or West Campuses.

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 or 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 ACTIVITIES

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 275; 3 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 (ICCAC) and the National Junior College Athletic Association. The College currently offers women's intercollegiate athletics in basketball, cross country, softball, volleyball and golf, as well as men's intercollegiate athletics in basketball, baseball and golf on the Boone Campus.

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 cocurricular activities complement the academic program. The activities are financed by a portion of the service fee that is charged each semester in addition to regular tuition. Student representatives elected to the Student Activities Council are responsible for assessment and disbursement of these funds.

STUDENT ACTIVITIES COUNCIL

As the primary student body representative, the Student Activities Council 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 among 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 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

Working on a college newspaper staff can benefit students in any program of study. The teamwork required to produce a student publication regularly throughout the semester provides an educational experience that greatly enhances the classroom experience. You can also build your portfolio with work published using professional newsroom standards. DMACC has three independent student publications: *The Banner News* on the Boone Campus; *The Campus Chronicle* on the Ankeny Campus; and *The Urban Vibe* on the Urban Campus. These student news organizations emphasize news, features, entertainment, sports, opinion, photography, graphic design, advertising and new media. No experience is necessary. Training is provided. Opportunities to get involved include enrolling in JOU 125 Newspaper Production (3 credits), freelancing or interning. Work study positions also may be available. For more information, contact the faculty advisor at the Ankeny, Boone or Urban Campuses.

TICKET SALES

Discount 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 discount 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 and Buccaneers hockey in Des Moines. The Carroll Campus offers Adventureland Park, Carroll Community Theatre, Worlds/Oceans of Fun, and Carroll Theater V discounted tickets.

Urban Campus offers discount tickets to Adventureland Park and Carmike Theaters, and discounted bus passes for DART. 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.

BUSINESS RESOURCES/CONTINUING EDUCATION

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 Equivalency Diploma 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.

There are GED Testing Centers on all six campuses and at the Success Center located in south Des Moines.

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 Newton Campus. 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, audiovisual equipment and other conference services.

For further information, please contact the conference center staff at 641-791-1729.

CONTINUING EDUCATION

The Continuing Education division provides a wide range of educational experiences. Activities and courses may begin at any time and do not necessarily coincide with the College's academic calendar. A variety of noncredit vocational and avocational classes, seminars, conferences and workshops are offered at various locations to assist individuals in continued professional and personal development. Topic areas may include business/management, health occupations and personal growth. Specific classes are also designed to meet the continuing education requirements for licensing and recertification of professionals in areas such as child care, insurance, nursing, emergency medical services, cosmetology, real estate, Long-Term care and social work.

The Continuing Education division works with local businesses, service agencies, institutions, organizations and associations to tailor courses or conferences specifically for employees or members. For information, call 515-965-6024 or visit our website at **ce.dmacc.edu**.

DISTANCE LEARNING

Distance learning provides an 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 television courses carried on Mediacom Cable, College Channel 16. For more information, see the Distance Learning home page 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.

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. All full-time and part-time students whose native language is not English may be 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 Testing Center at the campus nearest you for more information.

Call 515-287-8700 or 800-362-2127, ext. 8700, or check our website **www.dmacc.edu/success/**.

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, Financial Aid, Student Records and Admissions. Support is also provided for 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, call their main campus numbers.

TRANSPORTATION INSTITUTE/COMMERCIAL VEHICLE

Commercial Vehicle Operator Program

The Transportation Institute commercial vehicle operator program is one of approximately 80 in the U.S. certified by the Professional Truck Drivers Institute. This 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

In this program, students receive training in all phases of driving, maneuvering and backing a recreational vehicle, and as a result become confident about situations they may encounter in the RV lifestyle. The RV program includes 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: class A, B and C motor homes, fifth-wheel trailers, and travel trailers.

We also have RV training and educational programs aimed at current and prospective drivers to provide the best information and training possible about RVs and the RV lifestyle. DMACC is the second school nationwide to offer this 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 and 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 5 hours 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. Students must be 13 years or older to take this course.

EDUCATIONAL PROGRAMS

Ⓐ = Associate Degree
Ⓓ = Diploma
Ⓒ = Certificate

Accounting
- Ⓐ ..... Accounting Information Systems
- Ⓐ ..... Accounting Paraprofessional
- Ⓐ ..... Accounting Specialist
- Ⓓ ..... Accounting & Bookkeeping
- Ⓒ ..... Accounting Certificate I
- Ⓒ ..... Accounting Certificate II
- Ⓒ ..... Accounting Income Tax Preparer
- Ⓒ ..... Accounting Payroll

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
- Ⓐ ..... ASEP—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
- Ⓒ ..... Sustainable Agriculture

Art
- Ⓐ ..... Graphic Design
- Ⓓ ..... Photography
- Ⓓ ..... Visual Communications
- Ⓒ ..... Air Brush Art
- Ⓒ ..... Basic Visual Communications
- Ⓒ ..... Corel Painter
- Ⓒ ..... Digital Illustration
- Ⓒ ..... InDesign
- Ⓒ ..... Interactive Media for Graphic Design

Biotechnology
- ⒶⒸ ..... Biotechnology
- Ⓐ ..... Environmental Science
- Ⓐ ..... Water Environmental Technology
- Ⓓ ..... Water & Wastewater Treatment Technology
- Ⓒ ..... Wastewater Treatment Technology
- Ⓒ ..... Water Treatment Technology

Business
- Ⓐ ..... Business Administration
- ⒶⒹⒸ ..... Fashion/Design
- Ⓐ ..... Marketing
- ⒶⒸ ..... Management
- ⒹⒸ ..... Entrepreneurship
- Ⓓ ..... Mortuary Science (Advanced Standing Diploma)
- ⒹⒸ ..... Retailing
- ⒹⒸ ..... 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 in Arts
- Ⓐ ..... Associate in Science

Community Services
- ⒶⒹⒸ ..... Early Childhood Education
- Ⓐ ..... Criminal Justice
- Ⓐ ..... Fire Science Technology
- Ⓐ ..... Human Services
- Ⓒ ..... Chemical Dependency Counseling
- Ⓒ ..... Digital Forensic Investigation
- Ⓒ ..... Fire Specialist

Computers and Computer Info Systems
- Ⓐ ..... Business Information Systems
- Ⓐ ..... Information Technology/ Network Administration
- Ⓐ ..... Management Information Systems
- Ⓒ ..... Advanced Web Developer
- Ⓒ ..... Computer Applications
- Ⓒ ..... Computer Languages
- Ⓒ ..... Database Specialist
- Ⓒ ..... Data Entry
- Ⓒ ..... Informatics
- Ⓒ ..... Microcomputers
- Ⓒ ..... Network Security Manager
- ⒹⒸ ..... Web Developer
- Ⓐ ..... Web Development

Culinary Arts, Hotel Management, Dietary Management
- ⒶⒹ ..... Culinary Arts
- Ⓐ ..... Hotel & Restaurant Management
- Ⓓ ..... Hospitality Business
- Ⓒ ..... Dietary Manager
- Ⓒ ..... Enology
- Ⓒ ..... Viticulture
- Ⓒ ..... Wine Service

Drafting/Design
- ⒶⒹ ..... Architectural Technologies
- ⒶⒹ ..... Computer-Aided Design Technology

Engineering & Electronics Technology
- Ⓐ ..... Civil Engineering Technology
- Ⓐ ..... Electronics, Robotics & Automation
- Ⓐ ..... Electronics Systems Servicing Technology
- Ⓐ ..... Telecommunications Technology

Fitness
- Ⓐ ..... Fitness & Sports Management

Health Professions
- Ⓐ ..... Aging Services Management
- Ⓐ ..... Associate Degree Nursing (RN)
- Ⓐ ..... Advanced Standing Nursing (RN)
- Ⓐ ..... Dental Hygiene
- Ⓐ ..... Health Information Technology
- Ⓐ ..... Medical Laboratory Technology
- ⒶⒸ ..... Paramedic Specialist
- Ⓐ ..... Respiratory Therapy
- Ⓓ ..... Dental Assistant
- Ⓓ ..... Licensed Practical Nursing (LPN)
- Ⓓ ..... Medical Assistant
- Ⓓ ..... Optometric/Ophthalmic Technician
- Ⓓ ..... Pharmacy Technician
- Ⓓ ..... Surgical Technology
- Ⓒ ..... Adult Services
- Ⓒ ..... Emergency Medical Technician (EMT)
- Ⓒ ..... Gerontology Specialist
- Ⓒ ..... Long-Term Care Administrator
- Ⓒ ..... Long-Term Care Administrator-Practicum
- Ⓒ ..... Phlebotomy

Horticulture
- Ⓐ ..... Commercial Horticulture
- Ⓒ ..... Greenhouse Production
- Ⓒ ..... Landscape Design
- Ⓒ ..... Turf Maintenance

Interpretation & Translation
- Ⓐ ..... Interpretation & Translation
- Ⓒ ..... Interpretation & Translation–Business
- Ⓒ ..... Interpretation & Translation–Education
- Ⓒ ..... Interpretation & Translation–Healthcare
- Ⓒ ..... Interpretation & Translation–Human Services
- Ⓒ ..... Interpretation & Translation–Judiciary

Manufacturing
- Ⓐ ..... Advanced Manufacturing Technology
- ⒶⒹ ..... Fluid Power Technology
- ⒶⒹ ..... Graphic Technologies
- Ⓐ ..... Industrial Electro-Mechanical Technology
- Ⓐ ..... Tool and Diemaking
- Ⓓ ..... Machinist Technology
- Ⓓ ..... Diemaking
- Ⓓ ..... Visual Communications
- ⒹⒸ ..... Welding
- Ⓒ ..... Biomass Operations Technology
- Ⓒ ..... CNC Operator
- Ⓒ ..... Digital Publishing
- Ⓒ ..... Graphic Sales & Customer Service
- Ⓒ ..... Printing Technologies

Choose a Career Path

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

STEP 1

Complete this Personal Career Profile. Check each item that describes you in the categories listed below. 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:

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

STEP 2 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

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

Art

- ☐ Operate computers
- ☐ Create or copy drawings to use in advertising
- ☐ Enjoy expressing my feelings
- ☐ Can visually express ideas
- ☐ Have good spatial perception
- ☐ Work well under stress

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

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
- ☐ Have a pleasant, accommodating manner
- ☐ Make creative designs with food
- ☐ Good organizational 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

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

STEP 3

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.

STEP 4

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.

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 AA or AS 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 their 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:

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

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 desired four-year institution about any unique requirements. 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:

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

Accounting
Anthropology
Architecture
Art
Biology
Business Administration
Chemistry
Chiropractic
Computer Science
Criminal Justice
Drama
Dentistry
Education
Engineering
English
Environmental Science
Fitness and Sports Management
Foreign Language
Geography
Global Studies
History
Humanities
Journalism
Law
Literature
Mathematics
Medicine
Music
Nursing
Optometry
Pharmacy
Philosophy and Religion
Physics and Astronomy
Political Science
Psychology
Physician's Assistant
Sociology
Social Work
Spanish
Speech
Veterinary

For more information about the Associate in Arts (AA) degree, please visit our website at **www.dmacc.edu/programs/programinformation.asp**.

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 the Registrar for, and receive, an exception).

D. Complete a minimum of 64 semester credit hours.

E. Include at least 46 semester credit hours of Core courses:

- Communications 9 credits
- Social & Behavioral Sciences 9 credits
- Math & Sciences 9 credits
- Humanities 9 credits
- Distributed Requirements 10 credits

F. Include at least 18 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." 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, providing 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 institutions 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

**Students who plan 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 — 9 Credits

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

ANT 100	Introduction to Anthropology	POL 112	American State & Local Government
ANT 105	Cultural Anthropology	POL 121	International Relations
ECN 120	Principles of Macroeconomics	POL 125	Comparative Gov't & Politics
ECN 130	Principles of Microeconomics	POL 171	Intro to Public Administration
GEO 111	Intro to Geography	PSY 111	Introduction to Psychology
GEO 124	Reg Geography of the Non West World	PSY 121	Developmental Psychology
GEO 125	Regional Geography of the Dev World	PSY 241	Abnormal Psychology
HIS 112	Western Civ: Ancient to Early Modern	PSY 251	Social Psychology
HIS 113	Western Civ: Early Modern to Present	PSY 261	Human Sexuality
HIS 150	US History to 1877	SOC 110	Intro to Sociology
HIS 153	US History since 1877	SOC 115	Social Problems
HIS 257	African-American History	SOC 120	Marriage & Family
POL 111	American National Government	SOC 200	Minority Group Relations

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.

ENV 115	Environmental Science	BIO 104	Introductory Biology w/Lab
ENV 116	Environmental Science Lab (if student has credit for ENV 115)	BIO 112	General Biology I
		BIO 113	General Biology II
ENV 145	Conservation Biology	BIO 135	Intro to Botany
BIO 138	Field Ecology	MAT 141	Finite Mathematics
BIO 156	Human Biology w/Lab	MAT 129	Precalculus
BIO 164	Essentials Anatomy/Physiology	MAT 130	Trigonometry
BIO 168	Anatomy & Physiology I	MAT 157	Statistics (OR BUS 211 Business Statistics)
BIO 173	Anatomy & Physiology II	MAT 162	Prin. of Business Statistics
BIO 186	Microbiology	MAT 166	Calculus for Business/Social Science
BUS 211	Business Statistics (OR MAT 157 Statistics)	MAT 211	Calculus I
CHM 105	Survey of Chemistry	MAT 217	Calculus II
CHM 122	Intro to General Chemistry	MAT 219	Calculus III
CHM 132	Intro to Organic/Biochemistry	MAT 227	Differential Equations with Laplace
CHM 165	General/Inorganic Chemistry I	PHS 152	Astronomy
CHM 175	General/Inorganic Chemistry II	PHS 166	Meteorology, Weather & Climate
CHM 263	Organic Chemistry I	PHY 106	Survey of Physics
CHM 273	Organic Chemistry II	PHY 160	General Physics I
MAT 110	Math for Liberal Arts	PHY 161	General Physics II
MAT 114	Math for Elementary Teachers Math I	PHY 213	Classical Physics I
MAT 116	Math for Elementary Teachers Math II	PHY 223	Classical Physics II

Humanities — 9 Credits

ART 101	Art Appreciation	FLS 152	Elementary Spanish II
DRA 101	Intro to Theatre	FLS 241	Intermediate Spanish I
FLA 141	Elementary Arabic I	FLS 242	Intermediate Spanish II
FLA 142	Elementary Arabic II	FLS 181	Spanish for Heritage Speakers I
FLA 241	Intermediate Arabic I	FLS 281	Spanish for Heritage Speakers II
FLA 242	Intermediate Arabic II	HIS 112	Western Civ.: Ancient to Early Modern
FLC 141	Elementary Chinese I	HIS 113	Western Civ.: Early Modern to Present
FLC 142	Elementary Chinese II	HUM 116	Encounters in Humanities
FLC 241	Intermediate Chinese I	HUM 120	Introduction to Film
FLC 242	Intermediate Chinese II	HUM 121	America in the Movies
FLF 151	Elementary French I	LIT 101	Intro to Literature
FLF 152	Elementary French II	LIT 110	American Literature to Mid 1800s
FLF 241	Intermediate French I	LIT 111	American Literature since Mid 1800s
FLF 242	Intermediate French II	LIT 130	African-American Literature
FLG 141	Elementary German I	LIT 142	Major British Writers
FLG 142	Elementary German II	LIT 166	Science Fiction
FLG 241	Intermediate German I	LIT 185	Contemporary Literature
FLG 242	Intermediate German II	LIT 188	Detective Fiction
FLI 141	Elementary Italian I	LIT 190	Women Writers
FLI 142	Elementary Italian II	LIT 193	Humor in Literature
FLI 241	Intermediate Italian I	MUS 100	Music Appreciation
FLI 242	Intermediate Italian II	MUS 102	Music Fundamentals
FLJ 141	Elementary Japanese I	MUS 202	World Music
FLJ 142	Elementary Japanese II	PHI 101	Intro to Philosophy
FLJ 241	Intermediate Japanese I	PHI 105	Introduction to Ethics
FLJ 242	Intermediate Japanese II	PHI 110	Introduction to Logic
FLS 151	Elementary Spanish I	REL 101	Survey of World Religions

Distributed Requirement — 10 Credits

1. SDV 108 or HON 101 (1 credit)
2. Students must select the remaining 9 credits from any of the courses in categories of Communications, Social & Behavioral Sciences, Math & Sciences, and Humanities.

Electives 18 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.

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.

*ANT 100	Introduction to Anthropology	HSV 135	Women's Issues
*ANT 105	Cultural Anthropology	HSV 185	Discrimination and Diversity
ANT 110	Faces of Culture	*HUM 116	Encounters in Humanities
ANT 125	Applications of Anthropology	*HUM 120	Introduction to Film
ANT 150	Global Issues–Logic Perspec	*HUM 121	America in the Movies
ASM 150	Communication with the Elderly	ITP 133	Deaf Culture and Community
ASM 155	Impact of Demographics	ITR 101	Intro Interp & Translation
ASM 160	Aspects of Aging	*LIT 101	Intro to Literature
ASM 165	Healthy Aging	*LIT 111	Amer Literature since Mid 1800
ASM 180	Cultural Diversity	*LIT 130	African-American Literature
ASM 200	Depression, Death & Grieving	*LIT 142	Major British Writers
	(Three ASM courses must be taken	*LIT 190	Women Writers
	because the courses are one credit each.)	MGT 145	Human Relations in Business
BUS 220	Intro International Business	*MUS 202	World Music
ESL 160	ESL Multicultural Literature	PEH 178	Sports Diversity
*FL_—	All Foreign Language Courses	*POL 111	American National Government
*GEO 111	Intro to Geography	*POL 121	International Relations
*GEO 124	Reg Geog of the NonWest World	*POL 125	Comparative Gov't & Politics
GLS 200	Country Study	POL 129	Politics of Terrorism
GLS 220	The Middle East and Islam	*PSY 241	Abnormal Psychology
GLS 230	Latin America	*PSY 251	Social Psychology
GLS 235	Intro to International Studies	*REL 101	Survey of World Religions
*HIS 112	Western Civ.: Ancient to Early Mod	*SOC 110	Intro to Sociology
*HIS 113	Western Civ.: Early Modern to Pres	*SOC 115	Social Problems
*HIS 150	US History to 1877	*SOC 200	Minority Group Relations
*HIS 153	US History since 1877	SOC 225	Social Gerontology
HIS 201	Iowa History	SPC 120	Intercultural Communication
*HIS 257	African-American History	*SPC 126	Interpersonal & Small Grp Comm

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
Criminal Justice
Early Childhood Education
Fitness & Sports Management
Fire Science Technology
Human Services
Interpretation & Translation
Legal Assistant
Management Information Systems

For more information about the Associate in Science (AS) degree, please visit our website at **www.dmacc.edu/programs/programinformation.asp**.

Associate in Science 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 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 no more than 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." 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 institutions to verify the transferability of courses.

Information on each program is found in this catalog. See Index for page numbers.

PROGRAMS AVAILABLE

Core Requirements — 28 credits

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

ANT 100	Introduction to Anthropology
ANT 105	Cultural Anthropology
ECN 120	Principles of Macroeconomics
ECN 130	Principles of Microeconomics
GEO 111	Intro to Geography
GEO 124	Reg Geography of the Non West World
GEO 125	Regional Geography of the Dev World
HIS 112	Western Civ: Ancient to Early Modern
HIS 113	Western Civ: Early Modern to Present
HIS 150	US History to 1877
HIS 153	US History since 1877
HIS 257	African-American History
POL 111	American National Government
POL 112	American State & Local Government
POL 121	International Relations
POL 125	Comparative Gov't & Politics
POL 171	Intro to Public Administration
PSY 111	Introduction to Psychology
PSY 121	Developmental Psychology
PSY 241	Abnormal Psychology
PSY 251	Social Psychology
PSY 261	Human Sexuality
SOC 110	Intro to Sociology
SOC 115	Social Problems
SOC 120	Marriage & Family
SOC 200	Minority Group Relations

Mathematics & Sciences — 6 Credits

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

ENV 115	Environmental Science
ENV 116	Environmental Science Lab
ENV 145	Conservation Biology
BIO 104	Introductory Biology w/Lab
BIO 112	General Biology I
BIO 113	General Biology II
BIO 135	Intro to Botany
BIO 138	Field Ecology
BIO 156	Human Biology w/Lab
BIO 164	Essential Anatomy/Physiology
BIO 168	Anatomy & Physiology I
BIO 173	Anatomy & Physiology II
BIO 186	Microbiology
BUS 211	Business Statistics (OR MAT 157 Statistics)
CHM 105	Survey of Chemistry
CHM 122	Intro to General Chemistry
CHM 132	Intro to Organic/Biochemistry
CHM 165	General/Inorganic Chemistry I
CHM 175	General/Inorganic Chemistry
CHM 263	Organic Chemistry I
CHM 273	Organic Chemistry II
MAT 110	Math for Liberal Arts
MAT 114	Math for Elementary Teachers–Math I (if student has credit for ENV 115)
MAT 116	Math for Elementary Teachers–Math II
MAT 129	Precalculus
MAT 130	Trigonometry
MAT 141	Finite Mathematics
MAT 157	Statistics (OR BUS 211 Business Statistics)
MAT 162	Prin. of Business Statistics
MAT 166	Calculus for Business/Social Science
MAT 211	Calculus I
MAT 217	Calculus II
MAT 219	Calculus III
MAT 227	Differential Equations with Laplace
PHS 152	Astronomy
PHS 166	Meteorology, Weather and Climate
PHY 106	Survey of Physics
PHY 160	General Physics I
PHY 161	General Physics II
PHY 213	Classical Physics I
PHY 223	Classical Physics II

Humanities — 3 Credits

Students must select from the following courses:

ART 101	Art Appreciation
DRA 101	Intro to Theatre
FLA 141	Elementary Arabic I
FLA 142	Elementary Arabic II
FLA 241	Intermediate Arabic I
FLA 242	Intermediate Arabic II
FLC 141	Elementary Chinese I
FLC 142	Elementary Chinese II
FLC 241	Intermediate Chinese I
FLC 242	Intermediate Chinese II
FLF 151	Elementary French I
FLF 152	Elementary French II
FLF 241	Intermediate French I
FLF 242	Intermediate French II
FLG 141	Elementary German I
FLG 142	Elementary German II
FLG 241	Intermediate German I
FLG 242	Intermediate German II
FLI 141	Elementary Italian I
FLI 142	Elementary Italian II
FLI 241	Intermediate Italian I
FLI 242	Intermediate Italian II
FLJ 141	Elementary Japanese I
FLJ 142	Elementary Japanese II
FLJ 241	Intermediate Japanese I
FLJ 242	Intermediate Japanese II
FLS 151	Elementary Spanish I
FLS 152	Elementary Spanish II
FLS 241	Intermediate Spanish I
FLS 242	Intermediate Spanish II
FLS 181	Spanish for Heritage Speakers I
FLS 281	Spanish for Heritage Speakers II
HIS 112	Western Civ: Ancient to Early Modern
HIS 113	Western Civ: Early Modern to Present
HUM 116	Encounters in Humanities
HUM 120	Introduction to Film
HUM 121	America in the Movies
LIT 101	Intro to Literature
LIT 110	American Literature to Mid 1800s
LIT 111	American Literature since Mid 1800s
LIT 130	African-American Literature
LIT 142	Major British Writers
LIT 166	Science Fiction
LIT 185	Contemporary Literature
LIT 188	Detective Fiction
LIT 190	Women Writers
LIT 193	Humor In Literature
MUS 100	Music Appreciation
MUS 102	Music Fundamentals
MUS 202	World Music
PHI 101	Intro to Philosophy
PHI 105	Intro to Ethics
PHI 110	Intro to Logic
REL 101	Survey of World Religions

Distributed Requirement — 4 Credits

1. SDV 108 or HON 101 (1 credit).
2. Students must select the remaining 3 credits from any of the courses in categories of Communications, Social & Behavioral Sciences, Math & Sciences and Humanities.

Electives — 36 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.

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.

*ANT 100	Intro to Anthropology
*ANT 105	Cultural Anthropology
ANT 110	Faces of Culture
ANT 125	Applications of Anthropology
ANT 150	Global Issues–Logic Perspec
ASM 150	Communication with the Elderly
ASM 155	Impact of Demographics
ASM 160	Aspects of Aging
ASM 165	Healthy Aging
ASM 180	Cultural Diversity
ASM 200	Depression, Death & Grieving (Three ASM courses must be taken because the courses are one credit each.)
BUS 220	Intro International Business
ESL 160	ESL Multicultural Literature
*FL_ —	All Foreign Language Courses
*GEO 111	Intro to Geography
*GEO 124	Reg Geog of the NonWest World
GLS 200	Country Study
GLS 220	The Middle East and Islam
GLS 230	Latin America
GLS 235	Intro to International Studies
*HIS 112	Western Civ.: Ancient to Early Mod
*HIS 113	Western Civ.: Early Modern to Pres
*HIS 150	US History to 1877
*HIS 153	US History since 1877
HIS 201	Iowa History
*HIS 257	African-American History
HSV 135	Women's Issues
HSV 185	Discrimination and Diversity
*HUM 116	Encounters in Humanities
*HUM 120	Introduction to Film
*HUM 121	America in the Movies
ITP 133	Deaf Culture and Community
ITR 101	Intro Interp & Translation
*LIT 101	Intro to Literature
*LIT 111	Amer Literature since Mid 1800
*LIT 130	African-American Literature
*LIT 142	Major British Writers
*LIT 190	Women Writers
MGT 145	Human Relations in Business
*MUS 202	World Music
PEH 178	Sports Diversity
*POL 111	American National Government
*POL 121	International Relations
*POL 125	Comparative Gov't & Politics
POL 129	Politics of Terrorism
*PSY 241	Abnormal Psychology
*PSY 251	Social Psychology
*REL 101	Survey of World Religions
*SOC 110	Intro to Sociology
*SOC 115	Social Problems
*SOC 200	Minority Group Relations
SOC 225	Social Gerontology
SPC 120	Intercultural Communication
*SPC 126	Interpersonal & Small Grp Comm

TOTAL AS DEGREE REQUIREMENTS.....64 CREDITS

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 DMACC 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 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 4 credits

For more information about the Associate in General Studies (AGS) Degree, please visit our website at **www.dmacc.edu/programs/programinformation.asp**.

Communications 3 credits

ADM 157	Business English
COM 703	Communication Skills
ENG 105	Composition I
ENG 106	Composition II
ENG 108	Comp II: Technical Writing

Social & Behavioral Sciences/Humanities 3 credits

AGB 101	Agricultural Economics
ANT 100	Introduction to Anthropology
ANT 105	Cultural Anthropology
ART 101	Art Appreciation
ART 184	Principles of Photography
ART 186	Principles of Digital Photography
DRA 101	Intro to Theatre
ECN 120	Principles of Macroeconomics
ECN 130	Principles of Microeconomics
FLA 141	Elementary Arabic I
FLA 142	Elementary Arabic II
FLA 241	Intermediate Arabic I
FLA 242	Intermediate Arabic II
FLC 141	Elementary Chinese I
FLC 142	Elementary Chinese II
FLC 241	Intermediate Chinese I
FLC 242	Intermediate Chinese II
FLF 151	Elementary French I
FLF 152	Elementary French II
FLF 241	Intermediate French I
FLF 242	Intermediate French II
FLG 141	Elementary German I
FLG 142	Elementary German II
FLG 241	Intermediate German I
FLG 242	Intermediate German II
FLI 141	Elementary Italian I
FLI 142	Elementary Italian II
FLI 241	Intermediate Italian I
FLI 242	Intermediate Italian II
FLJ 141	Elementary Japanese I
FLJ 142	Elementary Japanese II
FLJ 241	Intermediate Japanese I
FLJ 242	Intermediate Japanese II
FLS 151	Elementary Spanish I
FLS 152	Elementary Spanish II
FLS 241	Intermediate Spanish I
FLS 242	Intermediate Spanish II
FLS 181	Spanish for Heritage Speakers I
FLS 281	Spanish for Heritage Speakers II
GEO 111	Intro to Geography
GEO 124	Reg Geography of the Non West World
GEO 125	Regional Geography of the Dev World
HIS 112	Western Civ: Ancient to Early Modern
HIS 113	Western Civ: Early Modern to Present
HIS 150	US History to 1877
HIS 153	US History since 1877
HIS 257	African-American History
HUM 116	Encounters in Humanities
HUM 120	Introduction to Film
HUM 121	America in the Movies
LIT 101	Intro to Literature
LIT 110	American Literature to Mid 1800s
LIT 111	American Literature since Mid 1800s
LIT 130	African-American Literature
LIT 142	Major British Writers
LIT 166	Science Fiction
LIT 185	Contemporary Literature
LIT 188	Detective Fiction
LIT 190	Women Writers
LIT 193	Humor in Literature
MGT 145	Human Relations in Business
MUS 100	Music Appreciation
MUS 102	Music Fundamentals
MUS 202	World Music
PHI 101	Intro to Philosophy
PHI 105	Introduction to Ethics

PHI 110	Introduction to Logic
POL 111	American National Government
POL 112	American State & Local Government
POL 121	International Relations
POL 125	Comparative Gov't & Politics
POL 171	Intro to Public Administration
PSY 102	Human and Work Relations
PSY 111	Introduction to Psychology
PSY 121	Developmental Psychology
PSY 241	Abnormal Psychology
PSY 251	Social Psychology
PSY 261	Human Sexuality
REL 101	Survey of World Religions
SOC 110	Intro to Sociology
SOC 115	Social Problems
SOC 120	Marriage & Family
SOC 200	Minority Group Relations

Mathematics & Sciences — 3 Credits

ENV 115	Environmental Science
ENV 116	Environmental Science Lab
ENV 145	Conservation Biology
BIO 104	Introductory Biology w/Lab
BIO 112	General Biology I
BIO 113	General Biology II
BIO 135	Intro to Botany
BIO 138	Field Ecology
BIO 156	Human Biology w/Lab
BIO 164	Essential Anatomy/Physiology
BIO 168	Anatomy & Physiology I
BIO 173	Anatomy & Physiology II
BIO 186	Microbiology
BIO 732	Health Science Microbiology
BIO 733	Health Science Anatomy
BIO 734	Health Science Physiology (OR MAT 157 Statistics)
BUS 112	Business Math
BUS 211	Business Statistics
CHM 105	Survey of Chemistry
CHM 122	Intro to General Chemistry
CHM 132	Intro to Organic/Biochemistry
CHM 165	General/Inorganic Chemistry I
CHM 175	General/Inorganic Chemistry
CHM 263	Organic Chemistry I
CHM 273	Organic Chemistry II
ELT 106	Basic Math for Electronics
ELT 108	Math–Electronics & Computers
MAT 110	Math for Liberal Arts (if student has credit for ENV 115)
MAT 114	Math for Elementary Teachers Math I
MAT 116	Math for Elementary Teachers Math II
MAT 121	College Algebra
MAT 129	Precalculus
MAT 130	Trigonometry
MAT 141	Finite Mathematics
MAT 157	Statistics (OR BUS 211 Business Statistics)
MAT 162	Prin. of Business Statistics
MAT 166	Calculus for Business/Social Science
MAT 211	Calculus I
MAT 217	Calculus II
MAT 219	Calculus III
MAT 227	Differential Equations with Laplace
MAT 772	Applied Math
MAT 773	Applied Math II
PHS 152	Astronomy
PHS 166	Meteorology, Weather and Climate
PHY 106	Survey of Physics
PHY 160	General Physics I
PHY 161	General Physics II
PHY 213	Classical Physics I
PHY 223	Classical Physics II
PHY 710	Technical Physics

Distributed Requirement — 4 Credits

1. SDV 108 or HON 101 (1 credit).
2. Students must select the remaining 3 credits 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 — 51 Credits

TOTAL AGS DEGREE REQUIREMENTS .....64 CREDITS

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.

For more information about the ASEP–General Motors program, please visit our website at **www.dmacc.edu/programs/automotive/gm**.

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 coursework as prescribed and maintain a 2.0 grade point average.

Required Courses

Semester 1

AUT 114	Shop Fund & Minor Service	4
ATG 322	GM Steering & Suspension	3
MAT 772	Applied Math	3
PSY 102	Human and Work Relations	3

Semester 2

ATG 320	GM Brake Systems	4
ATG 312	GM Specialized Electronic TM	4
ATG 326	GM Auto AC System	3
PHY 710	Technical Physics	3
ATG 329	Technical Internship I (March–May at dealer	3

Semester 3

ATG 330	Technical Internship II (May & June at dealer)	3
ATG 328	Diagnosis/Repair—GM Elect Sys	3
ATG 327	Minor Svc/Repair/GM Engines	3
ATG 336	GM Fuel Systems	3

Semester 4

ATG 337	GM Tune-Up Proc & Emission Control	4
ATG 344	GM Manual Drivetrains	4
ATG 345	GM Automatic Drivetrains	4
ATG 340	Technical Internship III (Oct. & Dec. at dealer)	3

Semester 5

ATG 350	Technical Internship IV (Jan.–March at dealer)	3
ATG 354	Advanced GM Motor Systems	5
COM 703	Communication Skills	3
ATG 333	Major Service Proc/GM Engines	3
BUS 102	Introduction to Business	3

(DMACC reserves the right to change the sequence in which these courses are offered.)

TOTAL CREDITS REQUIRED TO COMPLETE THIS AAS DEGREE.....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 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.

For more information about the ASSET–Ford program, please visit our website at **www.dmacc.edu/programs/automotive/ford**.

Location: Ankeny

Students start Fall semester.

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 dealership.

Graduation Requirements

To earn an ASSET–Ford AAS degree, a student must complete all coursework as prescribed and maintain a

2.0 grade point average.Students start Fall semester.

Graduation Requirements

To earn an ASSET–Ford AAS degree, a student must complete all coursework as prescribed and maintain a 2.0 grade point average.

Required Courses

semester 1

AUT 615	Auto Electricity/Electronics		4
AUT 114	Shop Fund & Minor Service		4
AUT 404	Basic Suspension & Steering		4
ATF 320	Technical Internship I		3

Semester 2—Select 1 Course from Option 1

AUT 652	Adv Automotive Electricity		3
AUT 845	Electrical Systems Diagnosis		2
AUT 524	Auto Brake Systems & Service		4
ATF 330	Technical Internship II		3
MAT 772	Applied Math Opt 1		3
MAT 141	Finite Math	Opt 1	4

SEMESTER 3—SELECT 1 COURSE FROM OPTION 2 AND 1 COURSE FROM OPTION 3

ATF 326	Ford Automotive Climate Control		3
ATF 333	Ford Engine Diagnosis/Repair		4
PHY 710	Technical Physics	Opt 2	3
PHY 106	Survey of Physics	Opt 2	4
MGT 145	Human Relations in Business	Opt 3	3
PSY 102	Human & Work Relations	Opt 3	3
PSY 111	Introduction to Psychology	Opt 3	3
SOC 110	Introduction to Sociology	Opt 3	3

SEMESTER 4—SELECT 1 COURSE FROM OPTION 4

ATF 340	Technical Internship III		3
ATF 336	Ford Fuel Systems and Injection		3
ATF 337	Ford Driveability & Emissions		4
ATF 346	Ford Transmissions and Transaxles		4
COM 703	Communication Skills	Opt 4	3
ENG 105	Composition I	Opt 4	3

SEMESTER 5

ATF 350	Technical Internship IV	3
ATF 352	Ford Systems/Technology Update	3
ATF 344	Ford Driveline & 4X4 Diagnosis/Repair	2
ATF 345	Ford Manual Transmissions	2
ATF 362	Ford Diesel Engine Technology	4

TOTAL CREDITS REQUIRED TO COMPLETE THIS AAS DEGREE.....74

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.

For more information about the Accounting & Bookkeeping program, please visit our website at **www.dmacc.edu/programs/accounting/acctbook**.

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 semester.

Graduation Requirements

To earn an Accounting & Bookkeeping diploma, a student must complete all coursework as prescribed, maintain a 2.0 grade point average and receive a grade of "C" or higher in all ACC coursework.

Semester 1–Select 1 Course from Option 1 and 1 Course from Option 2

ACC 131	Principles of Accounting I		4
ACC 124	Accounting Professionalism		3
BUS 112	Business Math		3
CSC 110	Intro to Computers		3
MGT 145	Human Relations in Business	Opt 1	3
PSY 111	Introduction to Psychology	Opt 1	3
ECN 120	Principles of Macroeconomics	Opt 1	3
ECN 130	Principles of Microeconomics	Opt 1	3
ENG 105	Composition I	Opt 2	3
ADM 157	Business English	Opt 2	3

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

Semester 2

ACC 132	Principles of Accounting II		4
ACC 193	Accounting Procedures/Mgmt		3
ACC 311	Computer Accounting		3
ACC 361	Accounting Spreadsheets		3
ACC 161	Payroll Accounting		3

Semester 3–Select 1 Course from Option 3

ACC 946	Accounting Career Seminar		1
ACC 932	Accounting Internship		3–4
ENG 106	Composition II	Opt 3	3
ENG 108	Comp II: Technical Writing	Opt 3	3
COM 703	Communication Skills	Opt 3	3

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

TOTAL CREDITS REQUIRED TO COMPLETE THIS DIPLOMA 42

Accounting Certificate I Accounting Certificate II & Accounting Income Tax Preparer

(see Certificate Section, page 124)

Accounting Information Systems

The Accounting Information Systems program prepares you for a career in accounting and for a liaison position between the accounting and information systems departments. 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. The program offers two tracks: the Programming track and the Informatics track. You must select either the Programming track or the Informatics track by the second term. You will find employment opportunities in the profit and nonprofit, private and governmental sectors.

For more information about the Accounting Information Systems program, please visit our website at **www.dmacc.edu/programs/accounting/ais**.

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 semester at Boone and Urban Campuses.

Students start Spring semester at Ankeny and Carroll Campuses. Course sequences may vary; see a counselor/advisor for details.

Graduation Requirements

To earn an Accounting Information Systems AS degree, a student must complete all coursework as prescribed, maintain a 2.0 grade point average and receive a grade of "C" or higher in all ACC coursework.

AIS Programming Track

The Programming track emphasizes business and accounting-specific applications programming. You will study several programming languages, various levels of operating systems, database systems and the peripheral equipment available in the field.

Semester 1

ACC 131	Principles of Accounting I	4
CIS 125	Intro to Program Logic w/lang	3
ECN 120	Principles of Macroeconomics	3
ENG 105	Composition I	3
Any AA/AS degree Core MAT or BUS 211 course		3–4

(Note: Students must take a 4-credit math course in either Semester 1 or Semester 3.)

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

Semester 2

ACC 132	Principles of Accounting II	4
ENG 106	Composition II	3
ACC 311	Computer Accounting	3
CIS 303	Introduction to Database	3
Any AA/AS degree Core BIO, CHM, ENV or PHY course		3

Semester 3–Select 1 Course from Option 1

ACC 231	Intermediate Accounting I		4
ACC 222	Cost Accounting		4
CIS 161	C++	Opt 1	3
CIS 402	COBOL	Opt 1	3
CIS 604	Visual Basic	Opt 1	3
CIS 152	Data Structures	Opt 1	3
Any AA/AS degree Core Humanities course			3
Any AA/AS degree Core MAT or BUS 211 course			3–4

(Note: Students must take a 4-credit math course in either Semester 1 or Semester 3.)

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

Semester 4–Select 1 Course from Option 2 and 1 Course from Option 3

SPC 101	Fundamentals of Oral Communication		3
ACC 272	Accounting Information Systems		4
ACC 361	Accounting Spreadsheets		3
ECN 130	Principles of Microeconomics		3
ACC 161	Payroll Accounting	Opt 2	3
ACC 191	Financial Analysis	Opt 2	3
ACC 261	Income Tax Accounting	Opt 2	3
BCA 113	Computer Network Literacy	Opt 3	3
MGT 248	Systems & Information Mgmt	Opt 3	3

Note: To complete this program, you must meet the Diversity Requirement with a grade of "C" or higher. See the AA/AS section of this catalog for more information about which courses can count toward this requirement.

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

TOTAL CREDITS REQUIRED TO COMPLETE THIS AS DEGREE, PROGRAMMING TRACK.....69

AIS Informatics Track

The Informatics track is the study of the development of solutions for business and accounting-specific problems. You will learn to use technology to advance the needs of business and accounting departments. You will master the tools of informatics specialists and learn to provide technical assistance, support and advice to individuals and organizations that depend on information and technology.

Semester 1

ACC 131	Principles of Accounting I	4
CIS 125	Intro to Program Logic w/lang	3
ECN 120	Principles of Macroeconomics	3
ENG 105	Composition I	3
Any AA/AS degree Core MAT or BUS 211 course		3–4

(Note: Students must take a 4-credit math course in either Semester 1 or Semester 3.)

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

Semester 2

ACC 132	Principles of Accounting II	4
ENG 106	Composition II	3
ACC 311	Computer Accounting	3
INF 110	Fundamental Informatics	3
Any AA/AS degree Core BIO, CHM, ENV or PHY course		3

Semester 3

ACC 231	Intermediate Accounting I	4
ACC 222	Cost Accounting	4
INF 130	Social Informatics	3
Any AA/AS degree Core Humanities course		3
Any AA/AS degree Core MAT or BUS 211 course		3–4

(Note: Students must take a 4-credit math course in either Semester 1 or Semester 3.)

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

Semester 4–Select 1 Course from Option 2 and 1 Course from Option 4

SPC 101	Fundamentals of Oral Communication		3
ACC 272	Accounting Information Systems		4
ACC 361	Accounting Spreadsheets		3
ECN 130	Principles of Microeconomics		3
ACC 161	Payroll Accounting	Opt 2	3
ACC 191	Financial Analysis	Opt 2	3
ACC 261	Income Tax Accounting	Opt 2	3
INF 220	Human-Computer Interaction	Opt 4	3
INF 310	Informatics Security	Opt 4	3
INF 320	Legal Informatics Issues	Opt 4	3

Note: To complete this program, you must meet the Diversity Requirement with a grade of "C" or higher. See the AA/AS section of this catalog for more information about which courses can count toward this requirement.

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

TOTAL CREDITS REQUIRED TO COMPLETE THIS AS DEGREE, INFORMATICS TRACK.....69

Accounting Paraprofessional

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.

For more information about the Accounting Paraprofessional program, please visit our website at **www.dmacc.edu/programs/accounting/acctpara**.

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 semester at Boone and Urban Campuses.

Students start Spring semester at Ankeny and Carroll Campuses. Course sequence may vary; see a counselor/ advisor for details.

Graduation Requirements

To earn an Accounting Paraprofessional AS degree, a student must complete all coursework as prescribed and maintain a 2.0 grade point average. A grade of "C" or better is required in all ACC coursework.

Semester 1

ACC 131	Principles of Accounting I	4
CSC 110	Intro to Computers	3
ECN 120	Principles of Macroeconomics	3
ENG 105	Composition I	3
Any AA/AS degree Core MAT or BUS 211 course		3–4

(Note: Students must take a 4-credit math course in either Semester 1 or Semester 3.)

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

Semester 2

ACC 132	Principles of Accounting II	4
ACC 311	Computer Accounting	3
BUS 185	Business Law I	3
ENG 106	Composition II	3
Any AA/AS degree Core Humanities course		3

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

Semester 3

ACC 231	Intermediate Accounting I	4
ACC 222	Cost Accounting	4
ECN 130	Principles of Microeconomics	3
SPC 101	Fundamentals of Oral Communication	3
Any AA/AS degree Core MAT or BUS 211 course		3–4

(Note: Students must take a 4-credit math course in either Semester 1 or Semester 3.)

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

Semester 4–Select 1 Course from Option 1

ACC 261	Income Tax Accounting		3
ACC 361	Accounting Spreadsheets		3
ACC 191	Financial Analysis		3
ACC 272	Accounting Information Systems	Opt 1	4
ACC 161	Payroll Accounting	Opt 1	3
Any AA/AS degree Core BIO, CHM, ENV or PHY course			3–5

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

Note: To complete this program, you must meet the Diversity Requirement with a grade of "C" or higher. See the AA/AS section of this catalog for more information about which courses can count toward this requirement.

TOTAL CREDITS REQUIRED TO COMPLETE THIS AS DEGREE.....65

Accounting Payroll

(see Certificate Section, page 125)

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, and will attain the oral and written communication skills 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.

For more information about the Accounting Specialist program, please visit our website at **www.dmacc.edu/programs/accounting/acctspecial**.

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 semester at Boone and Urban Campuses.

Students start Spring semester 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 coursework.

Semester 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.

Students planning to transfer to a four-year institution should select ENG 105 for Option 1.

Semester 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 ENG106 for Option 2. ECN 120 is strongly recommended for business majors.

Semester 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.

Students planning to transfer to a four-year institution should select PSY 111 or ECN 130 for Option 4. ECN 130 is strongly recommended for business majors.

Semester 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.

Semester 5

ACC 261	Income Tax Accounting	3
ACC 191	Financial Analysis	3
ACC 946	Accounting Career Seminar	1
ACC 932	Accounting Internship	3–4

TOTAL CREDITS REQUIRED TO COMPLETE THIS AAS DEGREE.....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 technological aspects, and combines coursework 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.

To successfully complete this program, a student must complete all coursework as prescribed and maintain a 2.0 grade point average. A grade of "C-" or better is required in the first course of a sequential course offering before enrolling in the second-level course of the sequence or in a prerequisite course. This includes ADM 157, ADM 162, BCA 133, BCA 213 and BCA 212 or CSC 110.

For more information about the Administrative Assistant program, please visit our website at **www.dmacc.edu/programs/btec/adminassistant.asp**.

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 semester.

Not all courses are offered at each campus every semester. Academic Advisors are available to assist with scheduling.

Graduation Requirements

To earn an Administrative Assistant AAS degree, a student must complete all coursework as prescribed and maintain a 2.0 grade point average.

Semester 1

BUS 112	Business Math	3
MGT 145	Human Relations in Business	3
ADM 157	Business English	3
ADM 131	Office Calculators	1
BCA 212	Intro to Computer Business Applications	3
BCA 133	Word Processing Skill Development I	4

(Note: Students must demonstrate a keyboarding speed of 25 NWPM or above, by taking a five-minute test, before enrolling in BCA 133.)

Semester 2

MGT 115	Administrative Management	3
ADM 162	Office Procedures	3
ADM 154	Business Communication	3
BCA 137	Word Processing Skill Development II	3
BCA 213	Intermed. Computer Business Applications	3
ADM 259	Professional Development	3

Semester 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.

ADM 221	Career Development Skills		2
ACC 131	Principles of Accounting I	Opt 1	4
ACC 111	Intro to Accounting	Opt 1	3
SPC 101	Fundamentals of Oral Communication	Opt 2	3
SPC 126	Interpersonal & Small Group Comm	Opt 2	3
BUS 102	Intro to Business	Opt 3	3
FIN 121	Personal Finance	Opt 3	3
BUS 148	Small Business Management	Opt 3	3
BUS 185	Business Law I	Opt 3	3
BCA 113	Computer Network Literacy	Opt 3	3
MGT 248	Systems & Information Management	Opt 3	3
MKT 110	Principles of Marketing	Opt 3	3

Semester 4–Select 3 Credits from Option 4

ADM 164	Administrative Office Applications	3
BCA 111	Emerging Technologies	3
BCA 250	Desktop Publishing	3

ADM 265*	Supervised Practical Experience		2
ADM 937*	Prof Office Careers Seminar		1
Any ACC course (except adjunct)		Opt 4	
Any BUS course (except adjunct)		Opt 4	
Any BCA, CSC, CIS or NET course (except adjunct)		Opt 4	
Any ECN course (except adjunct)		Opt 4	
Any FIN course (except adjunct)		Opt 4	
Any MGT course (except adjunct)		Opt 4	
Any MKT course (except adjunct)		Opt 4	
Any ADM, MTR, MAP course (except adjunct)		Opt 4	

**Meet with the internship supervisor the semester before enrolling.*

TOTAL CREDITS REQUIRED TO COMPLETE THIS AAS DEGREE..... 64

Adult Services

(see Certificate Section, page 125)

Advanced Manufacturing Technology

The DMACC Advanced Manufacturing Technology program prepares applicants for a wide variety of manufacturing tasks in industry. Successful applicants will learn the basic elements of welding, fabrication, 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 the completion of this two-year Associate in 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.

For more information about the Advanced Manufacturing Technology program, please visit our website at **cam.dmacc.edu**.

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 Fall semester.

(If you wish to start the program in the Spring or Summer, please contact the program chair at 515-964-6416 to discuss proper sequencing of courses.)

Graduation Requirements

To earn an Advanced Manufacturing Technology AAS degree, a student must complete all coursework as prescribed and maintain a 2.0 grade point average.

Semester 1

MAT 772	Applied Math		3
MFG 276	Hand & Bench Machine Tools		1
WEL 120	Oxy Fuel Welding/Cutting		2
WEL 150	Arc Welding I (SMAW)		2
MFG 250	Engine Lathe Theory		1
MFG 251	Engine Lathe Operations Lab		2
MFG 121	Machine Trade Printreading I		2
MFG 105	Machine Shop Measuring		3

Semester 2–Select 1 Course from Option 1

MFG 260	Mill Operations Theory		1
MFG 261	Milling Operations Lab		2
WEL 165	Arc Welding II (SMAW)		3
WEL 111	Welding Blueprint Reading		3
WEL 166	Arc Welding III (SMAW)		2
WEL 181	Gas Metal Arc Welding		2
CAD 139	Intro to CAD/CAM	Opt 1	3
CAD 119	Intro Computer-Aided Drafting	Opt 1	3
Or any CAD or EGT 400 or EGT 450 Project Lead the Way Elective		Opt 1	3-6

Semester 3

MFG 132	Machine Trade Printreading II		3
CAD 182	SolidWorks CAD I		3
MAT 773	Applied Math II		3
WEL 190	Gas Tungsten Arc Welding		2
MGT 145	Human Relations in Business		3

Semester 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
WEL 167	Arc Welding IV (SMAW)		3
WEL 168	Arc Welding V (SMAW)		3
WEL 169	Arc Welding VI (SMAW)		2

Semester 5

WEL 241	Fabrication I		4
WEL 242	Fabrication II		4
WEL 255	Welding Inspection		4
Any AAS Degree Communications General Requirement Course			3

TOTAL CREDITS REQUIRED TO COMPLETE THIS AAS DEGREE..... 75

Advanced Web Developer

(see Certificate Section, page 125)

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; a 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 healthcare-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 administrator.

For more information about the Aging Services Management program, please visit our website at **www.dmacc.edu/programs/aging**.

Location: Ankeny

Program Entry Requirements

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

Students may start any semester.

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 must maintain a 2.0 grade point average.

Long-Term Care Administrator & Long-Term Care Adminstrator Practicum

(see Certificate Section, page 141 & 142)

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. To be eligible to be a nursing home administrator in Iowa, students will need to transfer to a four-year college or university and complete a BS/BA degree. Administrators play a vital role in planning, organizing, staffing, directing and controlling the operation of a Long-Term Care Facility.

Required Courses

COMPLETE AS DEGREE CORE REQUIREMENTS			**28**
ASM 278	Management in Senior Care Services		3
ASM 279	Healthcare Human Resources		3
ASM 280	Healthcare Delivery Systems		2
ASM 282	Aging Services		2
ASM 283	Aging Policies & Government Programs		2
SOC 225	Social Gerontology/Applications		4
SOC 226	Issues in Aging		2
Practicum:			
ASM 261	Regulation of NF/SNF		3
ASM 262	Regulation of Supported Living		3
ASM 263	Practicum I: Quality of Life		2
ASM 264	Practicum II: Human Resources		1
ASM 265	Practicum III: Finance		1
ASM 266	Practicum IV: Environment		1
ASM 267	Practicum V: Leadership & Mgmt		1
Option Courses–Select a Minimum of 10 Credits from Option 1			
ACC 131	Principles of Accounting I	Opt 1	4
ACC 111	Intro to Accounting	Opt 1	3
ASM 238	Financial Management in Aging Services	Opt 1	3
ASM 239	Information Systems in Healthcare	Opt 1	2
ASM 274	Law and Ethics in Healthcare	Opt 1	3

Adult Services Track

The Adult Services AS degree track provides students with the coursework to qualify as administrators or directors of Residential Care Facilities, Assisted Living programs, Adult Day Care programs, home and community-based services and other agencies that work with the elderly. Administrators or directors play a vital role in planning, organizing, staffing, directing and controlling the operation of adult services programs.

Note: If you are planning to work in a residential care facility, it is recommended that you take SOC 110 Introduction to Sociology and PSY 111 Introduction to Psychology to fulfill the Social & Behavioral Sciences component of the AS degree core requirements.

Required Courses

Complete AS degree Core Requirements			**28**
ASM 278	Management in Senior Care Services		3
ASM 279	Healthcare Human Resources		3
ASM 280	Healthcare Delivery Systems		2
ASM 282	Aging Services		2
ASM 283	Aging Policies & Government Programs		2
SOC 225	Social Gerontology/Applications		4
SOC 226	Issues in Aging		2
ASM 239	Information Systems in Healthcare		2
ASM 262	Regulation of Supported Living		3
ASM 256	Agency Experience		2
ASM 274	Law and Ethics in Healthcare		3
Option Cours–Select 1 Course from Option 2 and a Minimum of 10 Credits from Option 3			
ACC 131	Principles of Accounting I	Opt 2	4
ACC 111	Intro to Accounting	Opt 2	3
ASM 261	Regulation of NF/SNF	Opt 3	3
ASM 238	Financial Management in Aging Services	Opt 3	3

ASM 295	Death and Dying	Opt 3	3
ASM 291	Activity Coordinator	Opt 3	4
DTM 355	Food Production Management	Opt 3	1
DTM 356	Food Service Management	Opt 3	2
HSC 240	Human Nutrition	Opt 3	3
HSV 130	Interviewing/Interpersonal Relations	Opt 3	3
MAP 129	Medical Terminology	Opt 3	1
MKT 110	Principles of Marketing	Opt 3	3
PEH 102	Health	Opt 3	3

Note: If the student completes SOC 225 with a grade of "C" or higher, the course will meet the Diversity Requirement. See the AA/AS section of this catalog for more information.

TOTAL CREDITS REQUIRED TO COMPLETE THIS AS DEGREE WITH:

THE LONG-TERM CARE ADMINISTRATION TRACK.....68

THE ADULT SERVICES TRACK.....69

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.

Students who receive the Agribusiness degree are capable of filling entry-level jobs as an agronomist, livestock specialist, grain or petroleum marketing specialist. Other job opportunities may be found within the seed, chemical, banking and commodity brokerage industry.

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. For more information about the Agribusiness program, please visit our website at **www.dmacc.edu/programs/ag**.

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 semester.

Graduation Requirements

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

Required Courses

Fall–Select 1 Course from Option 1

AGS 113	Survey of the Animal Industry		3
AGA 114	Principles of Agronomy		3
AGA 154	Fundamentals of Soil Science		3
AGA 157	Soil Fertility		1
AGC 314	Leadership in Agriculture		2
ENG 105	Composition	Opt 1	3
COM 703	Communication Skills	Opt 1	3

Spring–Select 1 Course from Option 2

AGA 284	Pesticide Application Certification		3
AGB 235	Intro to Agricultural Markets		3
AGB 802	Agribusiness Internship I		2
AGS 319	Animal Nutrition		3
SPC 101	Fund of Oral Communication	Opt 2	3
SPC 126	Interpersonal & Small Grp Communication	Opt 2	3

Summer–Select 2 Courses from Option 3

AGA 381	Crop Scouting		3
AGP 333	Precision Agriculture Applications		3
AGS 225	Swine Science	Opt 3	3
AGS 226	Beef Cattle Science	Opt 3	3
AGB 331	Agribusiness Management	Opt 3	3
AGM 336	Alternative Energy in Ag	Opt 3	3
BUS 185	Business Law I	Opt 3	3
CSC 110	Intro to Computers	Opt 3	3

Fall–Select 1 Course from Option 4

AGA 222	Grain Management		2
AGB 101	Agricultural Economics		3
AGS 242	Animal Health		3
AGT 120	Agricultural Applications of Biotech		3
MAT 141	Finite Math	Opt 4	4
MAT 772	Applied Math	Opt 4	3

Spring–Select 4 Courses from Option 5 and 1 from Option 6

AGB 812	Agribusiness Internship II		2
AGC 420	Agricultural Issues	Opt 5	3
AGB 440	Agricultural Niche Marketing	Opt 5	3
AGA 129	Intro to Sustainable Agricul	Opt 5	3
AGS 323	Animal Nutrition II	Opt 5	3
AGA 211	Grain and Forage Crops	Opt 5	3
AGB 330	Farm Business Management	Opt 5	3
AGS 222	Survey of Aquaculture Industry	Opt 5	3
MKT 140	Selling	Opt 5	3
ACC 131	Principles of Accounting I	Opt 5	4
ACC 111	Intro to Accounting	Opt 5	3
MGT 145	Human Relations in Business	Opt 6	3
PSY 111	Introduction to Psychology	Opt 6	3
SOC 110	Introduction to Sociology	Opt 6	3
SOC 115	Social Issues	Opt 6	3

TOTAL CREDITS REQUIRED TO COMPLETE THIS AAS DEGREE.....72

Agribusiness Agronomy, Agribusiness Animal Science, Agribusiness Farm Management, Agribusiness Sales/Service & Sustainable Agriculture

(see Certificate Section, page 126–127)

Airbrush Art

(see Certificate Section, page 127)

Architectural Millwork

(see Certificate Section, page 127)

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 countertops. Students will receive classroom instruction as well as hands-on training and will use modern millwork equipment. Graduates of the program will earn a diploma, which will prepare them for entry-level positions in the architectural millwork field.

For more information about the Architectural Millwork program, please visit our website at **www.dmacc.edu/programs/architecturalmillwork**.

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 semester.

Graduation Requirements

To earn an Architectural Millwork diploma, students must complete all coursework as prescribed and maintain a 2.0 (C) grade point average.

ALL MLW courses are reserved for students accepted into the full-time Architectural Millwork program.

Semester 1

MLW 440	Blueprint Reading and Layout	3
MLW 441	Material Identification and Usage	3
MLW 442	Introduction to Portable Tools	3
MLW 443	Stationary Equipment	4
HSC 102	Emergency Care	1
MAT 772	Applied Math	3

Semester 2

MLW 444	Advanced Equipment Techniques	3
MLW 445	Millimeter Cabinet Techniques	3
MLW 446	Millwork Techniques	4
MLW 447	Introduction to Application	3
COM 703	Communication Skills	3

Semester 3

MLW 448	Advanced Millwork Applications I	5
MLW 449	Advanced Millwork Applications II	5

TOTAL CREDITS REQUIRED TO COMPLETE THIS DIPLOMA.....43

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.

For more information about the Architectural Technologies program, please visit our website at **arch.dmacc.edu**.

Location: Ankeny

Selected courses offered at Urban Campus.

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 chairperson.

Graduation Requirements

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

Semester 1

ARC 114	Architectural Drafting I		5
ARC 165	Materials & Assemblies I		3
ARC 116	Construction Estimating		2
CAD 119	Intro to Computer-Aided Drafting		3

Semester 2–Select 1 Course from Option 1

ARC 127	Architectural Drafting II		5
ARC 167	Materials & Assemblies II		3
CAD 126	Intermediate CADD-Architectural		3
ENG 105	Composition I		3
MGT 145	Human Relations in Business	Opt 1	3
PSY 111	Intro to Psychology	Opt 1	3
PSY 102	Human & Work Relations	Opt 1	3
SOC 110	Introduction to Sociology	Opt 1	3

Semester 3–Select 1 Course from Option 2

ARC 128	Architectural Drafting III		5
ARC 169	Materials & Assemblies III		3
ARC 180	Building Codes		2
ARC 181	Construction Documents Technology		2

MAT 773	Applied Math II	Opt 2	3
MAT 129	Precalculus	Opt 2	5
MAT 130	Trigonometry	Opt 2	3
MAT 211	Calculus I	Opt 2	5

TOTAL CREDITS REQUIRED TO COMPLETE THE DIPLOMA.....45

Additional Courses Required to Complete the AAS degree (Select 1 Course from Option 3 and 1 Course from Option 4)

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 3	3
CAD 162	Introduction to Multimedia	Opt 3	3
ENG 106	Composition II	Opt 4	3
ENG 108	Comp II: Technical Writing	Opt 4	3

Elective Credit (Students who choose a 3-credit course for Option 2 must take an additional 2 credits) 2

TOTAL CREDITS REQUIRED TO COMPLETE THE AAS DEGREE..... 64

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 one who wants only specific segments of the complete program.

For more information about the Auto Collision Technology program, please visit our website at **https://go.dmacc.edu/programs/automotive/autocollision**.

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 semester.

Graduation Requirements

To earn an Automotive Collision Technology diploma or AAS degree, a student must complete all coursework 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..... 46

Auto Collision–AAS

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

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, which 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.

For more information about the Auto Mechanics Technology program, please visit our website at **www.dmacc.edu/programs/automotive/automechanics**

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. Attend any required information/registration session.
3. Obtain the following scores on the COMPASS Test and Mechanical Reasoning Test:

Reading	81 or higher
English (Language)	42 or higher
Math (Numeric)	21 or higher
Mechanical Reasoning	50 or higher

Ankeny Campus students start Fall or Spring semester. Urban Campus students start Fall semester.

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 coursework as prescribed and maintain a 2.0 grade point average.

Automotive Mechanics Technology—AAS degree

Required Courses–Select 1 Course from Option 1 and 1 Course from Option 2

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
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
HSC 102	Emergency Care	Opt 2	1
ECE 130	Emergency Care	Opt 2	1

TOTAL CREDITS REQUIRED TO COMPLETE THE AUTO MECHANICS AAS DEGREE 75

Auto Engines & Tune-Up—Diploma

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

Required Courses

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 823	Advanced Automotive Tune-Up	4
AUT 870	Automotive Service Management	2
AUT 173	Advanced Automotive Engine Repair	3
COM 703	Communication Skills	3
MAT 772	Applied Math	3
PHY 710	Technical Physics	3

TOTAL CREDITS REQUIRED TO COMPLETE THE ENGINES & TUNE-UP DIPLOMA 44

Auto Chassis & Power Train—Diploma

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 and 1 Course from Option 2

AUT 114	Shop Fund & Minor Service		4
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
COM 703	Communication Skills		3
MAT 772	Applied Math		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
HSC 102	Emergency Care	Opt 2	1
ECE 130	Emergency Care	Opt 2	1

TOTAL CREDITS REQUIRED TO COMPLETE THE CHASSIS & POWER TRAIN DIPLOMA 39

Automotive Maintenance & Light Repair Technology–Diploma 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 and 1 Course from Option 2

AUT 114	Shop Fund & Minor Service		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 870	Automotive Service Management		2
AUT 524	Auto Brake Systems & Service		4
AUT 404	Basic Suspension & Steering		4
AUT 535	Advanced Auto Brakes & Alignment		5
COM 703	Communication Skills		3
MAT 772	Applied Math		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
HSC 102	Emergency Care	Opt 2	1
ECE 130	Emergency Care	Opt 2	1

TOTAL CREDITS REQUIRED TO COMPLETE THE AUTO MAINTENANCE & LIGHT REPAIR DIPLOMA.....43

Basic Visual Communications

(see Certificate Section, page 128)

Biomass Operations Technology

(see Certificate Section, page 128)

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 enable 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.

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 Biotechnology program chairperson or an advisor for additional assistance.

For more information about the Biotechnology program, please visit our website at **www.go.dmacc.edu/programs/biotechnology**.

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 semester.

Graduation Requirements

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

Required Courses

BIO 104	Introductory Biology w/Lab		3
ENG 105	Composition I		3
BIO 112	General Biology I		4
ENG 106	Composition II		3
MAT 157	Statistics		4
BIO 113	General Biology II		4
BIO 186	Microbiology		4
SPC 101	Fundamentals of Oral Communication		3
BIO 250	Cell & Molecular Biology-Nucleic Acids		5
BIO 251	Cell and Molecular Biology-Proteins		5
BIO 146	Genetics		3
BIO 249	Biotechnology Internship		3
Option Courses–Select 3 Credits from Option 1			
AA/AS Core Humanities		Opt 1	3
Select 6 Credits From Option 2			
AA/AS Core Social & Behavioral Sciences		Opt 2	6
Select 1 Course from Option 3			
CSC 110	Intro to Computers	Opt 3	3
ENG 108	Comp II: Technical Writing	Opt 3	3
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.*

Note: To complete this program, you must meet the Diversity Requirement with a grade of "C" or higher. See the AA/AS section of this catalog for more information about which courses can count toward this requirement.

TOTAL CREDITS REQUIRED TO COMPLETE THIS AS DEGREE..... 64

Biotechnology Laboratory Methods

(see Certificate Section, page 128)

Building Maintenance

(see Certificate Section, page 129)

Building Trades

The Building Trades program provides students with the skills and knowledge necessary to enter either residential or commercial construction fields. Classroom work focuses on familiarizing the students with basic knowledge of construction materials. Laboratory activities emphasize practical, hands-on skills needed in the building trades.

The last semester is devoted to applying classroom theory and lab skills in an actual construction job, either residential or commercial.

For more information about the Building Trades program, please visit our website at **www.dmacc.edu/programs/bldgtrades**.

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 semester.

Graduation Requirements

To earn a Building Trades diploma, a student must complete all coursework as prescribed and maintain a 2.0 grade point average.

Semester 1

CON 333	Materials/Construction Theory	5
CON 334	Construction Techniques	7
CON 336	Care/Use of Hand/Power Tools	1
CON 337	Construction Blueprint Reading	1
CON 338	Materials Takeoff	1
HSC 102	Emergency Care	1
Any AAS degree core Math course		3

Semester 2

CON 346	Concrete Systems & Forming	4
CON 341	Construction Drafting & Design	2
CON 342	Interior Trim Practices	3
CON 480	Construction Procedure/Application I	5
Any AAS degree core Communications course		3

Semester 3

CON 481	Construction Procedure/Application II	5
CON 482	Construction Procedure/Application III	5

TOTAL CREDITS REQUIRED TO COMPLETE THIS DIPLOMA..... 46

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 the freshman and sophomore Business Administration requirements of most 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.

The Business Administration program at Des Moines Area Community College is accredited through the Accreditation Council of Business Schools and Programs. (ACBSP, 11520 West 119th Street, Overland Park, KS 66213, www.acbsp.org).

For more information about the Business Administration program, please visit our website at **www.dmacc.edu/programs/businessad**.

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

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 semester.

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 must maintain a 2.0 grade point average.

AA Degree

Required Courses

ACC 131	Principles of Accounting I	4
ACC 132	Principles of Accounting II	4
BUS 102	Intro to Business	3
BUS 185	Business Law I	3
BUS 220	Intro to International Business	3
ECN 120[1]	Principles of Macroeconomics	3
ECN 130[1]	Principles of Microeconomics	3

[1] *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	6
(6 credits + 3 credits for ECN 120 from above)	
Math & Sciences[2]	9
Humanities	9
Distributive[2]	6
(6 credits + 3 credits for ECN 130 from above)	
Electives[2]	2

[2] *Students should check with a DMACC advisor or an advisor at the four-year institution to which they plan to transfer before selecting math and science courses, distributive courses, elective and courses in other areas because certain courses are course prerequisites and/or admission requirements into the College of Business at different colleges and universities.*

Note: If the student completes BUS 220 with a grade of "C" or higher, the course will meet the Diversity Requirement. See the AA/AS section of this catalog for more information.

TOTAL CREDITS REQUIRED TO COMPLETE THE BUSINESS ADMINISTRATION AA DEGREE..... 64

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
BUS 902	Career Seminar	1
BUS 932	Internship	2
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 degree 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

COMPLETE AS DEGREE CORE REQUIREMENTS 28

Note: If the student completes BUS 220 with a grade of "C" or higher, the course will meet the Diversity Requirement. See the AA/AS section of this catalog for more information.

TOTAL CREDITS REQUIRED TO COMPLETE THE BUSINESS ADMINISTRATION AS DEGREE 66

Business Information Systems

The Business Information Systems program is intended for the student who is interested in an entry-level 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 PC-related programming fields, as well as the newer fields of electronic commerce and databases.

The BIS degree will enable a student to study a variety of different areas related to PC programming and associated 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 coursework 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 in this competitive field.

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 flexible course selection and exposure to a variety of programming skills and tools.

For more information about the Business Information Systems program, please visit our website at **www.dmacc.edu/programs/bis**.

Location: Ankeny, 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.
4. Successful completion of CSC 110 or equivalent.
5. Successful completion of ADM 105 or equivalent strongly recommended.

Students start any semester.

Graduation Requirements

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

Required Courses

Semester 1

CIS 125	Intro to Programming Logic w/Language	3
CIS 303	Introduction to Database	3
ACC 131	Principles of Accounting I	4

BUS 102	Intro to Business	3
MGT 248	Systems & Information Management	3

Semester 2

BCA 113	Computer Network Literacy	3
CIS 332	Database and SQL	3
AAS degree Core Math or Science Course		3
AAS degree Core Communications Course		3
Option 1–Language Package #1: Course #1		3

Semester 3

(It is recommended that students take one course as a Summer term course.)

CIS 338	SQL/Oracle	3
CIS 505	Structured Systems Analysis	4
AAS degree Core Social/Behavioral/Humanities Course		3
Option 1–Language Package #1: Course #2		3–4
Option 1–Language Package #2: Course #1		3
Option 2–Choose One Course		3

Semester 4

NET 612	Fundamentals of Network Security	3
AAS degree Core Distributed Course		3
Option 1–Language Package #2: Course #2		3–4
Option 2–Choose One Course		3
Option 2–Choose One Course		3

Option 1 Courses–Language Package–Students are required to complete any 2 Language Packages as shown below.

COBOL Programmer Package:

CIS 402	COBOL	Opt 1a	3
CIS 413	COBOL II	Opt 1a	4

Visual Basic Programmer Package:

CIS 604	Visual Basic	Opt 1b	3
CIS 612	Advanced Visual Basic	Opt 1b	3

Java Developer Package:

CIS 171	Java	Opt 1c	3
CIS 182	JSP and Servlets	Opt 1c	3

C++ Programmer Package:

CIS 161	C++	Opt 1d	3
CIS 164	Advanced C++	Opt 1d	3

Web Developer Package:

CIS 204	Intro to Website Development	Opt 1e	3
CIS 215	Server Side Web Programming	Opt 1e	3

C# Programmer Package:

CIS 169	C#	Opt 1f	3
CIS 174	Advanced C# Programming	Opt 1f	3

Option 2 Courses–Students are required to complete at least 3 of these courses.

BCA 250	Desktop Publishing	Opt 2	3
CIS 152	Data Structures	Opt 2	3
CIS 154	Computational Structures	Opt 2	3
CIS 247	Intro to XML	Opt 2	3
CIS 346	Database Design	Opt 2	3
CIS 588	Computer Organization	Opt 2	3
NET 715	Database Security & Auditing	Opt 2	3
CIS 720	Help Desk Operations	Opt 2	3
GRD 459	Illustrator	Opt 2	3
GRD 462	Computer Graphics II	Opt 2	3

In addition to the courses listed above that can fulfill Option 2, students may fulfill part of Option 2 by taking 6–7 credits from the courses listed under the Language Packages. This allows students to study an additional language or take individual courses from the packages. Students may not double-count courses for both Option 1 and Option 2.

TOTAL CREDITS REQUIRED TO COMPLETE THIS AAS DEGREE.....65

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.

For more information about the CAP–Chrysler program, please visit our website at **www.dmacc.edu/programs/automotive/chrysler**.

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 coursework as prescribed and maintain a 2.0 grade point average.

Required Courses

Semester 1

AUT 615	Auto Electricity/Electronics	4
AUT 114	Shop Fund & Minor Service	4
MAT 772	Applied Math	3
PSY 102	Human and Work Relations	3

Semester 2

AUT 524	Auto Brake Systems & Service	4
AUT 404	Basic Suspension & Steering	4
PHY 710	Technical Physics	3
ATC 320	Technical Internship I	3

Semester 3

ATC 330	Technical Internship II	3
AUT 163	Automotive Engine Repair	3
AUT 704	Auto Heating & AC	4

Semester 4

AUT 652	Adv Automotive Electricity	3
AUT 834	Automotive Fuel Systems	4
COM 703	Communication Skills	3
ATC 340	Technical Internship III	3

Semester 5

AUT 242	Basic Automotive Powertrain	6
AUT 842	Auto Computerized Eng Controls	4
ATC 350	Technical Internship IV	3

Semester 6

ATC 353	Chrysler Power Train Systems	6
ATC 356	Advanced Chrysler Systems	5

TOTAL CREDITS REQUIRED TO COMPLETE THIS AAS DEGREE.....75

Caterpillar Technology

The Caterpillar Technician program prepares students for a career in the area of diesel repair, focusing on Caterpillar products. Instruction is in the repair, maintenance and testing of diesel engines, power trains and other components of trucks and construction equipment.

This program is accredited by the AED Associated Equipment Distributors, **www.AEDNET.org**.

For more information about the Caterpillar program, please visit our website at **www.dmacc.edu/programs/cat**.

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 semester.
This program is taught between 8:00 a.m.–4:00 p.m.

Graduation Requirements

To earn a Caterpillar Technology AAS degree, a student must complete all coursework as prescribed and maintain a 2.0 grade point average.

Required Courses

DSL 356	Diesel Engines I	6
DSL 366	Diesel Engines II	6
DSL 546	Power Trains I	6
DSL 606	Hydraulics and Brakes	6
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
CAT 430	Caterpillar Fuel Systems	4
CAT 431	Caterpillar Failure Analysis	2
CAT 432	Caterpillar LS/PC Hydraulics	2
CAT 433	Caterpillar Service Information System	2
DSL 155	Advanced Electricity	4
CAT 434	Caterpillar Internship	4
CAT 435	Caterpillar Multi-Media	2
AUT 140	Welding for Automotive Mechanics	2

Option Courses–Select 1 Course from Each Option

COM 703	Communication Skills	Opt 1	3
ENG 105	Composition I	Opt 1	3
MAT 141	Finite Math	Opt 2	4
MAT 772	Applied Math	Opt 2	3
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 710	Technical Physics	Opt 4	3
PHY 106	Survey of Physics	Opt 4	4

TOTAL CREDITS REQUIRED TO COMPLETE THIS AAS DEGREE.....81

Chemical Dependency Counseling

(see Certificate Section, page 129)

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 educates future engineering technicians to help design, construct and maintain our civil engineering infrastructure: bridges, roads, dams, culverts, airports and more.

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.

For more information about the Civil Engineering program, please visit our website at **www.dmacc.edu/programs/civilengineering**.

Location: Boone

Program Entry Requirements

1. Complete an application for admission.
2. Satisfy the required assessment by taking the reading and English COMPASS test or equivalent.
3. Obtain minimum COMPASS algebra score of 46 or a minimum ACT math score of 19. (Scores may not be more than three years old.) These scores reflect the suggested level of math skills necessary to be successful in the field of Civil Engineering Technology. Students who do not currently meet the minimum scores required must meet with an advisor to develop an action plan for improving their math skills.
4. Attend any required information/registration session.

This program is designed to start in the Fall semester.

Students who desire to start in other semesters may be accepted, but may not graduate in four semesters due to the sequencing of coursework. If starting other than Fall, please contact the Civil Engineering Technology department.

Graduation Requirements

To earn a Civil Engineering Technology AAS degree, a student must complete all coursework as prescribed and maintain a 2.0 grade point average.

Required Courses

Semester 1–Select 1 Course from Option 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
Any AAS degree General Requirement Communications Course		Opt 1	3
Semester 2–Select 1 Course from Option 1			
CET 138	Construction I		3
CET 178	Automated Design I		4
CET 169	Survey II		4
ADM 221	Career Development Skills		2
Any AAS degree General Requirement Communications Course		Opt 1	3
Semester 3–Select the Course in Option 3			
CET 304	Field Coop	Opt 3	4
(With department approval, students may complete BOTH Option 4 courses OR BOTH Option 5 courses in place of Option 3.)			
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
Semester 4–Select 1 Course from Option 2			
CET 173	Highway Design I		4
CET 192	Statics		4
CET 219	Survey III		4
CET 244	Materials II		3
Any AAS degree General Requirement Social & Behavioral Science or Humanities Course		Opt 2	3
Semester 5			
CET 283	Highway Design II		4
CET 222	Soils and Foundations		3
CET 235	Construction II		3
CET 291	Structure Design and Construction		3
CET 278	Automated Design II		4

TOTAL CREDITS REQUIRED TO COMPLETE THIS AAS DEGREE.....73

Recommended Electives (not required for the AAS degree)

CAD 119	Intro to Computer-Aided Drafting	3
SPC 101	Fund of Oral Communication	3
MAT 130	Trigonometry	3
SRV 215	Intro to Land Information Systems	2

CNC Operator

(see Certificate Section, page 129)

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 and AGH 241 Sports Turf.

For more information about the Commercial Horticulture program, please visit our website at **www.dmacc.edu/programs/ag/commercialhorticulture**.

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 semester.

Graduation Requirements

To earn a Commercial Horticulture AAS degree, a student must complete all coursework as prescribed and maintain a 2.0 grade point average.

Fall Semester, Year 1—Select 1 Course from Option 1			
AGH 147	Soil Fertility for Hort.		1
AGH 159	Landscape Drafting		2
AGH 221	Principles of Horticulture		3
AGH 142	Construction, Safety & Maintenance		3
AGH 123	Woody Plant Materials		3
AGA 154	Fundamentals of Soil Science	Opt 1	3
AGH 146	Soil Science for Horticulture	Opt 1	3
Spring Semester, Year 1–Select 1 Course from Option 2			
AGH 132	Introduction to Greenhouse		3
AGH 111	Intro to Turfgrass Management		2
AGH 154	Residential Landscape Design		3
AGH 805	Horticulture Internship I		2
AGH 233	Plant Propagation I		3
MAT 141	Finite Mathematics	Opt 2	4
MAT 772	Applied Math	Opt 2	3
Summer Term, Year 1–Select 1 Course from Option 3			
AGH 155	Landscape Design II		2
AGH 251	Insects and Diseases		2
AGH 120	Herbaceous Plant Materials		3
AGH 262	Fruit and Vegetable Science	Opt 3	3
AGH 272	Nursery Production I	Opt 3	3

Fall Semester, Year 2–Select 1 Course from Option 6 and 1 Course from Option 7

Turf Maintenance students must also take the Option 4 Course.

Greenhouse Production students must also take the Option 5 Course.

AGH 283	Pesticide Application Certification		2
ADM 221	Career Development Skills		2
AAS Degree required Science course			3
AGH 211	Advanced Turfgrass Management	Opt 4	3
AGH 133	Greenhouse Production Techniques	Opt 5	3
ENG 105	Composition I	Opt 6	3
COM 703	Communication Skills	Opt 6	3
MGT 145	Human Relations in Business	Opt 7	3
PSY 111	Introduction to Psychology	Opt 7	3
PSY 102	Human and Work Relations	Opt 7	3

Spring Semester, Year 2–Select 2 Courses from Option 8

AGH 281	Arboriculture		3
AGH 292	Garden Center Management		3
AGH 815	Horticulture Internship II		2
ACC 111	Intro to Accounting	Opt 8	3
MKT 140	Selling	Opt 8	3
CSC 110	Intro to Computers	Opt 8	3

TOTAL CREDITS REQUIRED TO COMPLETE THE GREENHOUSE PRODUCTION EMPHASIS 71

TOTAL CREDITS REQUIRED TO COMPLETE 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 (Summer) Irrigation Systems	2
AGH 241 (Summer) Sports Turf	2
AGH 103 (Fall) Floral Design I	1
AGH 104 (Spring) Floral Design II	1

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.

For more information about the Computer-Aided Design Technology program, please visit our website at **www.dmacc.edu/programs/cad**.

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. Successful completion of CSC 110 (Introduction to Computers) or equivalent or approval of the program counselor.

Students start Fall semester.

Graduation Requirements

To earn a Computer-Aided Design Technology diploma or AAS degree, a student must complete all coursework as prescribed and maintain a 2.0 grade point average.

Semester 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

Semester 2

MAT 773	Applied Math II	3
CAD 242	Manufacturing Interfaces	3
ENG 105	Composition I	3
CAD 152	CAD Graphics II	6

Semester 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

Semester 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

Semester 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

Computer Applications and Computer Languages Certificates

(see Certificate Section, page 130)

Corel Painter

(see Certificate Section, page 130)

Criminal Justice–AA or AAS

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 AAS 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, which is required for the AAS degree.

For more information about the Criminal Justice program, please visit our website at **www.dmacc.edu/programs/criminaljustice**.

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 semester.

Graduation Requirements

To earn a Criminal Justice AA or AAS 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 Emphasis

Semester 1

CRJ 100	Intro to Criminal Justice	3
CRJ 109	Theories of Interviewing	3
Select 3 courses from AA Degree Core Requirements		9

Semester 2

CRJ 237	Criminal & Constitutional Law	3
Select 3 courses from AA Degree Core Requirements		9
Select 1 course from Option Courses		3

Semester 3

CRJ 111	Police and Society	3
Select 4 courses from AA Degree Core Requirements		12
Select 1 course from Option Courses		3

Semester 4

SOC 200	Minority Group Relations	3
Select 4 courses from AA Degree Core Requirements		12
Select a 1—credit course from Option Courses		1

AA Degree Core Requirements (mentioned above) are as follows:

Communications	9
Social & Behavioral Sciences	9

(Each Social & Behavioral Science course must be from a distinct discipline [different acronym].)

Math & Science	9
Humanities	9
Distributive	9

Option Courses–Select 7 Credits from Option 1

Students are strongly encouraged to talk to a full time Criminal Justice instructor about which option courses to take. Other CRJ courses may be eligible for use as option courses with department chair approval. Please consult chair prior to registering for those courses.

CRJ 107	Survey/Crim Justice Agencies	Opt 1	3
CRJ 128	Victimology	Opt 1	3
CRJ 141	Criminal Investigation	Opt 1	3
CRJ 178	E-Crime Investigative Methods	Opt 1	3
CRJ 179	White Collar Crime	Opt 1	1
CRJ 195	Crime Scene Investigation	Opt 1	4
CRJ 248	Scientific Investigation	Opt 1	3
CRJ 264	Effective Courtroom Testimony	Opt 1	1
CRJ 292	Police Phys Fitness & Conditioning	Opt 1	1
CRJ 293	Crim Justice Report Writing	Opt 1	1
CRJ 296	Latent Friction Ridge Evidence	Opt 1	1
CRJ 297	Death & Injury Investigations	Opt 1	1
CRJ 298	Impressions & Bloodstains	Opt 1	1
CRJ 301	Intro to Homeland Security	Opt 1	3
CRJ 330	Forensic Photography I	Opt 1	1

Note: If the student completes SOC 200 with a grade of "C" or higher, the course will meet the Diversity Requirement. See the AA/AS section of the DMACC catalog or the AA Degree PIB (Program Information Brief) for more information.

TOTAL MINIMUM CREDITS REQUIRED TO COMPLETE THE AA DEGREE—LAW ENFORCEMENT EMPHASIS..... 64

AAS Degree—Law Enforcement Emphasis

Semester 1

CRJ 100	Intro to Criminal Justice	3
CRJ 109	Theories of Interviewing	3
Select 2 courses from AAS General Degree Requirements		6
Select 1 course from Option Courses		3

Semester 2

CRJ 237	Criminal & Constitutional Law	3
CRJ 141	Criminal Investigation	3
Select 3 courses from AAS General Degree Requirements		9
Select 1 course from Option Courses		3

Semester 3

CRJ 111	Police and Society	3
CRJ 248	Scientific Investigation	3
SOC 200	Minority Group Relations	3
Select 2 courses from AAS General Degree Requirements		6

Semester 4

CRJ 932	Internship	3
Select 2 courses from AAS General Degree Requirements		6
Select 3 courses from Option Courses (one must be a 1-credit course)		7

AAS General Degree Requirements (mentioned above) are as follows:

Communications	3
Social & Behavioral Sciences/Humanities	3
Math or Science	3
Distributed	3

Option Courses–Select 13 Credits from Option 1

Students are strongly encouraged to talk to a full-time Criminal Justice instructor about which option courses to take. Other CRJ courses may be eligible for use as option courses with department chair approval. Please consult chair prior to registering for those courses.

CRJ 107	Survey/Crim Justice Agencies	Opt 1	3
CRJ 128	Victimology	Opt 1	3
CRJ 178	E-Crime Investigative Methods	Opt 1	3
CRJ 179	White Collar Crime	Opt 1	1
CRJ 195	Crime Scene Investigation	Opt 1	4
CRJ 264	Effective Courtroom Testimony	Opt 1	1
CRJ 292	Police Phys. Fitness & Condition	Opt 1	1
CRJ 293	Crim. Justice Report Writing	Opt 1	1
CRJ 296	Latent Friction Ridge Evidence	Opt 1	1
CRJ 297	Death & Injury Investigations	Opt 1	1
CRJ 298	Impressions & Bloodstains	Opt 1	1
CRJ 301	Intro to Homeland Security	Opt 1	3
CRJ 330	Forensic Photography I	Opt 1	1

TOTAL MINIMUM CREDITS REQUIRED TO COMPLETE THE AAS DEGREE—LAW ENFORCEMENT EMPHASIS..... 64

AA Degree—Corrections Emphasis

Semester 1

CRJ 100	Intro to Criminal Justice	3
CRJ 109	Theories of Interviewing	3
Select 3 courses from AA Degree Core Requirements		9

Semester 2

CRJ 238	Corrections & Constitutional Law	3
CRJ 229	Penology	3
Select 3 courses from AA Degree Core Requirements		9

Semester 3

CRJ 222	Correctional Treatment Methods	3
Select 4 courses from AA Degree Core Requirements		12
Select 1 course from Option Courses		3

Semester 4

SOC 200	Minority Group Relations	3
Select 4 courses from AA Degree Core Requirements		12
Select 1 course from Option Courses		1

AA degree Core Requirements (mentioned above) are as follows:

Communications	9
Social & Behavioral Sciences	9

(Each Social & Behavioral Science course must be from a distinct discipline [different acronym].)

Math & Science	9
Humanities	9
Distributive	9

Option Courses–Select 4 Credits from Option 1

Students are strongly encouraged to talk to a full-time Criminal Justice instructor about which option courses to take. Other CRJ courses may be eligible for use as option courses with department chair approval. Please consult chair prior to registering for those courses.

CRJ 107	Survey/Crim Justice Agencies	Opt 1	3
CRJ 128	Victimology	Opt 1	3
CRJ 137	Juvenile Law	Opt 1	3
CRJ 178	E-Crime Investigative Methods	Opt 1	3
CRJ 179	White Collar Crime	Opt 1	1
CRJ 195	Crime Scene Investigation	Opt 1	4
CRJ 264	Effective Courtroom Testimony	Opt 1	1
CRJ 292	Police Phys Fitness & Conditioning	Opt 1	1
CRJ 293	Crim Justice Report Writing	Opt 1	1
CRJ 330	Forensic Photography I	Opt 1	1
SOC 240	Criminology	Opt 1	3

Note: If the student completes SOC 200 with a grade of "C" or higher, the course will meet the Diversity Requirement. See the AA/AS section of the DMACC catalog or the AA Degree PIB (Program Information Brief) for more information.

TOTAL MINIMUM CREDITS REQUIRED TO COMPLETE THE AA DEGREE—CORRECTIONS EMPHASIS..... 64

AAS Degree—Corrections Emphasis

Semester 1

CRJ 100	Intro to Criminal Justice	3
CRJ 109	Theories of Interviewing	3
Select 2 courses from AAS General Degree Requirements		6
Select 1 course from Option Courses		3

Semester 2

CRJ 238	Corrections and Constitutional Law	3
CRJ 229	Penology	3
Select 3 courses from AAS General Degree Requirements		9
Select 1 course from Option Courses		3

Semester 3

CRJ 222	Correctional Treatment Methods	3
SOC 200	Minority Group Relations	3
Select 2 courses from AAS General Degree Requirements		6
Select 1 course from Option Courses		3

Semester 4

CRJ 932	Internship	3
Select 2 courses from AAS General Degree Requirements		6
Select 3 courses from Option Courses (one must be a 1-credit course)		7

AAS General Degree Requirements (mentioned above) are as follows:

Communications	3
Social & Behavioral Sciences/Humanities	3
Math or Science	3
Distributed	3

Option Courses–Select 16 Credits from Option 1

Students are strongly encouraged to talk to a full-time Criminal Justice instructor about which option courses to take. Other CRJ courses may be eligible for use as option courses with department chair approval. Please consult chair prior to registering for those courses.

CRJ 107	Survey/Crim Justice Agencies	Opt 1	3
CRJ 128	Victimology	Opt 1	3
CRJ 137	Juvenile Law	Opt 1	3

CRJ 178	E-Crime Investigative Methods	Opt 1	3
CRJ 179	White Collar Crime	Opt 1	1
CRJ 195	Crime Scene Investigation	Opt 1	4
CRJ 264	Effective Courtroom Testimony	Opt 1	1
CRJ 292	Police Phys. Fitness & Condition.	Opt 1	1
CRJ 293	Crim. Justice Report Writing	Opt 1	1
CRJ 330	Forensic Photography I	Opt 1	1
SOC 240	Criminology	Opt 1	3

TOTAL MINIMUM CREDITS REQUIRED TO COMPLETE THE AAS DEGREE—CORRECTIONS EMPHASIS 64

AA Degree—Electronic Crime Emphasis

Semester 1

CRJ 100	Intro to Criminal Justice	3
NET 123	Computer Hardware Basics	4
Select 3 courses from AA Degree Core Requirements		9

Semester 2

CRJ 178	E-Crime Investigative Methods	3
CRJ 167	Operating Sys. for Forensics	3
Select 3 courses from AA Degree Core Requirements		9

Semester 3

CRJ 176	Computer Forensics I	3
Select 4 courses from AA Degree Core Requirements		12

Semester 4

Select 5 courses from AA Degree Core Requirements	15
Select 1 course from Option Courses	3

AA Degree Core Requirements (mentioned above) are as follows:

Communications	9
Social & Behavioral Sciences (Each course must be from a distinct discipline [different acronym].)	9
Math & Science	9
Humanities	9
Distributive	9

Option Courses–Select 3 Credits from Option 1

Students are strongly encouraged to talk to a full time Criminal Justice instructor about which option courses to take. Other CRJ courses may be eligible for use as option courses with department chair approval. Please consult chair prior to registering for those courses.

ACC 111	Intro to Accounting	Opt 1	3
ACC 131	Principles of Accounting I	Opt 1	4
CRJ 107	Survey/Crim Justice Agencies	Opt 1	3
CRJ 109	Theories of Interviewing	Opt 1	3
CRJ 128	Victimology	Opt 1	3
CRJ 141	Criminal Investigation	Opt 1	3
CRJ 179	White Collar Crime	Opt 1	1
CRJ 195	Crime Scene Investigation	Opt 1	4
CRJ 237	Criminal & Constitutional Law	Opt 1	3
CRJ 248	Scientific Investigation	Opt 1	3
CRJ 264	Effective Courtroom Testimony	Opt 1	1
CRJ 267	E-Discovery I - Overview	Opt 1	1
CRJ 268	E-Discovery II - Data Collect	Opt 1	1
CRJ 269	E-Discovery III - Data Process	Opt 1	1
CRJ 276	Computer Forensics II	Opt 1	3
CRJ 277	Adv Digital Forensic Methods	Opt 1	4
CRJ 278	Apple/Macintosh Forensics	Opt 1	1
CRJ 279	Malware Forensics I	Opt 1	1
CRJ 292	Police Phys Fitness & Conditioning	Opt 1	1
CRJ 293	Crim Justice Report Writing	Opt 1	1
CRJ 330	Forensic Photography I	Opt 1	1
SOC 200	Minority Group Relations	Opt 1	3

Note: To complete this program with an Electronic Crime Emphasis, you must meet the Diversity Requirement with a grade of "C" or higher. See the AA/AS section of the DMACC catalog or the AA Degree PIB (Program Information Brief) for more information about which courses can count toward this requirement.

TOTAL MINIMUM CREDITS REQUIRED TO COMPLETE THE AA DEGREE—ELECTRONIC CRIME EMPHASIS..... 64

AAS Degree—Electronic Crime Emphasis

Semester 1

CRJ 100	Intro to Criminal Justice	3
CRJ 109	Theories of Interviewing	3
CRJ 167	Operating Sys. for Forensics	3
NET 123	Computer Hardware Basics	4
Select 1 course from AAS General Degree Requirements		3

Semester 2

CRJ 178	E-Crime Investigative Methods	3
CRJ 176	Computer Forensics I	3
Select 3 courses from AAS General Degree Requirements		9

Semester 3—Select 1 Course from Option 1 and 1 Course from Option 2

CRJ 276	Computer Forensics II		3
SOC 200	Minority Group Relations		3
NET 213	CISCO Networking	Opt 1	4
NET 484	NETPLUS Certification	Opt 1	4
MAT 157	Statistics	Opt 2	4
MAT 162	Prin. of Business Statistics	Opt 2	4
Select 1 course from AAS General Degree Requirements			3

Semester 4

CRJ 277	Adv. Digital Forensic Methods	4
CRJ 932	Internship	3
Select 1 course from AAS General Degree Requirements		3
Select 2 courses from Option 3 Courses		6

AAS General Degree Requirements (mentioned above) are as follows:

Communications	3
Social & Behavioral Sciences/Humanities	3
Math or Science	3
Distributed	3

Option 3 Courses—Select 6 Credits from Option 3

Students are strongly encouraged to talk to a full time Criminal Justice instructor about which option courses to take. Other CRJ courses may be eligible for use as option courses with department chair approval. Please consult chair prior to registering for those courses.

ACC 111	Intro to Accounting	Opt 3	3
ACC 131	Principles of Accounting I	Opt 3	4
CRJ 107	Survey Crim. Justice Agencies	Opt 3	3

CRJ 128	Victimology	Opt 3	3
CRJ 141	Criminal Investigation	Opt 3	3
CRJ 179	White Collar Crime	Opt 3	1
CRJ 195	Crime Scene Investigation	Opt 3	4
CRJ 237	Criminal & Constitutional Law	Opt 3	3
CRJ 248	Scientific Investigation	Opt 3	3
CRJ 264	Effective Courtroom Testimony	Opt 3	1
CRJ 267	E-Discovery I - Overview	Opt 3	1
CRJ 268	E-Discovery II - Data Collect	Opt 3	1
CRJ 269	E-Discovery III - Data Process	Opt 3	1
CRJ 278	Apple/Macintosh Forensics	Opt 3	1
CRJ 279	Malware Forensics	Opt 3	1
CRJ 292	Police Phys. Fitness & Condition	Opt 3	1
CRJ 293	Crim. Justice Report Writing	Opt 3	1
CRJ 330	Forensic Photography I	Opt 3	1

TOTAL MINIMUM CREDITS REQUIRED TO COMPLETE THE AAS DEGREE—ELECTRONIC CRIME EMPHASIS..... 64

AA Degree—Homeland Security Emphasis

Semester 1

CRJ 100	Intro to Criminal Justice	3
CRJ 109	Theories of Interviewing	3
Select 3 courses from AA Degree Core Requirements		9

Semester 2

CRJ 237	Criminal & Constitutional Law	3
CRJ 301	Intro to Homeland Security	3
Select 4 courses from AA Degree Core Requirements		12

Semester 3

CRJ 303	Intel Analysis & Sec Mgmt	3
Select 4 courses from AA Degree Core Requirements		12

Semester 4

CRJ 302	Transportation & Border Sec	3
Select 4 courses from AA Degree Core Requirements		12
Select 1 course from Option 1 Courses		1

AA Degree Core Requirements (mentioned above) are as follows:

Communications	9
Social & Behavioral Sciences (Each course must be from a distinct discipline [different acronym].)	9
Math & Science	9
Humanities	9
Distributive	9

Option Courses

Students are strongly encouraged to talk to a full-time Criminal Justice instructor about which option courses to take. Other CRJ courses may be eligible for use as option courses with department chair approval. Please consult chair prior to registering for those courses.

CRJ 107	Survey of Crim. Justice Agencies	Opt 1	3
CRJ 111	Police and Society	Opt 1	3
CRJ 128	Victimology	Opt 1	3
CRJ 141	Criminal Investigation	Opt 1	3
CRJ 178	E-Crime Investigative Methods	Opt 1	3
CRJ 179	White Collar Crime	Opt 1	1
CRJ 195	Crime Scene Investigation	Opt 1	4
CRJ 264	Effective Courtroom Testimony	Opt 1	1
CRJ 292	Police Phys. Fitness & Condition.	Opt 1	1
CRJ 293	Crim. Justice Report Writing	Opt 1	1
CRJ 330	Forensic Photography I	Opt 1	1
POL 129	Political Terrorism	Opt 1	3
SOC 200	Minority Group Relations	Opt 1	3

Note: To complete this program with a Homeland Security Emphasis, you must meet the Diversity Requirement with a grade of "C" or higher. See the AA/AS section of the DMACC catalog or the AA Degree PIB (Program Information Brief) for more information about which courses can count toward this requirement.

TOTAL MINIMUM CREDITS REQUIRED TO COMPLETE THE AA DEGREE—HOMELAND SECURITY EMPHASIS..... 64

AAS Degree—Homeland Security Emphasis

Semester 1

CRJ 100	Intro to Criminal Justice	3
CRJ 109	Theories of Interviewing	3
Select 2 courses from AAS General Degree Requirements		6
Select 1 course from Option Courses		3

Semester 2

CRJ 237	Criminal & Constitutional Law	3
CRJ 301	Intro to Homeland Security	3
Select 3 courses from AAS General Degree Requirements		9
Select 1 course from Option Courses		3

Semester 3

CRJ 303	Intel Analysis & Sec Mgmt	3
SOC 200	Minority Group Relations	3
Select 2 courses from AAS General Degree Requirements		6
Select 1 course from Option 1 Courses		3

Semester 4

CRJ 302	Transportation & Border Sec	3
Select 2 courses from AAS General Degree Requirements		6
Select 3 courses from Option Courses (one must be a 1-credit course)		7

AAS General Degree Requirements (mentioned above) are as follows:

Communications	3
Social & Behavioral Sciences/Humanities	3
Math or Science	3
Distributed	3

Option Courses–Select 16 Credits from Option 1

Students are strongly encouraged to talk to a full-time Criminal Justice instructor about which option courses to take. Other CRJ courses may be eligible for use as option courses with department chair approval. Please consult chair prior to registering for those courses.

CRJ 107	Survey/Crim Justice Agencies	Opt 1	3
CRJ 111	Police and Society	Opt 1	3
CRJ 128	Victimology	Opt 1	3
CRJ 141	Criminal Investigation	Opt 1	3
CRJ 178	E-Crime Investigative Methods	Opt 1	3
CRJ 179	White Collar Crime	Opt 1	1
CRJ 195	Crime Scene Investigation	Opt 1	4
CRJ 264	Effective Courtroom Testimony	Opt 1	1

CRJ 292	Police Phys. Fitness & Condition.	Opt 1	1
CRJ 293	Crim. Justice Report Writing	Opt 1	1
CRJ 330	Forensic Photography I	Opt 1	1
POL 129	Politics of Terrorism	Opt 1	3

TOTAL MINIMUM CREDITS REQUIRED TO COMPLETE THE AAS DEGREE—HOMELAND SECURITY EMPHASIS..... 64

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 Culinary Arts program prepares students to enter culinary positions with hotels, restaurants, clubs or institutions. 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.*

Semesters A and B are the first two semesters 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 Semester A their first semester and then complete Semester B in their second semester. Students in group B take the courses listed below under Semester B their first semester and then complete Semester A in their second semester. All students complete the same courses in Semesters 3, 4 and 5.

Upon successful completion of semesters A through 5, students will receive a Culinary Arts AAS degree. Students with a shorter-semester educational goal may receive a diploma upon completion of semesters A, B and 3. The first three semesters must be completed before enrollment is allowed in semesters 4 and 5.

Wait List Class Recommendations

While a student is on the wait list for the Culinary Arts program, it is highly recommended that they complete the following courses:

1. MGT 145 Human Relations in Business
2. SPC 101 Fund. of Oral Communication or SPC 126 Interpersonal & Small Group Communication
3. COM 703 Communication Skills or ENG 105 Composition I or any other AAS Communications class
4. BUS 112 Business Math or MAT 772 Applied Math or any other AAS math course

These courses apply toward requirements needed to complete the Culinary Arts degree.

For more information about the Culinary Arts program, please visit our website at **www.dmacc.edu/programs/culinary**.

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 semester.

(Most classes in this program meet in the daytime hours, but a few will involve some evenings and weekends.)

Graduation Requirements

To earn a Culinary Arts AAS degree or diploma, a student must complete all coursework as prescribed and maintain a 2.0 grade point average.

Semester A–Select 1 Course from Option 1

HCM 100	Sanitation and Safety (lec)		2
HCM 104	Sanitation and Equipment Lab		1
HCM 143	Food Preparation I (lec)		3
HCM 144	Food Preparation I Lab		3
HCM 320*	Intro to Hospitality Industry (lec)		2
SPC 101*	Fund of Oral Communication	Opt 1	3
Any SPC Course designated as AAS Core (see paragraph above for explanation)		Opt 1	3

Semester B–Select 1 Course from Option 2 and 1 Course from Option 3

HCM 200	Dining Room Service (lec)		2
HCM 231	Nutrition (lec)		2
HCM 510	Work Experience		3
MGT 145	Human Relations in Business		3
COM 703	Communication Skills	Opt 2	3
Any ENG Course designated as AAS Core		Opt 2	3
BUS 112	Business Math	Opt 3	3
MAT 772	Applied Math	Opt 3	3
Any MAT or BUS Course designated as AAS Core		Opt 3	3

Semester 3

HCM 152	Food Preparation II (lec)	2
HCM 153	Food Preparation II Lab	2
HCM 110	Baking (lab)	2
HCM 270	Garde Manger (lab)	2

TOTAL CREDITS REQUIRED TO COMPLETE THE DIPLOMA.....38

Semester 4

HCM 250	Purchasing (lec)	2
HCM 173	International Cuisine (lec)	2
HCM 172	International Cuisine (lab)	3
HCM 210	Dining Management (lec)	2
HCM 167	Culinary Skills Development (lab)	3

Semester 5

HCM 240	Menu Planning & Design (lec)	2
HCM 175	International Cuisine Lab II	3
HCM 124	Advanced Baking/Buffet Decorating (lab)	2
HCM 169	Culinary Cuisine Lab	4
HCM 168	Advanced Culinary Cuisine (lec)	2
HCM 300	Beverage Management (lec)	2
ADM 221	Career Development Skills	2

TOTAL CREDITS REQUIRED TO COMPLETE THE AAS DEGREE.....67

Data Entry I and Database Specialist Certificates

(see Certificate Section, page 130 & 131)

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, chairside procedures, radiology, 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.

For more information about the Dental Assistant program, please visit our website at **www.dmacc.edu/programs/dentalassistant**.

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 NWPM with no more than five 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 semester.

Graduation Requirements

To earn a Dental Assistant diploma, a student must complete all coursework as prescribed and maintain a 2.0 grade point average.

Semester 1

DEA 253	Dental Science I	4
DEA 256	Dental Anatomy	2
DEA 424	Dental Materials Lab	1
DEA 507	Principles of Dental Assisting	6
DHY 221	Dental Materials	2
DHY 161	Oral Radiology	3

Semester 2

DEA 321	Dental Radiography II	2
DEA 591	Dental Assisting Seminar	1
DEA 576	Dental Assisting Clinic I	3
DEA 263	Dental Science II	2
DEA 615	Clinical Dental Assisting	5
DEA 702	Dental Office Procedures	2
ENG 105	Composition I	3

Semester 3

DEA 297	Ethics/Jurisprudence Seminar		1
DEA 577	Dental Assisting Clinic II		4
SPC 101	Fund of Oral Communication	Opt 1	3
SPC 126	Interpersonal & Small Grp Comm	Opt 1	3
PSY 102	Human and Work Relations	Opt 2	3
PSY 111	Introduction to Psychology	Opt 2	3

Graduates may immediately sit for the National Board exam to become a Certified Dental Assistant.

TOTAL CREDITS REQUIRED TO COMPLETE THIS DIPLOMA.....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, and on 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.

For more information about the Dental Hygiene program, please visit our website at **www.dmacc.edu/programs/dentalhygiene**.

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 186 Microbiology 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. Support courses are:

CHM 132 Introduction to Organic/Biochemistry, PSY 111 Introduction to Psychology, SOC 110 Introduction to Sociology, ENG 105 Composition I, SPC 101 Fundamentals of Oral Communication OR SPC 126 Interpersonal & Small Group Communication

When there is no completion of any remaining support courses for three years from the date the student's name went on the Wait List, the applicant will be deleted from the list.

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 semester of the Dental Hygiene program, all required courses in the current semester must be completed with a grade of "C" or better.

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.

Semester 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 Anatomy Anatomical Sciences		4
DHY 161	Dental Radiography		3

Semester 2–Select the Option 1 Course or Both Option 2 Courses

DHY 181	Dental Hygiene I		2
DHY 182	Clinical Dental Hygiene I		4
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

Semester 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

Semester 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

Semester 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 AAS DEGREE.....77

Diemaking

(See Tool & Diemaking, page 117)

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.

For more information about the Diesel Technology program, please visit our website at **www.dmacc.edu/programs/diesel**.

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 semester. This program is taught between 8:00 a.m. and 4:00 p.m.

Graduation Requirements

To earn a Diesel Technology diploma or AAS degree, a student must complete all coursework 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 606	Hydraulics and Brakes		6
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 Bus	Opt 3	3
PSY 111	Introduction to Psychology	Opt 3	3
PSY 102	Human & Work Relations	Opt 3	3
SOC 110	Introduction to Sociology	Opt 3	3

TOTAL CREDITS REQUIRED TO COMPLETE THE DIPLOMA..... 46

Required Courses–AAS

DSL 356	Diesel Engines I	6
DSL 366	Diesel Engines II	6
DSL 546	Power Trains I	6
DSL 606	Hydraulics and Brakes	6
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 438	Diesel Fuel Systems	5
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	3
PHY 710	Technical Physics	Opt 4	3

TOTAL CREDITS REQUIRED TO COMPLETE THE AAS DEGREE..... 80

Dietary Manager

(see Certificate Section, page 131)

Digital Forensic Investigation

(see Certificate Section, page 131)

Digital Illustration

(see Certificate Section, page 131)

Digital Publishing

(see Certificate Section, page 132)

Early Childhood Education

(see Certificate Section, page 132)

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 requirements are competent to assume a position of responsibility in early childhood education.

Coursework introduces students to the early childhood field and includes child growth and development, guidance techniques, curriculum planning and assessment, infant and toddler care, and health, safety and nutrition in the context of families and communities.

Required coursework includes participation in the Des Moines Area Community College Child Development Center. Essential skills needed to successfully complete the required lab courses include the ability to maintain awareness of active children in a group setting, to demonstrate stamina while engaging in multiple tasks and activities with children, to respond quickly and appropriately to children's changing needs and to keep children safe.

When coursework is completed, students will assume positions as assistant teachers or caregivers 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. Coursework from the Early Childhood certificate of specialization transfers into the ECE diploma; coursework from the diploma may be applied to the ECE Associate degree.

Current health and immunization records are required for each student. In addition, DHS criminal history record checks and fingerprinting will be required. 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.

Students who possess the following personal characteristics are generally successful in the Early Childhood program:

1. Effective written and verbal communication skills
2. Physical stamina
3. Ability to make quick decisions
4. Ability to establish positive relationships with diverse people
5. Responsibility and dependability

For more information about the Early Childhood Education program, please visit our website at **www.dmacc.edu/programs/earlychildhood/diploma**.

Location: Ankeny

Selected courses in this program are offered at other campuses and online.

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 semester.

Graduation Requirements

To earn an Early Childhood Education diploma, a student must complete all coursework 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 ensure 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.

Semester 1

ECE 103	Intro to Early Childhood Ed	3
ECE 158	Early Childhood Curriculum I	3
ECE 243	Early Childhood Guidance	3
ECE 343	Early Childhood Guidance Lab	1
ECE 133	Child Health, Safety & Nutrition	3
*Select 1 Course from AS or AAS degree Core Communications		3
		Total 16

Semester 2

ECE 159	Early Childhood Curriculum II	3
ECE 359	ECE Curriculum II Lab	1
ECE 170	Child Growth & Development	3
ECE 221	Infant/Toddler Care and Educ.	3
*Select 1 Course from AS or AAS degree Core Math & Sciences		3
*Select 1 Course from AS or AAS degree Core Social & Behavioral Sciences		3
		Total 16

Semester 3

ECE 262	Early Childhood Field Exper	3
ECE 944	Field Experience Seminar	1
		Total 4

TOTAL CREDITS REQUIRED TO COMPLETE THIS DIPLOMA.....36

**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.*

Early Childhood Education–Associate

The Early Childhood Education–Associate program is designed to extend and expand on those skills developed in the Early Childhood Education diploma program and to broaden the student's background in general education. Required coursework includes participation in the DMACC Child Development Center. Essential skills needed to successfully complete the required lab courses include the ability to maintain awareness of active children in a group setting, to demonstrate stamina while engaging in multiple tasks and activities with children, to respond quickly and appropriately to children's changing needs and to keep children safe. Further competence in early childhood education is developed through coursework in building relationships between home, program and community, administration of programs for children and a community-based internship.

Students completing the Early Childhood Education–Associate in Science degree may take one of the many jobs available in early childhood education, including lead, assistant or associate 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 teach in a Pre-K through third-grade setting will need to transfer to a teacher licensure institution and should contact the Early Childhood Education program chair or program counselor regarding transfer agreements with four-year institutions.

Current health and immunization records are required for each student. In addition, DHS criminal history record checks and fingerprinting are required. 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.

Students who possess the following personal characteristics are generally successful in the Early Childhood program:

1. Effective written and verbal communication skills
2. Physical stamina
3. Ability to make quick decisions
4. Ability to establish positive relationships with diverse people
5. Responsibility and dependability

For more information about the Early Childhood Education program, please visit our website at **www.dmacc.edu/programs/earlychildhood/asdegree**.

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 Fall or Spring semester.

Graduation Requirements

To earn an Early Childhood Education AS degree, a student must complete the standard core requirements for the degree plus the Early Childhood Education program required courses and options and maintain a 2.50 grade point average.

Recommended Course of Study

A recommended course of study, listed below, has been created to ensure 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.

Semester 1

ECE 103	Intro to Early Childhood Ed	3
ECE 158	Early Childhood Curriculum I	3
ECE 243	Early Childhood Guidance	3
ECE 343	Early Childhood Guidance Lab	1
ECE 133	Child, Health, Safety & Nutrition	3
Select 1 Course from AS degree Core Communications		3
		Total 16

Semester 2

ECE 221	Infant/Toddler Care and Educ.	3
ECE 159	Early Childhood Curriculum II	3
ECE 359	ECE Curriculum II Lab	1
ECE 170	Child Growth & Development	3
Select 1 Course from AS degree Core Math		3
Select 1 Course from AS degree Core Communications		3
		Total 16

Semester 3

ECE 262	Early Childhood Field Exper	3
ECE 290	Early Childhood Program Admin	3
ECE 944	Field Experience Seminar	1
Select 4 Distributed Credits from AS degree Core		4
Select 1 Course from AS degree Core Social & Behavioral Sciences		3
Select 1 Course from AS degree Core Communications		3
		Total 17

Semester 4

ECE 932	Early Childhood Internship	2
ECE 215	Home, School and Comm. Relations	3
Select 1 Course from AS degree Core Humanities		3
Select 1 Course from AS degree Core Sciences		3
Select 1 Course from AS degree Core		

Social & Behavioral Sciences	3
Select 1 Elective Course	3
Total	**17**

Note: To complete this program, you must meet the Diversity Requirement with a grade of "C" or higher. See the AA/AS section of this catalog for more information about which courses can count toward this requirement.

TOTAL CREDITS REQUIRED TO COMPLETE THIS AS DEGREE.....66

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 Controllers.

For more information about the Electrical Construction Trades program, please visit our website at **www.dmacc.edu/programs/elecontrades**.

Location: Newton

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 Fall semester.

Graduation Requirements

To earn an Electrical Construction Trades diploma, a student must complete all coursework as prescribed and maintain a 2.0 grade point average.

Semester 1

MAT 772	Applied Math	3
CON 337	Construction Blueprint Reading	1
ELT 303	Principles of Electricity	3
ELT 147	NEC Residential	3
ELT 148	NEC Residential Lab	3

Semester 2

ELT 172	NEC Commercial/Industrial	3
ELT 173	NEC Commercial/Industrial Lab	4
ELT 131	Motor Controls	3
MAT 773	Applied Math II	3
COM 703	Communication Skills	3

Semester 3

ELT 217	Advanced Motor Controls	3
ELT 178	Electrical Grounding	2
ELT 123	Programmable Controllers	3
MGT 145	Human Relations in Business	3

TOTAL CREDITS REQUIRED TO COMPLETE THIS DIPLOMA 40

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 fundamental technologies and system applications. Upon program completion, students may seek employment maintaining plant equipment with area manufacturers, or with companies that produce process control or robotic devices.

For more information about the Electronics, Robotics & Automation program, please visit our website at **www.dmacc.edu/programs/automationrobotics**.

Location: Ankeny

Program Entry Requirements

1. Complete an application for admission.
2. Attend any required information/registration session.
3. Satisfy the required assessment by taking the reading and English COMPASS test or equivalent.
4. Minimum COMPASS algebra score of 46, or minimum ACT math score of 19, or completion of MAT 063 with a grade of "C" or higher.
5. Successful completion of CSC 110 Intro to Computers or equivalent or approval of the program counselor.

Students start Fall semester.

Graduation Requirements

To earn an Electronics, Robotics & Automation AAS degree, a student must complete all coursework as prescribed and maintain a 2.0 grade point average.

Semester 1–Select 1 Course from Option 1

ELT 385	Electric Circuit Analysis I		4
ELT 386	Electric Circuit Analysis I Lab		2
ELT 389	Fabrication Techniques		3
ELT 108	Math for Electronics & Computers		4
ENG 105	Composition I	Opt 1	3
COM 703	Communication Skills	Opt 1	3

Semester 2–Select 1 Course from Option 2

ELT 325	Digital Electronics	3
ELT 326	Digital Electronics Lab	3
ELT 387	Electric Circuit Analysis II	3

ELT 388	Elec. Circuit Analysis II Lab		2
ELT 181	Adv. Math for Electronics Technicians		1
NET 213	CISCO Networking	Opt 2	4
NET 484	NETPLUS Certification	Opt 2	4

Semester 3

CIS 130	Computer Programming		3
ELT 131	Motor Controls		3
ELT 126	Industrial Electronics		2
ELT 143	Mechanisms		3

Semester 4–Select 1 Course from Option 3

ELT 614	Microproc. & Microcontrollers		3
ELT 123	Programmable Controllers		3
ELT 721	Robotics		3
MGT 145	Human Relations in Business	Opt 3	3
PSY 111	Intro to Psychology	Opt 3	3
PSY 102	Human & Work Relations	Opt 3	3
SOC 110	Introduction to Sociology	Opt 3	3
Select 1 Course from AAS degree Core Social & Behavioral Sciences/Humanities			3–5

Semester 5

ELT 791	Hydraulics and Pneumatics		3
ELT 792	Hydraulics and Pneumatics Lab		2
ELT 643	Process Control Instrument		3
ELT 644	Process Control Instrument Lab		2
ELT 125	Advanced PLC		3
ELT 870	Electronic Capstone Project		3

Option 4: Technical Electives—Select 3 credits minimum

May be scheduled any semester.

ELT 725	Intro. to Flexible Manufacturing		2
CAD 119	Intro to Computer-Aided Drafting		3
CAD 139	Intro to CAD/CAM		3
MFG 121	Machine Trade Printreading I		2
MFG 140	Geometric Dimension/Tolerance		1
MFG 172	Related Welding-Indust Maint		3
MFG 330	CNC Mill Operations Theory		1
MFG 331	CNC Mill Operations Lab		2
MFG 350	CNC Lathe Operations Theory		1
MFG 351	CNC Lathe Operations Lab		2
MFG 502	Intro Statistical Process Cntl		3
MFG 521	Measuring Devices-SPC		1

The following courses may also be completed to fulfill the Option 4 requirement, provided students obtain instructor permission after an evaluation of course prerequisites and student educational background.

MFG 171	Manufacturing Welding I		2
MFG 381	EDM Fundamentals		3
CIS 178	JAVA Programming I		2
CIS 179	JAVA Programming II		2
CIS 604	Visual Basic		3
CIS 612	Advanced Visual Basic		3
WEL 111	Welding Blueprint Reading		3
WEL 150	Arc Welding I (SMAW)		2
WEL 181	Gas Metal Arc Welding		2
MLW 440	Blueprint Reading and Layout		3

TOTAL CREDITS REQUIRED TO COMPLETE THIS AAS DEGREE.....77

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 semester 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.

For more information about the Electronics Systems Servicing Technology program, please visit our website at **www.dmacc.edu/programs/esst**.

Location: Ankeny

Program Entry Requirements

1. Complete an application for admission.
2. Attend any required information/registration session.
3. Satisfy the required assessment by taking the reading and English COMPASS test or equivalent.
4. Minimum COMPASS algebra score of 46, or minimum ACT math score of 19, or completion of MAT 063 with a grade of "C" or higher.
5. Successful completion of CSC 110 Intro to Computers or equivalent or approval of the program counselor.

Students start Fall semester.

Graduation Requirements

To earn an Electronics Systems Servicing Technology AAS degree, a student must complete all coursework as prescribed and maintain a 2.0 grade point average.

Semester 1–Select 1 Course from Option 1

ELT 385	Electric Circuit Analysis I	4
ELT 386	Electric Circuit Analysis I Lab	2
ELT 389	Fabrication Techniques	3

ELT 108	Math for Electronics & Computers		4
ENG 105	Composition I	Opt 1	3
COM 703	Communication Skills	Opt 1	3
Semester 2–Select 1 Course from Option 2			
ELT 325	Digital Electronics		3
ELT 326	Digital Electronics Lab		3
ELT 387	Electric Circuit Analysis II		3
ELT 388	Elec. Circuit Analysis II Lab		2
ELT 181	Adv. Math for Electronics Technicians		1
NET 213	CISCO Networking	Opt 2	4
NET 484	NETPLUS Certification	Opt 2	4
Semester 3–Select 1 Course from Option 3			
ELT 131	Motor Controls		3
ELT 143	Mechanisms		3
NET 123	Computer Hardware Basics		4
MGT 145	Human Relations in Business	Opt 3	3
PSY 111	Introduction to Psychology	Opt 3	3
PSY 102	Human & Work Relations	Opt 3	3
SOC 110	Introduction to Sociology	Opt 3	3
Semester 4			
ELT 474	Communications Systems		3
ELT 475	Communications Systems Lab		3
ELT 470	Bus. Imaging & Security Applic.		4
ELT 471	Bus. Imaging & Security App. Lab		3
Select 1 Course from AAS degree Core Social & Behavioral Sciences/Humanities			3–5
Semester 5			
ELT 484	Medical Electronics Systems		4
ELT 485	Medical Electronics Systems Lab		3
ELT 816	Systems Troubleshooting		2
ELT 817	Systems Troubleshooting Lab		3
ELT 932	Internship		3

TOTAL CREDITS REQUIRED TO COMPLETE THIS AAS DEGREE.....76

Emergency Medical Technician

(see Certificate Section, page 132)

Engineering

Students planning to major in an engineering field 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.

Enology

(see Certificate Section, page 133)

Entrepreneurship

(see Certificate Section, page 133)

Entrepreneurship

An increasing number of people are realizing the rewards and challenges of owning their own businesses. The Entrepreneurship program will help you create or improve your plans to be one of them. Although you may have the technical skills, or be very knowledgeable about a certain industry, the entrepreneurship program emphasizes how your passion and skills tie into the day-to-day operation of a business. In addition, this flexible program is designed to affect students in their work environments in the real world, whether they start a business or not! This is accomplished through various innovative marketing strategies, current creative financing methods and employee development skills. The program also emphasizes personal development in accounting, supervision, communication and relationship management. To make it convenient for today's busy students, courses are being offered during the day, evening and online.

For more information about the Entrepreneurship program, please visit our website at **www.dmacc.edu/programs/entrepreneurship**.

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 semester.

Graduation Requirements

To earn an Entrepreneurship diploma, a student must complete all coursework 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 131	Small Business Management Strategies	3
BUS 138	Small Business Marketing	3
BUS 141	Small Business Start-Up	3
BUS 148	Small Business Management	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 111	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 DIPLOMA.....38

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.

For more information about the Environmental Science program, please visit our website at **www.dmacc.edu/programs/environmental**.

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 semester.

Graduation Requirements

To earn an Environmental Science AA degree, a student must complete all coursework as prescribed and maintain a 2.0 grade point average.

Semester 1 (Fall)

ENV 115	Environmental Science	3
ENV 116	Environmental Science Lab	1
BIO 112	General Biology I	4
*BIO 138	Field Ecology	3
*ENG 105	Composition I	3
*Select 1 AA degree Core Social & Behavioral Sciences Course		3
		Total 17

Semester 2 (Spring)

ENV 145	Conservation Biology	4
BIO 113	General Biology II	4
ENG 106	Composition II	3
ENV 103	Sustainable Living	1
*Select 1 AA degree Core Humanities Course		3
		Total 15

Semester 3 (Fall)—Select 1 Course from Option 1 for a Minimum of 3 Credits

CHM 165	General/Inorg Chemistry I	4
MAT 157	Statistics	4
*SPC 101	Fund of Oral Communication	3
*Select 1 AA degree Core Social & Behavioral Sciences Course		3
*Select 1 Course from Option 1		3
		Total 17

Semester 4 (Spring)—Select 1 Course from Option 1, for a Minimum of 2 Credits

BIO 295	General Ecology and Lab		4
*Select 1 AA degree Core Social & Behavioral Sciences Course			3
*Select 2 AA degree Core Humanities Courses			6
BIO 100	Opportunities in Biology	Opt 1	1
BIO 135	Introduction to Botany	Opt 1	4
*BIO 145	Ecology of Iowa	Opt 1	3
BIO 146	Genetics	Opt 1	3
BIO 922	Field Studies	Opt 1	1–4
BIO 186	Microbiology	Opt 1	4
CHM 175	General/Inorg Chemistry II	Opt 1	4
CHM 263	Organic Chemistry I	Opt 1	5
*ENV 160	Restoring Plant Communities	Opt 1	3
SOC 282	Environmental Sociology	Opt 1	3
PHY 106	Survey of Physics	Opt 1	4
PHY 160	General Physics I	Opt 1	5
			Total 15

TOTAL CREDITS REQUIRED TO COMPLETE THIS AA DEGREE 64

**NOTE: Students are encouraged to take some of the courses marked with an * during the Summer terms, to lighten their load in the Fall and Spring semesters. But, students are cautioned not to take too many credits in the Summer, causing them to fall below the minimum credits needed in Fall and Spring semesters for financial aid purposes.*

NOTE: One of the Social & Behavioral Sciences or Humanities courses must meet the Diversity Requirement. See the AA catalog for a list of appropriate course options.

NOTE: Each Social & Behavioral Science course must be from a distinct discipline (different acronyms).

Fashion Certificate

(see Certificate Section, page 133)

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 coursework and individual effort. Graduates interested in apparel design or interior design usually transfer to a four-year program.

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.

PROGRAMS AVAILABLE

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-semester 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.

For more information about the Fashion/Design program, please visit our website at **www.dmacc.edu/programs/marketing**.

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 semester.

Graduation Requirements

To earn a Fashion diploma or AAS degree, a student must complete all coursework as prescribed and maintain a 2.0 grade point average.

Required Courses–Fashion/Design AAS degree

Semester 1–Select 1 Course from Option 1 and 1 Course from Option 2

APP 260	Fashion Analysis & Design		3
MGT 147	Leadership Development		3
MKT 140	Selling		3
MKT 160	Principles of Retailing	Opt 1	3
BUS 102	Introduction to Business	Opt 1	3
MGT 145	Human Relations in Business	Opt 2	3
PSY 111	Introduction to Psychology	Opt 2	3
			Total 15

Semester 2–Select 1 Course from Option 3

APP 111	Visual Merchandising & Design		3
APP 211	Textiles		3
INT 124	Interior Design Analysis		3
ADM 221	Career Development Skills		2
MGT 194	Relationship Strategies in Business		2
CSC 110	Intro to Computers	Opt 3	3
GRD 301	Intro to Desktop Publishing	Opt 3	3
BCA 212	Intro Computer Business Appl	Opt 3	3
			Total 16

Semester 3

MGT 800	Business Internship I		4
MGT 802	Business Internship Seminar I		2
			Total 6

Semester 4–Select 1 Course from Option 4 and 1 Course from Option 5

MKT 110	Principles of Marketing		3
MGT 805	Business Internship II		4
MGT 807	Business Internship Seminar II		1
APP 250	Design Concepts	Opt 1	3
INT 125	Interior Design Planning	Opt 1	3
APP 270	Fashion Buying	Opt 3	3
MKT 182	Customer Relationship Mgmt	Opt 5	3
BUS 148	Small Business Management	Opt 5	3
MGT 130	Principles of Supervision	Opt 5	3
			Total 14

Semester 5–Select 1 Course from Option 6, 1 Course from Option 7 and 1 Course from Option 8

MKT 150	Principles of Advertising		3
APP 230	Fashion Coordination/Promotion		3
ENG 105	Composition I	Opt 6	3
COM 703	Communication Skills	Opt 6	3
BUS 112	Business Math	Opt 7	3
MAT 141	Finite Math	Opt 7	4
SPC 101	Fundamentals of Oral Communication	Opt 8	3
SPC 126	Interpersonal & Small Group Comm	Opt 8	3
			Total 15

TOTAL CREDITS REQUIRED TO COMPLETE THE AAS DEGREE.....66

Required Courses–Fashion/Design Diploma

Semester 1–Select 1 Course from Option 1 and 1 Course from Option 2

APP 260	Fashion Analysis & Design		3
MGT 147	Leadership Development		3
MKT 140	Selling		3
ADM 221	Career Development Skills		2
MKT 160	Principles of Retailing	Opt 1	3
BUS 102	Introduction to Business	Opt 1	3
MGT 145	Human Relations in Business	Opt 2	3
PSY 111	Introduction to Psychology	Opt 2	3
			Total 17

Semester 2–Select 1 Course from Option 4

APP 111	Visual Merchandising & Design		3
APP 211	Textiles		3
INT 124	Interior Design Analysis		3
MGT 194	Relationship Strategies in Business		2
MKT 110	Principles of Marketing		3
ENG 105	Composition I	Opt 4	3
COM 703	Communication Skills	Opt 4	3
			Total 17

Semester 3–Select 1 Course from Option 3

MGT 800	Business Internship I		4
MGT 802	Business Internship Seminar I		2
BUS 112	Business Math	Opt 3	3
MAT 141	Finite Mathematics	Opt 3	4
			Total 9

TOTAL CREDITS REQUIRED TO COMPLETE THE DIPLOMA.....43

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.

For more information about the Fire Science Technology program, please visit our website at **www.dmacc.edu/programs/fire**.

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 semester.

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 must maintain a 2.0 grade point average.

Required Courses

CHM 122	Intro to General Chemistry	4
ENG 105	Composition I	3
ENG 106	Composition II	3
ENG 108	Composition II: Technical Writing	3
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	Occupational Safety/Health in Emergency Services	3
FIR 138	Principles of Fire Prevention	3
MGT 101	Principles of Management	3
PHI 105	Introduction to Ethics	3
POL 112	American State & Local Government	3
PSY 111	Introduction to Psychology	3
AS degree Core MAT Course		3
AS degree Core SPC Course		3
Electives		6–7

The Courses Below are Recommended to Fulfill the Elective 6–7 Credits

MGT 130	Principles of Supervision	3
MGT 145	Human Relations in Business	3
MGT 147	Leadership Development	3
PSY 102	Human and Work Relations	3
EMS 217	Emergency Medical Technician is recommended	

Note: If the student completes MGT 145 with a grade of "C" or higher, the course will meet the Diversity Requirement. If the student does not complete MGT 145, the student must complete one of the other courses listed under the Diversity Requirement. See the AA/AS section of this catalog for more information.

TOTAL CREDITS REQUIRED TO COMPLETE THIS AS DEGREE..... 64

Fire Specialist

(see Certificate Section, page 133)

Fitness and Sports Management

Fitness and Sports Management is designed to give students three different areas to choose from: Fitness Management, Sports Management and Health.

This degree is designed to be a two-year degree. The degree is designed 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 and 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.

For more information about the Fitness and Sports Management program, please visit our website at **www.dmacc.edu/programs/fitness**.

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 semester.

Graduation Requirements

To earn a Fitness and Sports Management AS degree, a student must complete all coursework as prescribed and maintain a 2.0 grade point average.

Required Courses–All Students

BIO 168	Anatomy & Physiology I	4
BIO 173	Anatomy & Physiology II	4
ECN 130	Principles of Microeconomics	3
ENG 105	Composition I	3
ENG 106	Composition II	3
HSC 240	Human Nutrition	3
MAT 157	Statistics	4
PEA 144	Physical Fitness & Conditioning	2
PEH 102	Health	3
PEH 141	First Aid	2

PEH 162	Intro to Physical Education	3
PEH 920	Field Experience	2
PSY 121	Developmental Psychology	3
SOC 110	Introduction to Sociology	3
SPC 101	Fund of Oral Communication	3
Any AAS degree Core Humanities Course		3

TOTAL REQUIRED COURSES—ALL STUDENTS.....48

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

PEH 265	Leadership Techniques for Fitness Program	2
PET 110	Intro to Athletic Training	2
PEA 248	Adv. Strength & Conditioning	2
MGT 101	Principles of Management	3
Electives		3

Option Courses–Select 1 Course from Option 1

PHY 106	Survey of Physics	Opt 1	4
PHY 160	General Physics I	Opt 1	5

Health Emphasis

Required Courses

BIO 112	General Biology I	4
MKT 110	Principles of Marketing	3
PSY 261	Human Sexuality	3
Electives		6

Sports Management Emphasis

Required Courses

ACC 131	Principles of Accounting I	4
PEH 255	Principles–Sports Management	3
MGT 101	Principles of Management	3
MKT 110	Principles of Marketing	3
Electives		3

Recommended Electives

JOU 165	Principles of Advertising	3
MKT 199	Sports/Entertainment Marketing	3
PEC 110	Coaching Ethics, Tech & Theory	1
PEH 110	Personal Wellness	2
PEH 178	Sports Diversity	3
PEC 161	Sports Officiating	3
PEH 262	Wellness Programming/Planning/Organization	3
PEH 120	Principles: Personal Training I	3

Note: To complete this program, you must meet the Diversity Requirement with a grade of "C" or higher. See the AA/AS section of this catalog for more information about which courses can count toward this requirement.

TOTAL CREDITS REQUIRED TO COMPLETE THIS PROGRAM WITH:

FITNESS MANAGEMENT EMPHASIS 64

HEALTH EMPHASIS 64

SPORTS MANAGEMENT EMPHASIS 64

Fluid Power Technology

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.

For more information about the Fluid Power Technology program, please visit our website at **www.dmacc.edu/programs/fluidpowertech**.

Location: Ankeny

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 semester.

AAS students start any semester.

Graduation Requirements

To earn a Fluid Power Technology diploma or AAS degree, a student must complete all coursework as prescribed and maintain a 2.0 grade point average.

Semester 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

Semester 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 general requirements for Social & Behavioral Sciences or Humanities		3
		Total 15

TOTAL CREDITS REQUIRED TO COMPLETE THE DIPLOMA 30

Semester 3

MFG 818	IMT Internship	5
ELT 131	Motor Controls	3
		Total 8

Semester 4–Select 1 Course from Option 1

MFG 524	PM & Diagnosing Mech/Elec Sys		3
NET 144	Digital & Computer Electronics		3
ELT 123	Programmable Controllers		3
SPC 101	Fund of Oral Communication	Opt 1	3
SPC 126	Interpersonal & Small Grp Comm	Opt 1	3
			Total 12

Semester 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

Gerontology Specialist

(see Certificate section, page 133)

Graphic Design

(previously Commercial Art)

Initially, students will be admitted to the Visual Communications diploma program. After Semester 2 of the Visual Communications diploma program, students will be required to apply to the Graphic Design AAS degree program. Students must submit a portfolio and obtain a satisfactory score and complete the Visual Communications diploma or receive program chair permission. Students will start the Fall semester by choosing a graphic design or web design emphasis.

If you want to take your passion for art and design to the next level, the Graphic Design AAS degree program is closely aligned with local business to understand their "real world" needs and develop those skills in our students. Our classes provide students with design skills, web and print 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, web design companies, 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.

For more information about the Graphic Design program, please visit our website at **www.dmacc.edu/programs/commercialart**.

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 COMPASS Reading score of 61 or a minimum ACT Reading score of 14.
4. Obtain a minimum COMPASS Pre-Algebra score of 25 or a minimum ACT Math score of 14.
5. Obtain a minimum COMPASS English score of 42 or a minimum ACT Writing score of 14.
6. Attend a required Graphic Design program information session.
7. Obtain a satisfactory score on a portfolio evaluation.

Students start Fall semester. 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 coursework 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 and to attend the Portfolio Day event.

Semester 1 (Fall)

BCA 212	Intro to Computer Business Applications	3
GRD 415	InDesign I	3
GRD 459	Illustrator	3
GRT 404	Intro to Visual Communications	2
AAS General Requirement Math Course		3–5
GRT 400	Intro to Printing Methods (offered both Fall and Spring semesters)	4

Semester 2 (Spring)

GRD 403	Communication Design I	3
GRD 405	Typography I	3
GRD 430	InDesign II	3
GRD 463	Photoshop	3
WDV 101	Intro to HTML and CSS	3
AAS General Requirement Communications Course		3

Semester 3 (Summer)

GRD 411	Communication Design II	3
GRD 470	Interactive Media I	3
GRT 403	Production Methods	2
AAS General Requirement Social & Behavioral Sciences/Humanities Course		3

VISUAL COMMUNICATIONS DIPLOMA TOTAL.....47

Students accepted into the Graphic Design AAS degree program would continue taking the following courses. Students must choose a Graphic Design Emphasis or a Web Design Emphasis:

Semester 4 (Fall)

Students choosing a Graphic Design emphasis take all Option 1 courses:

GRD 404	Typography II	Opt 1	3
GRD 410	Illustration I	Opt 1	3
GRD 421	Internship Preparation	Opt 1	3
GRD 426	Communication Design III	Opt 1	3
GRD 471	Interactive Media II	Opt 1	3

Students choosing a Web Design emphasis take all Option 2 courses:

WDV 261	Intro Flash	Opt 2	3
BUS 150	E-Commerce on the Web	Opt 2	3
WDV 245	Content Management Systems I	Opt 2	3
GRD 480	Video Production I	Opt 2	3
WDV 221	Intro JavaScript	Opt 2	3

Semester 5 (Spring)

Students choosing a Graphic Design emphasis take all Option 3 courses and select 1 course from Option 4:

GRD 424	Graphic Design Internship	Opt 3	3
GRD 437	Communication Design IV	Opt 3	3
GRD 464	Digital Artistry	Opt 3	3
AAS General Requirement Distributed Course		Opt 3	3
ART 186	Principles Digital Photography	Opt 4	3
ART 289	Photojournalism	Opt 4	3
BUS 150	E-Commerce on the Web	Opt 4	3
CIS 207	Fund of Web Programming	Opt 4	3
GRD 414	Illustration II	Opt 4	3
GRD 448	Airbrush I	Opt 4	3
GRT 430	Emerging Technologies	Opt 4	3
MKT 150	Principles of Advertising	Opt 4	3

Students choosing a Web Design emphasis take all Option 5 courses and select 1 course from Option 6 (listed below):

GRD 471	Interactive Media II	Opt 5	3
GRD 473	Motion Graphics and Special Effects	Opt 5	3
GRD 445	Content Management Systems II	Opt 5	3
AAS General Requirement Distributed Course		Opt 5	3
Select one Option 6 course from the list below		Opt 6	3

Term 6–Summer–only for students choosing a Web Design emphasis.

Select 1 course from Option 7 and 1 course from Option 6 (listed below):

GRD 424	Graphic Design Internship	Opt 7	3
WDV 932	Web Development Internship	Opt 7	3
Select one Option 6 course from the list below:		Opt 6	3

Option 6 Course List

GRD 464	Digital Artistry	Opt 6	3
WDV 321	Advanced JavaScript	Opt 6	3
WDV 331	Dreamweaver Applications	Opt 6	3
WDV 341	Intro PHP	Opt 6	3
WDV 351	Website Application Components	Opt 6	3
MKT 115	Business to Business Marketing	Opt 6	3
MKT 120	E-Marketing	Opt 6	3
MKT 160	Principles of Retailing	Opt 6	3
ART 186	Principles of Digital Photography	Opt 6	3
GRD 481	Video Production II	Opt 6	3

TOTAL MINIMUM CREDITS REQUIRED TO COMPLETE THIS PROGRAM—GRAPHIC DESIGN EMPHASIS 77

TOTAL MINIMUM CREDITS REQUIRED TO COMPLETE THIS PROGRAM—WEB DESIGN EMPHASIS 83

Graphic Sales and Customer Service

(see Certificate section, page 134)

Graphic Technologies

Initially, students will be admitted to the Visual Communications diploma program. Upon completion of the Visual Communications diploma, students may continue on and earn a Graphic Technologies AAS degree.

The Graphic Technologies program expands upon the Visual Communications diploma by preparing students for a variety of technical careers within the graphics and printing industry. Within the Graphic Technologies program, students choose an area of emphasis in either Printing Technologies or Digital Publishing. Students choosing a Printing Technologies emphasis hone their printing skills in the areas of offset press operation, flexography, digital printing, advanced screenprinting applications and finishing. Students choosing a Digital Publishing emphasis expand their knowledge in technical layout, digital imaging and digital prepress functions. Students can also opt to expand their skills in the areas of business management or advanced Adobe applications.

To finalize their education, students in the Graphic Technologies program complete an internship, work collaboratively on a capstone project and individually prepare their portfolio. Many Graphic Technologies graduates have found careers in small and large printing and publishing companies, in-house printing and graphics departments, digital imaging centers and other businesses in need of graphic communications professionals.

For more information about the Graphic Technologies program, please visit our website at **www.dmacc.edu/programs/graphicarts/index.html**.

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 COMPASS Reading score of 61 or a minimum ACT Reading score of 14.
4. Obtain a minimum COMPASS Pre-Algebra score of 25 or a minimum ACT Math score of 14.
5. Obtain a minimum COMPASS English score of 42 or a minimum ACT Writing score of 14.
6. Attend a Graphic Technologies information session.

Students start Fall semester. 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 Technologies AAS degree, a student must complete all coursework as prescribed and maintain a 2.0 grade point average.

Semester 1 (Fall)		
BCA 212	Intro to Computer Business Applications	3
GRD 415	InDesign I	3
GRD 459	Illustrator	3
GRT 404	Intro to Visual Communications	2
AAS General Requirement Math Course		3–5
GRT 400	Intro to Printing Methods (offered both Fall and Spring semesters)	4
Semester 2 (Spring)		
GRD 403	Communication Design I	3
GRD 405	Typography I	3
GRD 430	InDesign II	3
GRD 463	Photoshop	3
WDV 101	Intro HTML and CSS	3
AAS General Requirement Communications Course		3
Semester 3 (Summer)		
GRD 411	Communication Design II	3
GRD 470	Interactive Media I	3
GRT 403	Production Methods	2
AAS General Requirement Social & Behavioral Sciences/Humanities Course		3

VISUAL COMMUNICATIONS DIPLOMA TOTAL.....47

Students accepted into the Graphic Technologies AAS degree program would continue taking the following courses:

Semester 4 (Fall)

All Graphic Technologies Students Take:			
GRT 409	Project Planning & Management		3
BCA 164	Basic Databases		1
Students choosing a Printing Technologies emphasis take both Option 1 Courses:			
GRT 420	Advanced Printing Methods	Opt 1	4
GRT 427	Specialty Printing Methods	Opt 1	4
Students choosing a Digital Publishing emphasis take both Option 2 Courses:			
GRT 424	Digital Imaging II	Opt 2	4
GRT 426	Digital Publishing III	Opt 2	4
Semester 5 (Spring)			
All Graphic Technologies Students Take:			
GRT 430	Emerging Technologies		3
GRT 932	Internship		3–4
AAS General Requirement Distributed Course			3
Select 1 Course from the Option 5 List Below			3
Students choosing a Printing Technologies emphasis take the Option 3 Course:			
GRT 453	Printing Methods Capstone	Opt 3	4
Students choosing a Digital Publishing emphasis take the Option 4 Course:			
GRT 455	Digital Publishing Capstone	Opt 4	4

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
JOU 125	Newspaper Production	Opt 5	3

TOTAL CREDITS REQUIRED TO COMPLETE THIS AAS DEGREE.....75

(includes credits from the Visual Communications diploma)

Greenhouse Production

(see Certificate Section, page 134)

Health Information Technology

The Health Information Technology AAS degree is designed to meet growing demands for trained health information specialists and data managers in the health IT industry. Graduates may pursue work in a variety of settings, including hospitals, clinics, Long-Term care, insurance companies, government agencies, quality improvement programs, etc.

Coursework combines elements of business, computers, health sciences and health IT with practical computer lab and on-site internship experiences. Students learn skills in areas such as coding, billing, electronic health records (EHRs), registries, data analysis and reporting, quality improvement, legal compliance and other technical processes.

In addition to the AAS degree, there are many certification options for health IT professionals, depending upon the desired career path. Certifications will enhance the AAS degree. For example, CPEHR (certified professional in electronic health records), CPHIT, CPHIE, CISSP (privacy specialist) or coding credentials such as CPC, CCS-P or PAHCS. Credentials may require work experience prior to certification and continuing education hours to maintain certification. Costs and qualifications vary.

This HIT program utilizes a background check service, **www.certifiedbackground.com**, to conduct criminal background/abuse checks and to track the immunizations and health records of each student **after their acceptance** into the program. Students are responsible for the cost of this service. Criminal convictions or documented history of abuse may delay or prevent students from participation in health IT education experiences. Students unable to participate in health IT education experiences (internships) will be unable to complete the Health Information Technology program.

For more information about the Health Information Technology program, please visit our website at **www.dmacc.edu/programs/health/healthinfotech**.

Location: Ankeny

Program Entry Requirements

1. Complete an application for admission.
2. Attend any required information/registration session.
3. Satisfy the required assessment by taking the reading COMPASS test or equivalent.
4. Obtain a minimum score of 46 in algebra on the COMPASS test OR an ACT score of 19 OR MAT 063 with a "C" or better OR Program chairperson approval.

5. Obtain a minimum score of 70 in writing on the COMPASS test OR an ACT writing score of 19 or higher OR completion of ENG 061 College Preparatory Writing II with a grade of "B" or higher OR Program chairperson approval.
6. Obtain a score of at least 30 NWPM with five errors or fewer on the typing/word processing skill test.

Students start Fall semester.

Graduation Requirements

To earn a Health Information Technology AAS degree, a student must complete all coursework as prescribed and maintain a 2.0 grade point average. A grade of 2.0 (C) or better is required in all HIT courses.

Semester 1

CSC 110	Introduction to Computers		3
HIT 390	Intro HIT Project Management		1
HIT 125	Essentials of Health Records		2
HSC 120	Medical Terminology I		3
HIT 360	Introduction to HIT		3

Semester 2–Select 1 Course from Option 1

HIT 450	Health Statistics		2
MAP 141	Medical Insurance		3
HSC 121	Medical Terminology II		3
HIT 120	Pharmacology for HIT		1
BCA 113	Computer Network Literacy		3
SPC 101	Fundamentals of Oral Communication	Opt 1	3
SPC 126	Interpersonal & Small Group Comm.	Opt 1	3

Semester 3

HIT 520	Internship I		2
ENG 105	Composition I		3
BIO 733	Health Science Anatomy		3
HIT 162	Data Security Issues for Health IT		2

Semester 4–Select 1 Course from Option 2

BCA 213	Intermediate Computer Business App.		3
MAP 150	Adv. Medical Billing/Coding		3
HIT 315	Electronic Applications for Healthcare Data		2
ENG 108	Composition II: Technical Writing		3
PSY 102	Human and Work Relations	Opt 2	3
PSY 111	Introduction to Psychology	Opt 2	3

Semester 5

HIT 420	Legal Aspects of Health Information		2
HIT 290	Reimbursement Methods		3
HIT 430	Quality Improvement		3
HIT 521	Internship II		4
HIT 339	Quality Management		2

TOTAL CREDITS REQUIRED TO COMPLETE THIS AAS DEGREE.....65

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 semesters, a student can receive a diploma. An AAS degree will be awarded upon completion of all five semesters.

For more information about the Heating, Air Conditioning, Refrigeration Technology program, please visit our website at **www.dmacc.edu/programs/hvac**.

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 semester.

Graduation Requirements

To earn a Heating, Air Conditioning, Refrigeration Technology diploma or AAS degree, a student must complete all coursework as prescribed and maintain a 2.0 grade point average.

Semester 1

HCR 307	Fundamentals of Refrigeration		5
HCR 260	HVAC Trade Skills I		3
HCR 404	Electricity		5
MAT 772	Applied Math		3

Semester 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

Semester 3

HCR 256	Applied Heating and AC		5
HCR 932	Internship		4

TOTAL CREDITS REQUIRED TO COMPLETE THE DIPLOMA..... 41

Semester 4

HCR 270	Advanced Heating and AC		5
HCR 506	Air Distribution		3
HCR 717	Blueprint Reading		3
PHY 710	Technical Physics		3

Semester 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

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.

For more information about the Hospitality Business program, please visit our website at **www.dmacc.edu/programs/culinary/hospitalitybusiness.asp**.

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 semester.

(Most classes in this program meet in the daytime hours, but a few will involve some evenings and weekends.)

Graduation Requirements

To earn a Hospitality Business diploma, a student must complete all coursework as prescribed and maintain a 2.0 grade point average.

Semester 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

Semester 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

Semester 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.

ADM 221	Career Development Skills		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 CREDITS REQUIRED TO COMPLETE THIS DIPLOMA 38

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.

Semesters 1, 2 & 3 must be completed before entry is allowed into semesters 4 & 5 to receive the AAS degree. Students planning on transferring to a four-year college should see an advisor or the program chairperson before registration.

For more information about the Hotel and Restaurant Management program, please visit our website at **www.dmacc.edu/programs/culinary/hotel.asp**.

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 semester.

(Most classes in this program meet in the daytime hours, but a few will involve some evenings and weekends.)

Graduation Requirements

To earn a Hotel and Restaurant Management AAS degree, a student must complete all coursework as prescribed and maintain a 2.0 grade point average.

Required Courses

Semester 1–Select 1 Course from Option 1

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
COM 703	Communication Skills	Opt 1	3
Any ENG Course designated as Core		Opt 1	3

Semester 2–Select 1 Course from Option 2

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 Computer Business Appl		3
BUS 112	Business Math	Opt 2	3
Any MAT Course designated as Core		Opt 2	3

Semester 3

ADM 221	Career Development Skills		2
HCM 510	Work Experience		3

Students seeking a restaurant management emphasis should select the Option 3 courses.

HCM 152	Food Preparation II	Opt 3	2
HCM 153	Food Preparation II Lab	Opt 3	2

Students seeking a hotel management emphasis should select the Option 4 course.

MKT 110	Principles of Marketing	Opt 4	3

Semester 4

Semesters 1, 2 and 3 must be completed before enrolling in semesters 4 & 5. All students must take the following three courses:

ACC 111	Intro to Accounting	3
BUS 148	Small Business Management	3
HCM 250	Purchasing (Lec)	2

Students seeking a restaurant management emphasis should select the Option 5 courses.

HCM 210	Dining Management (Lec)	Opt 5	2
HCM 167	Culinary Skill Development	Opt 5	3

Students seeking a hotel management emphasis should select the Option 6 courses.

HCM 604	Hotel Services Internship	Opt 6	5
HCM 600	Intro to Lodging Operations	Opt 6	2

Semester 5

All students must take the following two courses:

HCM 231	Nutrition	2
HCM 240	Menu Planning & Design (Lec)	2

All students must select one course from Option 7.

SPC 101	Fundamentals of Oral Communication	Opt 7	3
Any SPC Course designated as Core		Opt 7	3

Students seeking a restaurant management emphasis should select the Option 8 course.

HCM 300	Beverage Management	Opt 8	2

Students seeking a hotel management emphasis should select the Option 9 course.

HCM 605	Hotel Administration	Opt 9	2

All students must select one course from the Option 10 courses.

BUS 102	Intro to Business	Opt 10	3
BUS 185	Business Law I	Opt 10	3
MGT 130	Principles of Supervision	Opt 10	3
MGT 101	Principles of Management	Opt 10	3

TOTAL CREDITS REQUIRED TO COMPLETE THE HOTEL MANAGEMENT EMPHASIS..... 65

TOTAL CREDITS REQUIRED TO COMPLETE THE RESTAURANT MANAGEMENT EMPHASIS..... 64

Human Resource Management

(see Certificate Section, page 134)

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 internship 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.

For more information about the Human Services program, please visit our website at **www.dmacc.edu/programs/humanservices**.

Locations: Ankeny, Newton, Urban

Selected courses in this program are offered at other campuses.

Newton Campus students must take HSV 286, HSV 288 and HSV 802 at the Ankeny or Urban Campus.

Program Entry Requirements

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

Students start any semester.

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 must maintain a 2.5 grade point average.

Required Courses

HSV 109	Introduction to Human Services	3
HSV 130	Interviewing/Interpersonal Relations	3
HSV 185	Discrimination and Diversity	3
HSV 220	Intro to Counseling Theories	3
HSV 230	Community Organization	3
HSV 286	Intervention Theories/Practice I	3
HSV 288	Intervention Theories/Practice II	3
HSV 802	Internship	3
*PSY 121	Developmental Psychology	3
PSY 241	Abnormal Psychology	3

Option Courses–Select 2 Courses from Option 1 and 1 Course from Option 2

ANT 100	Introduction to Anthropology	Opt 1	3
PHI 105	Introduction to Ethics	Opt 1	3
POL 112	American State & Local Government	Opt 1	3
HSV 135	Women's Issues	Opt 1	3
HSV 811	Pract: Chemical Depend Counseling I	Opt 1	3
HSV 812	Pract: Chemical Depend Counseling II	Opt 1	3
SOC 120	Marriage and Family	Opt 1	3
SOC 200	Minority Group Relations	Opt 1	3
SOC 230	Juvenile Delinquency	Opt 1	3
SOC 240	Criminology	Opt 1	3
SOC 225	Social Gerontology/Applications	Opt 1	4

*PSY 111	Introduction to Psychology	Opt 1	3
*PSY 251	Social Psychology	Opt 1	3
PSY 291	Principles of Behavior Modification	Opt 1	3
*PSY 261	Human Sexuality	Opt 1	3
HSV 228	Group Counseling Techniques	Opt 1	3
HSV 133	Conflict Resolution	Opt 2	3
HSV 255	Addictive Disease Concepts	Opt 2	3
SOC 110	Introduction to Sociology	Opt 2	3
SOC 115	Social Problems	Opt 2	3

COMPLETE REMAINING AS DEGREE CORE REQUIREMENTS.....28

**NOTE: Students are allowed to use PSY 121 as a program requirement AND as an AS Degree Core Social/Behavioral Sciences requirement. The degree audit is set up to automatically reuse that course, which makes the total number of credits 64 instead of 67.*

Note: If the student completes HSV 185 or PSY 241 with a grade of "C" or higher, the course will meet the Diversity Requirement. See the AA/AS section of this catalog for more information.

TOTAL CREDITS REQUIRED TO COMPLETE THIS AS DEGREE..... 64

InDesign

(see Certificate Section, page 134)

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.

For more information about the Industrial Electro-Mechanical Technology program, please visit our website at **www.dmacc.edu/programs/iemt.**

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 Fall semester.

Graduation Requirements

To earn an Industrial Electro-Mechanical Technology AAS degree, a student must complete all coursework as prescribed and maintain a 2.0 grade point average.

Semester 1

MAT 772	Applied Math	3
CSC 110	Introduction to Computers	3
MFG 276	Hand & Bench Machine Tools	1
ELT 303	Principles of Electricity	3

Select Emphasis 1 or Emphasis 2 or Emphasis 3:

Emphasis 1 Manufacturing Maintenance Technologies

MFG 121	Machine Trade Printreading I	2
CON 336	Care/Use of Hand/Power Tools	1

Emphasis 2 Biomass Maintenance Technologies

BPT 102	Intro to Biomass Process Tech	2
RRO 101	Railcar Safety	2

Emphasis 3 Wind Turbine Technologies

WTT 103	Introduction to Wind Energy	3

Semester 2

MAT 773	Applied Math II	3
COM 703	Communication Skills	3
ELT 131	Motor Controls	3

Emphasis 1 Manufacturing Maintenance Technologies

MGT 164	Total Quality Management	3
IND 146	Mechanical Power Transmission I	3

Emphasis 2 Biomass Maintenance Technologies

BPT 111	Biomass Equipment and Systems	3
IND 146	Mechanical Power Transmission I	3

Emphasis 3 Wind Turbine Technologies

IND 147	Mechanical Power Transmission II	4
WTT 223	Airfoils and Composite Repair	3

Semester 3

Emphasis 1 Manufacturing Maintenance Technologies

MFG 250	Engine Lathe Theory	1
MFG 251	Engine Lathe Operations Lab	2
MFG 260	Mill Operations Theory	1
MFG 261	Mill Operations Lab	2
IND 147	Mechanical Power Transmission II	4

Emphasis 2 Biomass Maintenance Technologies

BPT 112	Biomass Tech Health/Safety	3
BPT 125	Piping & Instrument Diagrams	2
IND 147	Mechanical Power Transmission II	4

Emphasis 3 Wind Turbine Technologies

WTT 114	Field Training & Project Oper	5
WTT 133	Wind Turbine Mechanical Systems	3

Semester 4

ELE 217	Advanced Motor Controls	3
ELT 791	Hydraulics & Pneumatics	3
ELT 792	Hydraulics & Pneumatics Lab	2
ELT 123	Programmable Controllers	3

Emphasis 1 Manufacturing Maintenance Technologies

BMA 177	Industrial Plumbing & Pipefitting	3
IND 144	Pump Overhaul and Repair	4

Emphasis 2 Biomass Maintenance Technologies		
IND 144	Pump Overhaul and Repair	4
BMA 167	Steam Plant Operations	2
Emphasis 3 Wind Turbine Technologies		
WTT 216	Power Generation/Transmission	3
WTT 245	Electrical Practical App	4
Semester 5		
MFG 172	Related Welding–Indust Maint	3
MGT 145	Human Relations in Business	3
CAD 119	Intro to Computer-Aided Drafting	3
Emphasis 1 Manufacturing Maintenance Technologies		
MFG 524	PM & Diagnosing Mech/Elec Sys	3
Emphasis 2 Biomass Maintenance Technologies		
BPT 128	Operator Biomass Lab Process	3
Emphasis 3 Wind Turbine Technologies		
WTT 225	Data Acquisition & Assessment	4

TOTAL CREDITS REQUIRED TO COMPLETE THIS AAS DEGREE:

EMPHASIS 1: MANUFACTURING MAINTENANCE TECHNOLOGIES.....68

EMPHASIS 2: BIOMASS MAINTENANCE TECHNOLOGIES.....67

EMPHASIS 3: WIND TURBINE TECHNOLOGIES 68

Informatics

(see Certificate Section, page 135)

Information Processing Support

(see Certificate Section, page 135)

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.

For more information about the Information Technology/Network Administration program, please visit our website at **www.dmacc.edu/programs/itna**.

Location: Ankeny

Selected courses in this program are offered at other campuses.

Program Entry Requirements

1. Complete an application for admission.
2. Attend any required information/registration session.
3. Satisfy the required assessment by taking the reading and English COMPASS test or equivalent.
4. Minimum COMPASS pre-algebra score of 44, or minimum score of 15 on the ACT exam, or completion of MAT 053 with a grade of "C" or higher.
5. Successful completion of CSC 110 Intro to Computers or equivalent; or approval of the program counselor.

Students start Fall semester.

Graduation Requirements

To earn an Information Technology Network Administration AAS degree, a student must complete all coursework as prescribed and maintain a 2.0 grade point average.

All students take the first three semesters.

Semester 1–Select 1 Course from Option 1			
NET 144	Digital & Computer Electronics		3
NET 213	CISCO Networking		4
MGT 145	Human Relations in Business	Opt 1	3
PSY 102	Human & Work Relations	Opt 1	3
Any AAS Degree Communications General Requirement Course			3
Any AAS Degree Math General Requirement Course			3–4
Semester 2			
NET 123	Computer Hardware Basics		4
NET 223	CISCO Routers		4
NET 402	Linux Network Administration		3
CIS 130	Computer Programming		3
Select 1 Course from AA/AS degree Core Social & Behavioral Sciences/Humanities			3–4
Semester 3			
NET 166	Applied Computer Security		3
NET 139	Miscrosoft Desktop Operating Sys.		4
Credits from the Option 2 Course List			Minimum 3

After Semester 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.

Microsoft Specialization students must complete the following:

Semester 4		
NET 333	Implementing Windows Network Infrastructure	3
NET 664	MS Windows Professional/Server	5
NET 343	Windows Directory Services	3
Credits from the Option 2 Course List		minimum 2
Semester 5		
NET 324	Windows Network Management	4
NET 365	Design MS Active Dir & Network	3
Credits from the Option 2 Course List		minimum 5

Linux Specialization students must complete the following:

Semester 4

NET 412	Linux System Administration	3
NET 512	Linux Enterprise Administration I	3
CIS 210	Web Development I	3
Credits from the Option 2 Course List		minimum 3

Semester 5

NET 432	Linux System Security	3
NET 422	Linux System Programming	3
CIS 211	Web Development II	3
Credits from the Option 2 Course List		minimum 3

Option 2 Courses

NET 233	CISCO Switches	4
NET 243	CISCO Wide Area Networks (WAN)	4
NET 324	Windows Network Management	4
NET 333	Imp Windows Network Infrastructure	3
NET 343	Windows Directory Service	3
NET 365	Design MS Active Dir & Network	3
NET 376	Designing Security for MS Net	3
NET 412	Linux System Administration	3
NET 422	Linux System Programming	3
NET 432	Linux System Security	3
NET 434	Linux Systems and Certification	3
NET 435	Linux Programming for Administration	3
NET 436	Linux Network Programming	3
NET 512	Linux Enterprise Admin I	3
NET 532	Linux Enterprise Administration II	3
NET 612	Fund of Network Security	3
NET 653	Microsoft Exchange Server	4
NET 664	MS Windows Prof/Server	5
NET 711	SQL Database	3
NET 715	Database Security & Auditing	3
NET 730	Computer Forensics & Inv.	3
NET 932	Internship	3
CIS 178	Java Programming I	2
CIS 179	Java Programming II	2
CIS 210	Web Development I	3
CIS 211	Web Development II	3
CIS 303	Introduction to Database	3
CRJ 167	Operating Sys for Forensics	3
CRJ 176	Computer Forensics I	3
CRJ 276	Computer Forensics II	3
CRJ 277	Adv Digital Forensic Methods	4

TOTAL CREDITS REQUIRED TO COMPLETE THIS AAS DEGREE:

LINUX SPECIALIZATION.... 67

MICROSOFT SPECIALIZATION..... 68

Interactive Media for Graphic Design

(see Certificate Section, page 135)

Interior Design Consultant

(see Certificate Section, page 136)

Interpretation & Translation

The Interpretation & Translation program prepares functionally bilingual students for entry-level employment in the rapidly expanding language Interpretation & Translation field or for transfer to a four-year degree program in translation/interpretation studies, world languages or applied linguistics. 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: business, education, healthcare, human services or judicial. The program is designed for students who wish to add Interpretation & 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, required general courses in interpretation/translation and one of the following emphases in interpretation/translation: business, education, healthcare, human services or judicial. 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 one of the following Certificates of Specialization: Interpretation & Translation-Business, Interpretation & Translation-Education, Interpretation & Translation-Healthcare, Interpretation & Translation-Human Services or Interpretation & Translation-Judiciary. Students who have finished either the Interpretation & Translation AS degree or one of the Interpretation & Translation certificates can enroll in a second or subsequent Interpretation & Translation certificate program.

A program chairperson and a program counselor are available to assist students with educational and career planning. All of the Interpretation & Translation courses are offered online.

Graduates of the Interpretation & 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.

For more information about the Interpretation & Translation program, please visit our website at **www.dmacc.edu/programs/itr**.

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. Satisfy the assessment requirement.
3. Complete the ITR online program information orientation including the survey.
4. 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 chairperson

5. Show proficiency in a second language with one of the following:

a. Evidence of completion of high school in a country where the 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 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 chairperson

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 in the Business ITR, Human Services ITR and Judiciary ITR programs start in the Fall semester of ODD-NUMBERED years; students in the Education ITR and Healthcare ITR programs start in the Fall semester of EVEN-NUMBERED years. Close contact with an academic advisor is strongly recommended for planning, because many courses are only offered once every two years.

Graduation Requirements

To earn an Interpretation & Translation AS degree, a student must complete the standard core requirements for the degree, plus the Interpretation & Translation required courses and options, maintain a 2.0 grade point average and receive a grade of "C" or above in all ITR coursework.

Business Interpretation/Translation Emphasis

(Starts Fall semester of ODD-NUMBERED YEARS)

Semester 1–(Fall semester of Odd-Numbered Years)

ITR 101	Introduction to Interpretation & Translation	3
ITR 102	Tools for the Interpreter and Translator	3
AS degree Core Courses		6–9

Semester 2–(Spring semester of Even-Numbered Years)

ITR 103	Fundamentals of Interpretation	3
ITR 104	Fundamentals of Translation	3
AS degree Core Courses		6–9

Semester 3–(Summer term of Even-Numbered Years)

BUS 102	Introduction to Business	3
ITR 109	Interp/Trans Ethics I	3
AS degree Core Courses		0–2

Semester 4–(Fall semester of Even-Numbered Years)

ITR 211	Business Semester & Sight Trans	3
ITR 213	Business Interpretation I	3
AS degree Core Courses		6–9

Semester 5–(Spring semester of Odd-Numbered Years)

ITR 214	Business Interpretation II	3
ITR 217	Business Translation	3
AS degree Core Courses		6–9

Semester 6–(Summer term of Odd-Numbered Years)

ITR 209	Interp/Trans Ethics II	3
ITR 811	Business I/T Internship	3
AS degree Core Courses Still Remaining		0–2

Note: If the student completes ITR 101 with a grade of "C" or higher, the course will meet the Diversity Requirement. See the AA/AS section of this catalog for more information.

TOTAL CREDITS REQUIRED FOR THE BUSINESS EMPHASIS..... 64

Education Interpretation/Translation Emphasis

(Starts Fall semester of EVEN-NUMBERED YEARS)

Semester 1–(Fall semester of Even-Numbered Years)

ITR 101	Introduction to Interpretation & Translation	3
ITR 102	Tools for the Interpreter and Translator	3
AS degree Core Courses		6–9

Semester 2–(Spring semester of Odd-Numbered Years)

ITR 103	Fundamentals of Interpretation	3
ITR 104	Fundamentals of Translation	3
AS degree Core Courses		6–9

Semester 3–(Summer term of Odd-Numbered Years)

EDU 213	Introduction to Education	3
ITR 109	Interp/Trans Ethics I	3
AS degree Core Courses		0–2

Semester 4–(Fall semester of Odd-Numbered Years)

ITR 231	Education Semester & Sight Trans	3
ITR 233	Education Interpretation I	3
AS degree Core Courses		6–9

Semester 5–(Spring semester of Even-Numbered Years)

ITR 234	Education Interpretation II	3
ITR 237	Education Translation	3
AS degree Core Courses		6–9

Semester 6–(Summer term of Even-Numbered Years)

ITR 209	Interp/Trans Ethics II	3
ITR 831	Education I/T Internship	3
AS degree Core Courses Still Remaining		0–2

Note: If the student completes ITR 101 with a grade of "C" or higher, the course will meet the Diversity Requirement. See the AA/AS section of this catalog for more information.

TOTAL CREDITS REQUIRED FOR THE EDUCATION EMPHASIS..... 64

Healthcare Interpretation/Translation Emphasis

(Starts Fall semester of EVEN-NUMBERED YEARS)

Semester 1–(Fall semester of Even-Numbered Years)

ITR 101	Introduction to Interpretation & Translation	3
ITR 102	Tools for the Interpreter and Translator	3
AS degree Core Courses		6–9

Semester 2–(Spring semester of Odd-Numbered Years)

ITR 103	Fundamentals of Interpretation	3
ITR 104	Fundamentals of Translation	3
AS degree Core Courses		6–9

Semester 3–(Summer term of Odd-Numbered Years)

BIO 156	Human Biology w/Lab	3
ITR 109	Interp/Trans Ethics I	3
AS degree Core Courses		0–2

Semester 4–(Fall semester of Odd-Numbered Years)

ITR 271	Healthcare Semester & Sight Trans	3
ITR 273	Healthcare Interpretation I	3
AS degree Core Courses		6–9

Semester 5–(Spring semester of Even-Numbered Years)

ITR 274	Healthcare Interpretation II	3
ITR 277	Healthcare Translation	3
AS degree Core Courses		6–9

Semester 6–(Summer term of Even-Numbered Years)

ITR 209	Interp/Trans Ethics II	3
ITR 871	Healthcare I/T Internship	3
AS degree Core Courses Still Remaining		0–2

Note: If the student completes ITR 101 with a grade of "C" or higher, the course will meet the Diversity Requirement. See the AA/AS section of this catalog for more information.

TOTAL CREDITS REQUIRED FOR THE HEALTHCARE EMPHASIS..... 64

Human Services Interpretation/Translation Emphasis

(Starts Fall semester of ODD-NUMBERED YEARS)

Semester 1–(Fall semester of Odd-Numbered Years)

ITR 101	Introduction to Interpretation & Translation	3
ITR 102	Tools for the Interpreter and Translator	3
AS degree Core Courses		6–9

Semester 2–(Spring semester of Even-Numbered Years)

ITR 103	Fundamentals of Interpretation	3
ITR 104	Fundamentals of Translation	3
AS degree Core Courses		6–9

Semester 3–(Summer term of Even-Numbered Years)

HSV 109	Introduction to Human Services	3
ITR 109	Interp/Trans Ethics I	3
AS degree Core Courses		0–2

Semester 4–(Fall semester of Even-Numbered Years)

ITR 251	Human Services Semester & Sight Trans	3
ITR 253	Human Services Interpretation I	3
AS degree Core Courses		6–9

Semester 5–(Spring semester of Odd-Numbered Years)

ITR 254	Human Services Interpretation II	3
ITR 257	Human Services Translation	3
AS degree Core Courses		6–9

Semester 6–(Summer term of Odd-Numbered Years)

ITR 209	Interp/Trans Ethics II	3
ITR 851	Human Services I/T Internship	3
AS degree Core Courses Still Remaining		0–2

Note: If the student completes ITR 101 with a grade of "C" or higher, the course will meet the Diversity Requirement. See the AA/AS section of this catalog for more information.

TOTAL CREDITS REQUIRED FOR THE HUMAN SERVICES EMPHASIS..... 64

Judiciary Interpretation/ Translation Emphasis

(Starts Fall semester of ODD-NUMBERED YEARS)

Semester 1–(Fall semester of Odd-Numbered Years)

ITR 101	Introduction to Interpretation & Translation	3
ITR 102	Tools for the Interpreter and Translator	3
AS degree Core Courses		6–9

Semester 2-(Spring semester of Even-Numbered Years)

ITR 103	Fundamentals of Interpretation	3
ITR 104	Fundamentals of Translation	3
AS degree Core Courses		6–9

Semester 3-(Summer term of Even-Numbered Years)

CRJ 130	Criminal Law	3
ITR 109	Interp/Trans Ethics I	3
AS degree Core Courses		0–2

Semester 4–(Fall semester of Even-Numbered Years)

ITR 291	Judiciary Semester & Sight Trans	3
ITR 293	Judiciary Interpretation I	3
AS degree Core Courses		6–9

Semester 5-(Spring semester of Odd-Numbered Years)

ITR 294	Judiciary Interpretation II	3
ITR 297	Judiciary Translation	3
AS degree Core Courses		6–9

Semester 6-(Summer term of Odd-Numbered Years)

ITR 209	Interp/Trans Ethics II	3
ITR 891	Judiciary I/T Internship	3
AS degree Core Courses Still Remaining		0–2

Note: If the student completes ITR 101 with a grade of "C" or higher, the course will meet the Diversity Requirement. See the AA/AS section of this catalog for more information.

TOTAL CREDITS REQUIRED FOR THE JUDICIARY EMPHASIS..... 64

Interpretation & Translation–Business, Education, Healthcare, Human Services & Judiciary

Certificates (see Certificate Section, page 136–140)

Landscape Design

(see Certificate Section, page 140)

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.

For more information about the Legal Assistant program, please visit our website at **www.dmacc.edu/programs/legalassistant**.

Location: Urban

Program Entry Requirements

1. Complete an application for admission.
2. Satisfy the assessment requirement.
3. Attend any required information/registration session.
4. Students entering the program need satisfactory computer skills. BCA 212 Intro to Computer Business Applications is highly recommended.

Students may start any semester.

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 coursework.

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

Elective Courses

Electives	2

Note: To complete this program, you must meet the Diversity Requirement with a grade of "C" or higher. See the AA/AS section of this catalog for more information about which courses can count toward this requirement.

TOTAL CREDITS REQUIRED TO COMPLETE THIS AS DEGREE 64

Legal Assistant Certificate

(see Certificate Section, page 141)

Long-Term Care Administrator

(see Certificate Section, page 141)

Long-Term Care Administrator–Practicum

(see Certificate Section, page 142)

Machinist Technology

(see Tool & Diemaking, page 116)

Maintenance (Diesel)

(see Certificate Section, page 142)

Management—AA or AAS

The Management program offers students a number of career and educational opportunities. This program allows students to choose either an AA or AAS degree. Students who plan to transfer to a four-year college or university should consider the AA degree program. The AA degree will satisfy the freshman and sophomore Management requirements of most four-year colleges if planned carefully with an advisor.

The AAS degree is designed for students who want to prepare for an immediate career in business. This degree will prepare you with the people skills and organizational systems knowledge to succeed and earn

promotions in the company or institutional environment of your choice. Experience and leadership skills are gained through on-the-job training and participation in professional development activities.

Coursework in the Management AAS program includes communications and human relations, management and supervision, information processing, problem-solving and computer applications, team-building and leadership development, and organizational and human resource development.

Graduates of the program have found positions as general managers, supervisors, assistant personnel managers, office managers, manufacturing and distribution managers, production supervisors, parts and inventory managers, business owners, customer service representatives, training coordinators, sales managers, buyers and purchasing agents. Advanced management positions are available to those who enter the work force and demonstrate strong, individual skills and knowledge.

For more information about the Management program, please visit our website at **www.dmacc.edu/programs/marketing/**.

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 semester.

Graduation Requirements

To earn a Management AA or AAS degree, a student must complete all coursework as prescribed and maintain a 2.0 grade point average.

Management AA Degree

Required Courses

MGT 101 Principles of Management	3
MKT 145 Sales Management	3
MGT 128 Organizational Behavior	3
MGT 170 Human Resource Management	3
ACC 131 Principles of Accounting I	4
ECN 120* Principles of Macroeconomics	3
ECN 130* Principles of Microeconomics	3
SDV 108+ The College Experience	1

TOTAL 23

**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 requirements and 3 credits of Distributive AA Core requirements.*

+Students accepted into the Honors Program may take HON 101 in place of SDV 108 for 1 credit of Distributive AA Core.

COMPLETE REMAINING AA DEGREE CORE REQUIREMENTS AS FOLLOWS:..... 41

Communications	9
Social and Behavioral Sciences	6
(two different acronyms plus 3 credits for ECN 120 from above for a total of 9 credits)	
Math and Science	9
Humanities	9
Distributive	6
(plus 4 credits for ECN 130 and SDV 108 from above for a total of 10 credits)	
Electives	2

(Students should check with a DMACC advisor or an advisor at the four-year institution to which they plan to transfer before selecting math and science courses, distributive courses and courses in other areas because certain courses are course prerequisites and/or admission requirements into the College of Business at different colleges and universities.)

Note: To complete this AA degree program, you must meet the Diversity Requirement with a grade of "C" or higher. See the AA/AS section of the DMACC catalog or

TOTAL MINIMUM CREDITS REQUIRED TO COMPLETE THE MANAGEMENT AA DEGREE..... 64

Management AAS Degree

Semester 1—Select 1 Course from Option 1, 1 Course from Option 5 and 1 Course from Option 6

MGT 147	Leadership Development		3
MGT 130	Principles of Supervision		3
CSC 110	Intro to Computers	Opt 1	3
BCA 212	Intro to Computer Business Appl	Opt 1	3
GRD 301	Intro to Desktop Publishing	Opt 1	3
MGT 145	Human Relations in Business	Opt 5	3
PSY 111	Intro to Psychology	Opt 5	3
BUS 112	Business Math	Opt 6	3
MAT 141	Finite Math	Opt 6	4

TOTAL 15

Semester 2—Select 1 Course from Option 2

MKT 140	Selling		3
MGT 194	Relationship Strategies in Business		2
MGT 101	Principles of Management		3
MGT 170	Human Resource Management		3
ADM 221	Career Development Skills		2
ENG 105	Composition I	Opt 2	3
COM 703	Communication Skills	Opt 2	3

TOTAL 16

Semester 3

MGT 800	Business Internship I	4	
MGT 802	Business Internship Seminar I	2	

TOTAL 6

Semester 4—Select 1 Course from Option 3 and 1 Course from Option 4

MGT 128	Organizational Behavior	3	
MKT 110	Principles of Marketing	3	
ACC 131	Principles of Accounting I	Opt 3	4
ACC 111	Intro to Accounting	Opt 3	3
SPC 101	Fundamentals of Oral Comm.	Opt 4	3
SPC 126	Interpersonal & Small Group Comm.	Opt 4	3

TOTAL 12

Term 5—Select 3 Courses from Option 7

MKT 145	Sales Management		3
MGT 164	Total Quality Management		3
MGT 248	Systems & Information Mgmt	Opt 7	3
ACC 132	Principles of Accounting II	Opt 7	4
BUS 102	Intro to Business	Opt 7	3
BUS 148	Small Business Management	Opt 7	3

MKT 160	Principles of Retailing	Opt 7	3
BUS 185	Business Law I	Opt 7	3
ECN 120	Principles of Macroeconomics	Opt 7	3
BUS 278	Employment Law	Opt 7	3
BUS 150	E-Commerce on the Web	Opt 7	3

TOTAL 15

TOTAL CREDITS REQUIRED TO COMPLETE THE AAS DEGREE..... 64

Management Certificate

(see Certificate Section, page 142)

Management Information Systems (MIS)

The Management Information Systems (MIS) degree is designed to allow students to transfer to a four-year program and also qualifies students for positions as programmers and information technology specialists. The program offers two tracks, with the Programming/Database track emphasizing business applications programming. The student studies several programming languages, various levels of operating systems, database systems and the peripheral equipment available in the field. Students who select the Informatics track learn to use technology to advance the needs of businesses. Students master the tools of informatics specialists learning to provide technical assistance, support and advice to individuals and organizations that depend on information technology.

For more information about the Management Information Systems (MIS) program, please visit our website at **www.dmacc.edu/programs/mis**.

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 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 & II or MAT 063).

Students start any semester.

Graduation Requirements

To earn a Management Information Systems (MIS) AS degree, a student must complete all coursework as prescribed and maintain a 2.0 grade point average.

Programming/Database Track

(Prepares students to work for businesses as programmers, software developers and database specialists.)

Required Courses

Semester 1

ACC 131	Principles of Accounting I	4
CIS 125	Intro to Programming Logic w/Lang	3
CSC 110	Intro to Computers	3
ENG 105	Composition I	3
Any AA/AS degree Core BIO, CHM, ENV or PHY Course		4

Semester 2

CIS 171	Java	3
CIS 402	COBOL	3
ACC 132	Principles of Accounting II	4
ENG 106	Composition II	3
SPC 101	Fund of Oral Communication	3

Semester 3–Select 1 Course from Option 1

CIS 505	Structured Systems Analysis		4
CIS 152	Data Structures		3
CIS 303	Introduction to Database		3
ECN 120	Principles of Macroeconomics		3
MAT 141	Finite Mathematics	Opt 1	4
BUS 211	Business Statistics	Opt 1	4

Semester 4–Select 2 Courses from Option 2

CIS 154	Computational Structures		3
ECN 130	Principles of Microeconomics		3
AA/AS degree Core Humanities Course			3
AA/AS degree Core Distributed Course			4
CIS 413	COBOL II	Opt 2	4
CIS 182	JSP and Servlets	Opt 2	3
CIS 215	Server Side Web Programming	Opt 2	3
CIS 588	Computer Organization	Opt 2	3
CIS 332	Database and SQL	Opt 2	3
CIS 338	SQL/Oracle	Opt 2	3

Note: To complete this program, you must meet the Diversity Requirement with a grade of "C" or higher. See the AA/AS section of this catalog for more information about which courses can count toward this requirement.

TOTAL CREDITS REQUIRED TO COMPLETE THIS AS DEGREE, PROGRAMMING/DATABASE TRACK 69

Informatics Track

(Prepares students to work in the business/financial services industry as business analysts, technology specialists, technical trainers, technology managers, quality assurance technicians, etc.)

Required Courses

Semester 1

ACC 131	Principles of Accounting I	4
CIS 125	Intro to Programming Logic w/Lang	3
CSC 110	Intro to Computers	3
ENG 105	Composition I	3
Any AA/AS degree Core BIO, CHM, ENV or PHY Course		4

Semester 2

INF 110	Fundamental Informatics	3
INF 130	Social Informatics	3
ACC 132	Principles of Accounting II	4
ENG 106	Composition II	3
SPC 101	Fund of Oral Communication	3

Semester 3–Select 1 Course from Option 1

INF 220	Human Computer Interaction	3
INF 230	Organization Informatics	3
CIS 303	Introduction to Database	3
ECN 120	Principles of Macroeconomics	3

MAT 141	Finite Mathematics	Opt 1	4
BUS 211	Business Statistics	Opt 1	4

Semester 4

CIS 154	Computational Structures	3
ECN 130	Principles of Microeconomics	3
AA/AS degree Core Humanities Course		3
AA/AS degree Core Distributed Course		4
INF 310	Informatics Security	3
INF 320	Legal Informatics Issues	3

Note: To complete this program, you must meet the Diversity Requirement with a grade of "C" or higher. See the AA/AS section of this catalog for more information about which courses can count toward this requirement.

TOTAL CREDITS REQUIRED TO COMPLETE THIS AS DEGREE, INFORMATICS TRACK 68

Marketing–AA or AAS

Looking for a growth-oriented career? Something fastpaced, ever-changing and challenging, with opportunities for advancement and pay to match? Today a career in Marketing offers all this and more. You could be working for some of the fastest growing companies and brightest business leaders. By using your skills and creativity, you will become part of the future in American business.

The program allows students to choose either an AA or AAS degree. Students who plan to transfer to a four-year college or university should consider the AA degree program. The AA degree will satisfy freshman and sophomore Marketing requirements of four-year colleges if planned carefully with an advisor.

Coursework 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 salespeople 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. The employment outlook in marketing is likely to be steady because the competition for customers makes marketing vital to virtually any business. 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.

For more information about the Marketing program, please visit our website at **www.dmacc.edu/programs/marketing**.

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 semester.

Graduation Requirements

To earn a Marketing AA or AAS degree, a student must complete all coursework as prescribed and maintain a 2.0 grade point average.

Marketing AA Degree

Required Courses

MKT 110	Principles of Marketing	3
MKT 140	Selling	3
MKT 150	Principles of Advertising	3
MKT 115	Business-to-Business Marketing	3
ACC 131	Principles of Accounting I	4
ECN 120*	Principles of Macroeconomics	3
ECN 130*	Principles of Microeconomics	3
SDV 108+	The College Experience	1
		Total 23

**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 requirements and 3 credits of Distributive AA Core requirements.*

+Students accepted into the Honors Program may take HON 101 in place of SDV 108 for 1 credit of Distributive AA Core.

Complete Remaining AA degree Core Requirements as Follows.....41

Communications	9 credits
Social & Behavioral Sciences	6 credits
(two different acronyms) plus 3 credits for ECN 120 from above for a total of 9 credits	
Math & Sciences	9 credits
Humanities	9 credits
Distributive	6 credits

(plus 4 credits for ECN 130 and SDV 108 from above for a total of 10 credits)

Electives 2 credits

Students should check with a DMACC advisor or an advisor at the four-year institution to which they plan to transfer before selecting math and science courses, distributive courses, and courses in other areas because certain courses are course prerequisites and/or admission requirements into the College of Business at different colleges and universities.

Note: To complete this program, you must meet the Diversity Requirement with a grade of "C" or higher. See the AA/AS section of this catalog for more information about which courses can count toward this requirement.

TOTAL CREDITS REQUIRED TO COMPLETE THE MARKETING AA DEGREE..... 64

Marketing AAS Degree

Required Courses

Semester 1–Select 1 Course from Option 1

MKT 110	Principles of Marketing		3
APP 111	Visual Merchandising and Design		3
MKT 140	Selling		3
MGT 147	Leadership Development		3
MGT 145	Human Relations in Business	Opt 1	3
PSY 111	Introduction to Psychology	Opt 1	3
			Total 15

Semester 2–Select 1 Course from Option 2 and 1 Course from Option 3

MKT 150	Principles of Advertising		3
MKT 160	Principles of Retailing		3
MGT 194	Relationship Strategies in Business		2
ADM 221	Career Development Skills		2
CSC 110	Intro to Computers	Opt 2	3
GRD 301	Intro to Desktop Publishing	Opt 2	3
BCA 212	Intro to Computer Business Appl.	Opt 2	3
BUS 112	Business Math	Opt 3	3
MAT 141	Finite Math	Opt 3	4
			Total 16

Semester 3

MGT 800	Business Internship I		4
MGT 802	Business Internship Seminar I		2
			Total 6

Semester 4–Select 1 Course from Option 4

MKT 115	Business to Business Marketing		3
MGT 130	Principles of Supervision		3
MGT 805	Business Internship II		4
MGT 807	Business Internship Seminar II		1
ACC 131	Principles of Accounting I	Opt 4	4
ACC 111	Intro to Accounting	Opt 4	3
			Total 14

Semester 5–Select 1 Course from Option 5, 1 Course from Option 6 and 1 Course from Option 7

MKT 141	Advanced Selling Strategies		3
SPC 101	Fundamentals of Oral Communication		3
ENG 105	Composition I	Opt 5	3
COM 703	Communication Skills	Opt 5	3
MKT 182	Customer Relationship Mgmt	Opt 6	3
ECN 120	Principles of Macroeconomics	Opt 6	3
MGT 101	Principles of Management	Opt 6	3
BUS 148	Small Business Management	Opt 6	3
MKT 199	Sports/Entertainment Marketing	Opt 7	3
BUS 150	E-Commerce on the Web	Opt 7	3
MKT 120	E-Marketing (Fall semester)	Opt 7	3
			Total 15

TOTAL CREDITS REQUIRED TO COMPLETE THE AAS DEGREE..... 66

Medical Assistant

The goal of the Medical Assistant program is to prepare entry-level medical assistants in the cognitive (knowledge), psychomotor (skills) and affective (behavior) learning domains. Medical assistants are the only allied health professionals specifically trained to work in ambulatory settings, such as physicians' offices, clinics and group practices. As multiskilled allied health team members, medical assistants perform a variety of administrative and clinical procedures in these settings.

Students gain a basic knowledge of communication skills, medical terminology, anatomy and physiology, laboratory procedures, administrative procedures and patient care techniques. These content areas are presented in the classroom, practiced in the laboratory setting and utilized in a 10-week supervised practicum experience in an ambulatory setting. Students do not receive pay or any financial remuneration for the practicum 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, FL 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, www.maerb.org, phone: 1-800–228-2262. 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 eligible 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 prevent students from participating in practicum education experiences. Students unable to participate in practicum education will be unable to complete the Medical Assistant program. A felony conviction may prevent applicants from being eligible for the CMA (AAMA) Medical Assistant certification examination.

For more information about the Medical Assistant program, please visit our website at **www.dmacc.edu/programs/medassist**.

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 five errors or less in a five-minute timed assessment.
6. Submit proof of high school graduation or GED prior to enrollment.

Program starts Fall semester.

Graduation Requirements

To earn a Medical Assistant diploma, a student must complete all coursework 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 and MAP 250 & MAP 252. Several courses have corequisites listed in the catalog.

Semester 1–Select 1 Course from Option 1

MAP 544	Human Body–Health and Disease I		4
MAP 129	Medical Terminology		1
MAP 225	Medical Laboratory Procedures I		4
MAP 347	Medical Office Procedures I		3
MAP 110	Medical Office Management I		2
MAP 423	Professional Development		3
ENG 105	Composition I	Opt 1	3
COM 703	Communication Skills	Opt 1	3

Semester 2

MAP 554	Human Body–Health and Disease II		4
MAP 250	Diagnostic Radiography I		2
MAP 118	Medical Office Management II		4
MAP 228	Medical Laboratory Procedures II		3
MAP 348	Medical Office Procedures II		3
PSY 111	General Psychology		3

Semester 3

MAP 606	Professional Development III		1
MAP 252	Diagnostic Radiography II		2
MAP 603	Employment Seminar		1
MAP 624	Practicum		5

TOTAL CREDITS REQUIRED TO COMPLETE THIS DIPLOMA..... 48

Medical Insurance and Coding

(see Certificate Section, page 142)

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 and industrial laboratories.

Results of background checks will be shared with clinical affiliates. Background checks may also be done by the clinical affiliates themselves. Results may prevent placement for clinical/practicum courses, which will affect successful program completion.

For more information about the Medical Laboratory Technology program, please visit our website at **www.dmacc.edu/programs/medlabtech**.

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 chairperson.
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 the 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
   - Math: a minimum COMPASS Algebra score of 53 or ACT score of 20
   - Writing: a minimum COMPASS English score of 70 or ACT score of 19
   - Reading: a minimum COMPASS Reading score of 81 or ACT score of 19.
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. We 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 semester.

Graduation Requirements

To earn a Medical Laboratory Technology AAS degree, a student must complete all coursework as prescribed and maintain a 2.0 grade point average. A grade of "C" or better is required in every MLT course.

Semester 1–Select 1 Course from Options 1, 2 and 3

MLT 120	Urinalysis		3
MLT 115	Clinical Lab Fundamentals		3
BIO 164*	Essentials Anatomy/Physiology	*Opt 1a	5
CHM 122	Intro to General Chemistry	Opt 2	4
CHM 165	General/Inorg Chemistry I	Opt 2	4
PSY 111	Introduction to Psychology	Opt 3	3
SOC 110	Introduction to Sociology	Opt 3	3

Semester 2–Select 1 Course from Options 4 and 5

MLT 232	Advanced Hematology & Coagulation		5
ENG 105	Composition I		3
BIO 732	Health Science Microbiology	Opt 4	4
BIO 186	Microbiology	Opt 4	4
CHM 132	Intro to Organic/Biochemistry	Opt 5	4
CHM 263	Organic Chemistry I	Opt 5	5

Semester 3

MLT 261	Immunohematology		5
MLT 270	Immunology & Serology		2
MLT 180	Clinical Lab Practicum I		1

Semester 4–Select 1 Course from Option 6

MLT 242	Clinical Chemistry		8
MLT 251	Clinical Microbiology		6
SPC 101	Fund of Oral Communication	Opt 6	3
SPC 126	Interpersonal & Small Grp Comm	Opt 6	3

Semester 5

MLT 282	Clinical Laboratory Practicum II	12
MLT 290	Clinical Seminar and Review	2

TOTAL CREDITS REQUIRED TO COMPLETE THIS AAS DEGREE.....73

**Course options for anatomy and physiology in place of BIO 164:*

BIO 733	Health Science Anatomy	Opt 1b	3
AND			
BIO 734	Health Science Physiology	Opt 1b	3
OR			
BIO 168	Anatomy & Physiology I	Opt 1c	4
AND			
BIO 173	Anatomy & Physiology II	Opt 1c	4

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. This program, however, is not designed to prepare the student for direct patient care.

The Medical Office Specialist AAS degree includes an internship. Students are required to find their internship and have it approved by their instructor prior to the start of the semester in which they will be taking the internship class. Most internships require passing a background check. Felonies or other serious charges may keep the student from finding an internship site. Students unable to complete the internship will be unable to complete the Medical Office Specialist AAS degree. The Medical Office Specialist diploma does not require an internship; however, a felony or other serious charge may prevent the student from being employed.

To successfully complete this program, a student must complete all coursework as prescribed and maintain a 2.0 grade point average. A grade of "C-" or better is required in the first course of a sequential course offering before enrolling in the second-level course of the sequence or in the prerequisite course. This includes ADM 157, ADM 215, BCA 133, BCA 212 or CSC 110, HSC 120, HSC 121, MAP 141, MAP 532, MTR 120 and MTR 121.

Upon successful completion of all four semesters, the student is eligible to receive an AAS degree. A student completing only the first three semesters is eligible to receive a diploma.

For more information about the Medical Office Specialist program, please visit our website at **www.dmacc.edu/programs/btec/medofficespecialist.asp**.

Location: Ankeny

Selected courses in this program are offered at other campuses.

Program Entry Requirements

1. Complete an application for admission.
2. Attend any required information/registration session.
3. Satisfy the required assessment by taking the reading and math COMPASS test or equivalent.
4. Complete the required COMPASS testing obtaining a satisfactory score in Writing (70 or higher), ACT writing score of 19 or higher, completion of ENG 060 with a grade of "B" or higher or program chairperson approval.
5. Keyboarding speed of 40 nwpm or above as demonstrated by a five-minute test.

Students start Fall semester.

Graduation Requirements

To earn a Medical Office Specialist diploma or AAS degree, a student must complete all coursework as prescribed and maintain a 2.0 grade point average.

Semester 1

MGT 145	Human Relations in Business	3
ADM 157	Business English	3
HSC 120*	Medical Terminology I	3
BCA 212	Intro Computer Business Applications	3
MTR 120	Medical Transcription I	3
BCA 133	Word Processing Skill Development I	4

(Note: Students must demonstrate a keyboarding speed of 25 NWPM or above by taking a five-minute test before enrolling in BCA 133.)

Semester 2

ADM 221	Career Development Skills	2
HSC 121*	Medical Terminology II	3
BCA 137	Word Processing Skill Dev II	3
ADM 131	Office Calculators	1
MAP 141	Medical Insurance	3
ADM 259	Professional Development	3
MTR 121	Medical Transcription II	3

Semester 3

BUS 112	Business Math	3
MAP 532	Human Body–Health & Disease	3
ADM 215	Medical Office Procedures	3

TOTAL CREDITS REQUIRED TO COMPLETE THE DIPLOMA 46

Semester 4–Select 1 Course from Option 1, 1 Course from Option 2 and 1 Course from Option 3

ADM 154	Business Communication		3
MAP 803	Internship–Medical Office Spec.		3
BCA 213	Intermediate Computer Business Appl		3
ACC 111	Intro to Accounting	Opt 1	3
ACC 131	Principles of Accounting I	Opt 1	4
MAP 150	Adv Medical Billing/Coding	Opt 2	3
MTR 122	Medical Transcription III	Opt 2	3
SPC 101	Fund of Oral Communication	Opt 3	3
SPC 126	Interpersonal & Small Group Comm	Opt 3	3

TOTAL CREDITS REQUIRED TO COMPLETE THE AAS DEGREE 64

**Challenge test available. Must earn 74%.*

Medical Transcriptionist

(see Certificate Section, page 143)

Medicine

Students planning to major in pre-med 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 143)

Mortuary Science–Advanced Standing Diploma

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 Mortuary Science program at Des Moines Area Community College is accredited by the American Board of Funeral Service Education (ABFSE, 3414 Ashland Ave., Suite G, St. Joseph, MO 64506, **www.abfse.org**).

The central aim of each graduate of the DMACC Mortuary Science program is to recognize that they are community members who are sensitive to their responsibility for public health, safety and welfare in caring for human remains. As members of the human services profession, graduates must be knowledgeable of and compliant with federal, state and local regulations, as they participate in the relationship between themselves and the bereaved families they serve.

The Mortuary Science Aims and Purposes are:

1. To enhance the background and knowledge of students about the funeral service profession.
2. To educate students in every phase of funeral service and to help them 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.

For more information about the Mortuary Science program, please visit our website at **funeral.dmacc.edu**.

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 point average of "C" or above.
5. Submit evidence of a minimum of 15 credits earned in general education core, this 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 at the Mortuary Science program website at **http://funeral.dmacc.edu**.
6. Each student must submit an admission recommendation from a licensed funeral director on a form approved by the Mortuary Science program.

Classes start Fall semester only.

Graduation Requirements

To earn a Mortuary Science–Advanced Standing Diploma, a student must complete all coursework as prescribed, maintain a 2.0 grade point average, and earn a grade of "C" or above in all courses in the program including Anatomy and Accounting.

To complete the program in the minimum number of semesters allowed by accreditation standards, students should complete a required anatomy course (BIO 733 or BIO 164), a required accounting course (ACC 111 or ACC 131) and MOR 215 Funeral Law I prior to admission to the Mortuary Science program. If these courses have not been taken prior to admission to the program, the student will register for an anatomy course and Funeral Law I during the Fall semester of the program. During the Summer term, if needed, the student will register for accounting.

Required Courses–Select 1 Course from Option 1 and 1 Course from Option 2

ACC 131	Principles of Accounting I	Opt 1	4
ACC 111	Intro to Accounting	Opt 1	3
BIO 733	Health Science Anatomy	Opt 2	3
BIO 164	Essentials Anatomy/Physiology	Opt 2	5
Human Anatomy Course Approved by the program chairperson		Opt 2	3

(A list of approved Anatomy courses can be found on the program website.)

MOR Courses

MOR 215	Funeral Law I	3
MOR 300	Introduction: Funeral Service	2
MOR 310	Pathology for Mortuary Science	3
MOR 315	Funeral Law II	3
MOR 320	Thanatology	3
MOR 325	Funeral Directing	3

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 360	Thanatochemistry	2
MOR 365	Survey of Infectious Diseases	2
MOR 390	Professional Review*	2
MOR 941	Practicum	4

TOTAL CREDITS REQUIRED TO COMPLETE THIS ADVANCED STANDING DIPLOMA..... 48

**During MOR 390 Professional Review, 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 where you intend to practice. In Iowa, call 515-281–4287.

Network Security Manager

(see Certificate Section, page 144)

Nursing–Advanced Standing

This program offers the opportunity for current Iowa Licensed Practical Nurses to complete an Associate in Applied Science (AAS) degree in Nursing. Students enter the third semester of the Associate degree Nursing curriculum. Upon successful completion of Semesters 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 Inc., (NLNAC, Inc., 3343 Peachtree Road NE, Suite 850, Atlanta, GA 30326, 866-747-9965).

For more information about the Nursing-Advanced Standing program, please visit our website at **www.dmacc.edu/programs/nursing**.

Locations: Ankeny, Boone–Summer and Fall semester. Carroll–Summer term only.

Evening option may be available on select campuses. Liberal arts courses may be taken on any campus where they are offered.

Program Entry Requirements

1. Complete an application for admission to the Advanced Standing Nursing program.
2. Attend a required Nursing information session, a registration session and a Nursing program orientation.
3. Provide proof of completion of an approved Practical Nursing program with a cumulative GPA of 2.0 or above.
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 on the required PN-to-ADN Assessment Test.
8. Complete the following courses with a grade of "C" or better (not C-) in each:
   a. BIO 733–Health Science Anatomy
   b. BIO 734–Health Science Physiology
   c. ENG 105–Composition I
   d. PSY 111–Introduction to Psychology
   e. PSY 121–Developmental Psychology
9. Provide proof of high school graduation or GED completion.

Criminal background checks must be completed by 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 abuse warrants prohibition from clinical education experience. Students unable to participate in clinical education will be unable to complete the Nursing program. In accordance with DMACC's contract with affiliated agencies, results of the criminal record/child and adult abuse registry checks will be released to contracted agencies only upon their request.

Proof of immunizations and annual TB testing is required of all Nursing students. A physical exam must be completed within one year prior to program entry. 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 before beginning clinical rotations. Proof of a current flu vaccination is required of all Nursing students by January of each year.

The Advanced Standing Nursing program utilizes **www.CertifiedBackground.com** to track immunizations, health records and CPR certification for each student after their acceptance into the program. Students must wait for directions, which will be provided at the required Advanced Standing Nursing Registration meeting, before uploading their CPR and health records. Students are responsible for the cost of this service and any related expenses.

Graduation Requirements

To earn an Associate degree (AAS) in Nursing, a student must complete all coursework as prescribed and have a grade of "C" or above in all ADN and support courses in the curriculum. In order to progress to the next semester, courses must be successfully completed in the semester identified or in a previous semester.

In addition, completion of the Associate degree (AAS) in Nursing requires the successful completion of the required standardized exit exam taken during Semester 5 of the curriculum.

Prerequisites

BIO 733	Health Science Anatomy	3
BIO 734	Health Science Physiology	3
ENG 105	Composition I	3
PSY 111	Introduction to Psychology	3
PSY 121	Developmental Psychology	3

Semester 3–Select 1 Course from Option 1

ADN 126	Passport to ADN Nursing		2
SPC 126	Interpersonal & Small Group Communication		3
BIO 732	Health Science Microbiology	Opt 1	4
BIO 186	Microbiology	Opt 1	4

Semester 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

Semester 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 AAS DEGREE.....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 Semesters 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 a hospital, Long-Term care facility or clinic.

Upon successful completion of two semesters, the student earns a diploma and is eligible to take the National Council Licensure Exam for Practical Nurse Licensure (NCLEX–PN).

An Associate in Applied Science (AAS) degree in Nursing and a career as a Registered Nurse are available to students who are eligible to continue in the program and successfully complete Semesters 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 other community-based healthcare settings.

Upon successful completion of Semesters 1–5 of the nursing curriculum, the student is eligible to take the National Council Licensure Exam for Registered Nurse Licensure (NCLEX–RN).

For more information about the Practical Nursing and Associate Degree Nursing program, please visit our website at **www.dmacc.edu/programs/nursing**.

Locations: Ankeny, Boone, Carroll, Newton–Practical Nursing odd-numbered years only starting Fall 2011, Associate Degree Nursing pilot program Fall 2012, Urban–Evening (part-time) option (requires Summer attendance)

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., 3343 Peachtree Road NE, Suite 850, Atlanta, GA 30326, 866-747-9965.

Program Entry Requirements

1. Complete an application for admission to the Nursing program.
2. Attend 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, mathematics and English and language usage.
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" 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 must be completed by 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 abuse warrants prohibition from clinical education experience. Students unable to participate in clinical education will be unable to complete the Nursing program. In accordance with DMACC's contract with affiliated agencies, results of the criminal record/child and adult abuse registry checks will be released to contracted agencies only upon their request.

Proof of immunizations and annual TB testing is required of all Nursing students. A physical exam must be completed within one year prior to program entry. 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 seasonal flu vaccination is required of all Nursing students by January of each year.

The Nursing program utilizes **www.CertifiedBackground.com** to track immunizations, health records and CPR certification of each student **after their acceptance** into the program. Students must wait for directions, which will be provided at the required Nursing Registration meeting, before uploading their CPR and health records. Students are responsible for the cost of this service and any related expenses.

First-year nursing students are in a new program of study and are considered to be freshmen by the Federal Direct Student Loan Program, regardless of prior credit accumulation. Freshman loan limits will apply.

Practical Nursing starts:

Ankeny, Boone—Fall and Spring semesters;
Carroll—Fall semester only;
Newton—Fall semester only in odd-numbered years effective Fall 2011;
Urban—Evening option, Fall semester only in even-numbered years.

Associate Degree Nursing starts:

Ankeny, Boone—Summer term and Fall semesters

Carroll—Summer term only

Urban—Evening option, Spring semester only in even-numbered years

Newton—Fall semester only starting with a pilot program Fall 2012.

Students who start a program on one campus will not be permitted to transfer to another campus mid-program. For example, a student starting the Practical Nursing (PN) program in Boone must complete the program in Boone. Students who successfully complete the Practical Nursing program and satisfy the progression requirements may apply to special start into the ADN program on a different campus pending space available. There are no guarantees.

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 semester, these courses must be successfully completed in the semester identified or in a previous semester.

Students who complete the PN program must satisfy grade/assessment requirements to be eligible to be admitted to the ADN program. Continuation in the Associate degree program at the Ankeny, Boone, Carroll, Urban and Newton Campuses requires successful completion of the following progression requirements: Semester 1 courses (PNN 151, PNN 153, PNN 152) at 78% or better and successful completion of all Semester 2 courses (PNN 605, PNN 606 and PNN 351) at 80% or better OR successful completion of the required standardized progression exam taken during Semester 2.

Graduation Requirements

To earn a Practical Nursing diploma, a student must complete all coursework as prescribed in Semesters 1 and 2 and have "C" or above in all Nursing and support courses in the curriculum and complete the standardized exit exam taken upon completion of PN coursework.

To earn an Associate in Applied Science (AAS) degree in Nursing, a student must complete all coursework as prescribed in Semesters 1–5, meet the progression requirements and have a grade of "C" or above in all PNN, ADN, support courses in the curriculum and successfully complete the required standardized exit exam taken during Semester 5 of the curriculum.

Practical Nursing

Students should take required liberal arts support courses in advance of the PNN courses when possible.

Prerequisite

BIO 733	Health Science Anatomy	3
PSY 111	Introduction to Psychology	3

Semester 1

BIO 734	Health Science Physiology	3
PNN 151	Fundamentals of Nursing	4
PNN 152	Nursing Practice I	4
PNN 153	Success in Nursing	2
PSY 121	Developmental Psychology	3

Semester 2

ENG 105	Composition I	3
PNN 605	Nursing Practice II	5
PNN 606	Nursing Practice III	5
PNN 351	Practical Nursing Roles	1

TOTAL CREDITS REQUIRED TO COMPLETE THE DIPLOMA 36

Associate Degree Nursing

Students should take required liberal arts support courses in advance of ADN courses when possible.

STUDENTS MUST COMPLETE SEMESTERS 1 AND 2 AND SATISFY PROGRESSION REQUIREMENTS PRIOR TO ENROLLING IN ADN COURSES.

Semester 3–Select 1 Course from Option 1

SPC 126	Interpersonal and Small Group Comm.		3
BIO 732	Health Science Microbiology	Opt 1	4
BIO 186	Microbiology	Opt 1	4

Semester 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

Semester 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 CREDITS REQUIRED TO COMPLETE THE AAS DEGREE..... 71

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. This program emphasizes the development of multifunctional office and computer skills.

Students gain a basic knowledge of English, math, computer applications and human relations skills. By selecting an emphasis during Semester 2, students are able to customize their curriculum and gain specialized skills.

To successfully complete this program, a student must complete all coursework as prescribed and maintain a 2.0 grade point average. A grade of "C-" or better is required in the first course of a sequential course

offering before enrolling in the second-level course of the sequence or in a prerequisite course. This includes ADM 157, ADM 162, BCA 133, BCA 213 and BCA 212 or CSC 110.

For more information about the Office Assistant program, please visit our website at **www.dmacc.edu/programs/btec/officeassistant.asp**.

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 semester.

Graduation Requirements

To earn an Office Assistant diploma, a student must complete all coursework as prescribed and maintain a 2.0 grade point average.

Semester 1

BUS 112	Business Math	3
MGT 145	Human Relations in Business	3
ADM 157	Business English	3
ADM 131	Office Calculators	1
BCA 212	Intro Computer Business Appl	3
BCA 133	Word Processing Skill Development I	4

(Note: Students must demonstrate a keyboarding speed of 25 NWPM or above, by taking a five-minute test, before enrolling in BCA 133.)

Semester 2

ADM 221	Career Development Skills	2
ADM 162	Office Procedures	3
ADM 154	Business Communication	3
ADM 259	Professional Development	3

In addition to the required courses in Semester 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

**Meet with the internship supervisor the semester before enrolling.*

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	Intermed Computer Business Appl	3

TOTAL CREDITS REQUIRED TO COMPLETE THIS DIPLOMA 34

Office Specialist

(see Certificate Section, page 144)

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.For more information about the Optometric/Ophthalmic Technician program, please visit our website at **www.dmacc.edu/programs/optech**.

Location: Ankeny

Program Entry Requirements

1. Complete an application for admission.
2. Attend any required information/registration session.
3. Satisfy the required assessment by taking the reading and English COMPASS test or equivalent.
4. Obtain a minimum COMPASS Pre-algebra score of 24 or ACT Math score of 14.
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 semester.

Graduation Requirements

To earn an Optometric/Ophthalmic Technician diploma, a student must complete all coursework as prescribed and maintain a 2.0 grade point average. A grade of "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 in other semesters 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 chairperson.

Semester 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
Semester 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 DIPLOMA..... 39

Paramedic Specialist

The Emergency Medical Technician—Paramedic Specialist AAS degree prepares individuals to use critical thinking skills to provide medical treatment for patients with illness or injury-related disease. The Paramedic Specialist provides medical care for patients, performing skills in a variety of settings including pre-hospital, emergency departments, critical care units and cardiac catheter labs. Course content includes anatomy and physiology, pathology and the identification and initial diagnosis of disease and injury in a variety of populations. Paramedic Specialists use advanced medical and surgical skills that may include initiation of advanced airway management techniques, interpretation of electrocardiograms and advanced cardiac and trauma life support protocols. Instruction in rescue operations, crisis scene management and patient triage is included.

This program will prepare students to become a Paramedic Specialist. This program provides students with the necessary preparatory courses for seeking certification as a Nationally Registered Paramedic, which leads to certification as a Paramedic Specialist in the state of Iowa. National certification will require a passing score on a nationally recognized certification exam of Emergency Medical Technician—Paramedic (NREMT-P).

In addition, the AAS program provides an avenue of specialized study in one of three categories: public administration, fire science or advanced clinical knowledge. These three tracks offer the Paramedic Specialist the ability to obtain a higher level of understanding in their respective areas. Each track requires the foundation courses to obtain an AAS degree and delves more deeply into the particular area of interest.

For those seeking management, **the public administration track** offers a broader understanding of management concepts and principles. While it does not provide the student a comprehensive education in management, it provides a flavor of what management is all about.

The **clinical track** enhances the Paramedic Specialist with an emphasis on the sciences. Anatomy and physiology, chemistry and physics afford students the basic requirements toward a variety of degrees. These students will have the basics to opt into a degree in nursing or other medical professions.

The **fire science track** prepares the paramedic specialist for application to the fire service. While it will not make the Paramedic Specialist a firefighter, it offers background knowledge in building construction, fire suppression and sprinkler systems. The student may opt to pursue a Fire Science degree at a later point or obtain their Firefighter I and Firefighter II training from the Fire Service Training Bureau.

This unique program holds the Paramedic Specialist as the foundation of the program, but provides the student with an opportunity to broaden their horizons and begin to experience the various facets of job opportunities awaiting them.

Criminal background checks will be completed on each student. Criminal convictions or documented history of abuse may delay or prevent students from participation in Paramedic Specialist education experiences. Students unable to participate in Paramedic Specialist education will be unable to complete the Paramedic Specialist program.

For more information about the Paramedic Specialist program, please visit our website at **www.dmacc.edu/programs/health/paramedic**.

Location: Ankeny

Program Entry Requirements

1. Complete an application for admission.
2. Attend any required information/registration session.
3. Submit a copy of current State of Iowa EMT-Basic, Iowa EMT-Intermediate/85 or Iowa EMT-Paramedic certification (I/99). All students must have an Iowa EMT-B or EMT-I certification.
4. Submit evidence of a grade of "C" or better in one year of high school biology OR a grade of "C" or better in DMACC Academic Achievement Center Biology I OR equivalent.
5. Obtain a minimum score of 81 in Reading on the COMPASS test or a minimum ACT Reading score of 19.
6. Obtain a minimum score of 46 in Algebra on the COMPASS test OR a minimum ACT math score of 19 OR obtain a grade of "C" or better in MAT 073 or equivalent.
7. Obtain a minimum score of 70 in English on the COMPASS test OR a minimum ACT English score of 19 OR a grade of "C" or better in ENG 061 or equivalent.
8. Submit evidence of a grade of "C" or better in one year of high school chemistry OR a grade of "C" or better in DMACC Academic Achievement Center Chemistry I and II OR equivalent.

Students start Fall semester.

Graduation Requirements

To earn a Paramedic Specialist AAS degree, a student must complete all coursework as prescribed and maintain a 2.0 grade point average. A grade of "C" or better is required in all EMS courses.

All Paramedic Specialist AAS degree students take courses listed in Semesters 1–4. Prior to Semester 5, students must choose the Clinical Emphasis, Fire Science Emphasis or the Public Administration Emphasis and take those courses listed for Semesters 5 and 6.

Semester 1

EMS 460	Role of the Paramedic	2
EMS 463	Medical/Legal/Ethical Issues	2
EMS 467	Prin. of Pathophysiology I	7
EMS 468	Prin. of Pathophysiology II	7

Semester 2

EMS 470	Patient Assessment	4
EMS 473	Medical Emergencies	7
EMS 476	Trauma	7

Semester 3

EMS 480	Special Considerations	6
EMS 483	Operations	4

Semester 4

ENG 105	Composition I	3
PSY 111	Introduction to Psychology	3
BIO 112	General Biology I	4
PHI 105	Introduction to Ethics	3

Semester 5–Choose Clinical Emphasis, Fire Science Emphasis or Public Administration Emphasis

CLINICAL EMPHASIS–
Select 1 Course from Option 1 and 1 Course from Option 2

BIO 168	Anatomy & Physiology I		4
SPC 101	Fund. of Oral Communication	Opt 1	3
SPC 126	Interper/Small Group Comm.	Opt 1	3
CHM 122	Intro to General Chemistry	Opt 2	4
CHM 165	General/Inorganic Chem I	Opt 2	4
SOC 110	Intro to Sociology		3

FIRE SCIENCE EMPHASIS–Select 1 Course from Option 2

Any AAS General Education Required Math Course			3–5
CHM 122	Intro to General Chemistry	Opt 2	4
CHM 165	General/Inorganic Chem I	Opt 2	4
POL 112	American State/Local Gov't		3
FIR 230	Fire Behavior & Investigation		3

PUBLIC ADMINISTRATION EMPHASIS–
Select 1 Course from Option 1 and 1 Course from Option 3

SPC 101	Fund. of Oral Communication	Opt 1	3
SPC 126	Interper/Small Group Comm.	Opt 1	3
Any AAS General Education Required Math Course			3–5
PSY 241	Abnormal Psychology	Opt 3	3
PSY 251	Social Psychology	Opt 3	3
POL 171	Intro to Public Administration		3

Semester 6

CLINICAL EMPHASIS–Select 1 Course from Option 3

PSY 241	Abnormal Psychology	Opt 3	3
PSY 251	Social Psychology	Opt 3	3
BIO 173	Anatomy & Physiology II		4

FIRE SCIENCE EMPHASIS–Select 1 Course from Option 4

FIR 200	Occupational Safety/Health in EMS		3
FIR 152	Fire Protection Systems		3
FIR 212	Emergency Scene Mgmt	Opt 4	3
FIR 124	Building Construction	Opt 4	3

PUBLIC ADMINISTRATION EMPHASIS–
Select 1 Course from Option 5

MGT 145	Human Relations in Business		3
ECN 120	Principles of Macroeconomics	Opt 5	3
ECN 130	Principles of Microeconomics	Opt 5	3
SOC 110	Introduction to Sociology		3

TOTAL CREDITS REQUIRED TO COMPLETE THE PARAMEDIC SPECIALIST AAS DEGREE–CLINICAL EMPHASIS 80

TOTAL CREDITS REQUIRED TO COMPLETE THE PARAMEDIC SPECIALIST AAS DEGREE–FIRE SCIENCE EMPHASIS 81

TOTAL CREDITS REQUIRED TO COMPLETE THE PARAMEDIC SPECIALIST AAS DEGREE–PUBLIC ADMIN. EMPHASIS 80

Paramedic Specialist Certificate

(see Certificate Section, page 144)

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 the necessary preparatory courses for seeking certification. Certification will require a passing score on a nationally recognized certification exam such as the PTCE (Pharmacy Technician Certification Exam) 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 a hospital or custom 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 rotations.

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 and current certification by either the American Heart Association CPR for the Health Care 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.

For more information about the Pharmacy Technician program, please visit our website at **www.dmacc.edu/programs/pharmacytech**.

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 completion.
4. Obtain minimum COMPASS pre-algebra score of 39 or minimum ACT math score of 14.
5. Obtain minimum COMPASS English score of 70 or minimum ACT writing score of 19.
6. Obtain minimum COMPASS reading score of 81 or minimum ACT reading score of 19.
7. Obtain a score of at least 35 NWPM with five errors or fewer on the typing/word processing skill test. Students who do not achieve a 35 NWPM score on the typing test must meet with the program chairperson.
8. Completion of one year of high school algebra with a "C" or better or take MAT 063 in their first semester.
9. Completion of one year of high school biology or chemistry or equivalent with a "C" or better is strongly recommended.

Students start Fall or Spring semester.

Graduation Requirements

To earn a Pharmacy Technician diploma, a student must complete all coursework 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.

Semester 1

PHR 100	Pharm Technician Orientation	2
PHR 101	Pharmacy Operations I	3
PHR 123	Pharmacology I	3
BIO 733	Health Science Anatomy	3
MAP 129	Medical Terminology	1

Semester 2

PHR 135	Phrm. Calc. & Compounding	3
PHR 102	Pharmacy Operations II	3
PHR 124	Pharmacology II	3
PHR 140	Pharmacy Law	1
PHR 801	Pharm Technician Internship I	2
ENG 105	Composition I	3

Semester 3–Select 1 Course from Option 1

PHR 802	Pharm Technician Internship II		3
PSY 111	Introduction to Psychology		3
ENG 106	Composition II	Opt 1	3
SPC 101	Fundamentals of Oral Communication	Opt 1	3
CHM 122	Intro to General Chemistry	Opt 1	4
CHM 165	General/Inorg Chemistry I	Opt 1	4
BIO 732	Health Science Microbiology	Opt 1	4
BIO 734	Health Science Physiology	Opt 1	3

TOTAL CREDITS REQUIRED TO COMPLETE THIS DIPLOMA..... 36

Phlebotomy

(see Certificate Section, page 145)

Photography

The Photography diploma program is designed to prepare students for employment 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.

For more information about the Photography program, please visit our website at **www.dmacc.edu/programs/photography**.

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 semester.

Graduation Requirements

To earn a Photography diploma, a student must complete all required coursework as prescribed and maintain a 2.0 grade point average.

FALL START

Semester 1–Fall

ART 184	Principles of Photography	3
ART 186	Principles Digital Photography	3
ART 289	Photojournalism	3

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

SPC 101	Fund of Oral Communication	Opt 1	3
SPC 126	Interpersonal & Small Grp Comm	Opt 1	3
ENG 105	Composition I	Opt 1	3
BIO 104	Introductory Biology w/Lab	Opt 2	3
BIO 138	Field Ecology	Opt 2	3
ENV 115	Environmental Science	Opt 2	3

Semester 2–Spring

ART 226	Alternative Photo Processes		3
ART 291	Travel Photography		3
ART 292	Studio Photography		3
BUS 112	Business Math		3

Select 1 Course from Option 3

GEO 111	Introduction to Geography	Opt 3	3
HIS 153	U.S. History Since 1877	Opt 3	4
PSY 261	Human Sexuality	Opt 3	3
SOC 120	Marriage & Family	Opt 3	3
PSY 111	Introduction to Psychology	Opt 3	3

Semester 3–Summer

ART 929	Individual Projects	6

TOTAL CREDITS REQUIRED TO COMPLETE THIS DIPLOMA..... 36

SPRING START

Semester 1–Spring

ART 184	Principles of Photography	3
ART 186	Principles Digital Photography	3
ART 289	Photojournalism	3

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

SPC 101	Fund of Oral Communication	Opt 1	3
SPC 126	Interpersonal & Small Grp Comm	Opt 1	3
ENG 105	Composition I	Opt 1	3
BIO 104	Introductory Biology w/Lab	Opt 2	3
BIO 138	Field Ecology	Opt 2	3
ENV 115	Environmental Science	Opt 2	3

Semester 2–Summer

ART 226	Alternative Photo Processes	3
ART 291	Travel Photography	3
ART 292	Studio Photography	3

Semester 3–Fall

ART 929	Individual Projects	6
BUS 112	Business Math	3

Select 1 Course from Option 3

GEO 111	Introduction to Geography	Opt 3	3
HIS 153	U.S. History Since 1877	Opt 3	4
PSY 261	Human Sexuality	Opt 3	3
SOC 120	Marriage & Family	Opt 3	3
PSY 111	Introduction to Psychology	Opt 3	3

TOTAL CREDITS REQUIRED TO COMPLETE THIS DIPLOMA..... 36

SUMMER START

Semester 1–Summer

ART 184	Principles of Photography	3
ART 186	Principles Digital Photography	3
ART 289	Photojournalism	3

Semester 2–Fall

ART 226	Alternative Photo Processes	3
ART 291	Travel Photography	3
ART 292	Studio Photography	3

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

SPC 101	Fund of Oral Communication	Opt 1	3
SPC 126	Interpersonal & Small Grp Comm	Opt 1	3
ENG 105	Composition I	Opt 1	3
BIO 104	Introductory Biology w/Lab	Opt 2	3
BIO 138	Field Ecology	Opt 2	3
ENV 115	Environmental Science	Opt 2	3

Semester 3–Spring

ART 929	Individual Projects	6
BUS 112	Business Math	3

Select 1 Course from Option 3:

GEO 111	Introduction to Geography	Opt 3	3
HIS 153	U.S. History Since 1877	Opt 3	4
PSY 261	Human Sexuality	Opt 3	3
SOC 120	Marriage & Family	Opt 3	3
PSY 111	Introduction to Psychology	Opt 3	3

TOTAL CREDITS REQUIRED TO COMPLETE THIS DIPLOMA..... 36

Printing Technologies

(see Certificate Section, page 145)

Respiratory Therapy

The Respiratory Therapy program provides students the opportunity to learn the dynamic allied health profession of respiratory therapy. Respiratory therapists are 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 experience in local healthcare facilities. Graduates will acquire the knowledge, skills and attitudes needed to begin successful careers as professional respiratory therapists.

Graduates of the program receive an Associate of Applied Science (AAS) degree. The program is accredited by the Commission on Accreditation for Respiratory Care (CoARC) and graduates are eligible for 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 48 other state boards licensing 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, which may delay or deny placement for clinical/practicum courses. This will affect successful program completion.

For more information about the Respiratory Therapy program, please visit our website at **www.dmacc.edu/programs/respiratorytherapy**.

Location: Ankeny

Program Entry Requirements

1. Complete an application for admission.
2. Satisfy the assessment requirement.
3. Meet with a Respiratory Therapy faculty advisor.
4. Submit to Admissions office evidence of high school graduation or GED completion prior to enrollment.
5. 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).
6. 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).
7. 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 semester.

Graduation Requirements

To earn a Respiratory Therapy AAS degree, a student must complete all coursework as prescribed and maintain a 2.0 grade point average. A minimum of grade "C" or above is required in all RCP courses.

Semester 1

RCP 100	Intro to Respiratory Care		3
RCP 240	Respiratory Therapeutics		4
RCP 250	Cardio/Pulmonary Therapeutics		4
CHM 122	Introduction to General Chemistry		4

Semester 2–Select 1 Course from Option 1

RCP 360	Cardio/Pulmonary Renal Pathophysiology		5
RCP 400	Respiratory Therapy Pharmacology		3
RCP 700	Respiratory Therapy Practicum I		4
BIO 734	Health Science Physiology	Opt 1	3
BIO 164	Essentials Anatomy & Physiology	Opt 1	5

Semester 3–Select 1 Course from Option 2

RCP 601	Neonatal/Pediatric Respiratory Therapy		4
RCP 705	Respiratory Therapy Practicum II		5
ENG 105	Composition I	Opt 2	3
COM 703	Communication Skills	Opt 2	3

Semester 4–Select 1 Course from Option 3

RCP 500	Advanced Respiratory Therapy		5
RCP 710	Respiratory Therapy Practicum III		7
BIO 732	Health Science Microbiology	Opt 3	4
BIO 186	Microbiology	Opt 3	4

Semester 5–Select 1 Course from Option 4

RCP 410	Cardio/Pulmonary Diagnostics		3
RCP 715	Respiratory Therapy Practicum IV		7
PSY 111	Intro to Psychology	Opt 4	3
PSY 102	Human and Work Relations	Opt 4	3
SOC 110	Introduction to Sociology	Opt 4	3
MGT 145	Human Relations in Business	Opt 4	3

Semester 6

RCP 800	Respiratory Therapy Mgmt & Ethics	3
RCP 720	Respiratory Therapy Practicum V	5

TOTAL CREDITS REQUIRED TO COMPLETE THIS AAS DEGREE.....79

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 an almost 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 business ownership.

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.

For more information about the Retailing program, please visit our website at **www.dmacc.edu/programs/marketing**.

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 semester.

Graduation Requirements

To earn a Retailing diploma, a student must complete all coursework as prescribed and maintain a 2.0 grade point average.

Semester 1–Select 1 Course from Option 1

APP 111	Visual Merchandising & Design		3
MKT 140	Selling		3
MKT 160	Principles of Retailing		3
MGT 147	Leadership Development		3
ADM 221	Career Development Skills		2
MGT 145	Human Relations in Business	Opt 1	3
PSY 111	Introduction to Psychology	Opt 1	3
			Total 17

Semester 2–Select 1 Course from Option 2 and 1 Course from Option 3

MKT 150	Principles of Advertising		3
MGT 194	Relationship Strategies in Business		2
MKT 182	Customer Relationship Mgmt		3
ENG 105	Composition I	Opt 2	3
COM 703	Communication Skills	Opt 2	3
BUS 102	Intro to Business	Opt 3	3

MKT 110	Principles of Marketing	Opt 3	3
MKT 120	E-Marketing (Fall only)	Opt 3	3
BUS 148	Small Business Management	Opt 3	3
			Total 14

Semester 3–Select 1 Course from Option 4

BUS 112	Business Math	Opt 4	3
MAT 141	Finite Math	Opt 4	4
MGT 800	Business Internship I		4
MGT 802	Business Internship Seminar I		2
			Total 9

TOTAL CREDITS REQUIRED TO COMPLETE THIS DIPLOMA 40

Retailing Certificate

(see Certificate Section, page 145)

Sales

(see Certificate Section, page 146)

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 semester. 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 at local, state and national levels through involvement in the Sales and Management Club.

For more information about the Sales and Management program, please visit our website at **www.dmacc.edu/programs/marketing**.

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 semester.

Graduation Requirements

To earn a Sales and Management diploma, a student must complete all coursework as prescribed and maintain a 2.0 grade point average.

Semester 1–Select 1 Course from Option 1, 1 Course from Option 5 and 1 Course from Option 6

MKT 140	Selling		3
MGT 147	Leadership Development		3
CSC 110	Intro to Computers	Opt 1	3
GRD 301	Intro to Desktop Publishing	Opt 1	3
BCA 212	Intro to Computer Business Appl	Opt 1	3
BUS 112	Business Math	Opt 5	3
MAT 141	Finite Math	Opt 5	4
MGT 145	Human Relations in Business	Opt 6	3
PSY 111	Introduction to Psychology	Opt 6	3
			Total 15

Semester 2–Select 1 Course from Option 2, 1 Course from Option 3 and 1 Course from Option 4

MKT 141	Advanced Selling Strategies		3
MGT 194	Relationship Strategies in Business		2
ADM 221	Career Development Skills		2
MGT 101	Principles of Management	Opt 2	3
MKT 145	Sales Management	Opt 2	3
MGT 130	Principles of Supervision	Opt 2	3
ENG 105	Composition I	Opt 3	3
COM 703	Communication Skills	Opt 3	3
MKT 110	Principles of Marketing	Opt 4	3
BUS 102	Intro to Business	Opt 4	3
BUS 150	E-Commerce on the Web	Opt 4	3
			Total 16

Semester 3

MGT 800	Business Internship I	4
MGT 802	Business Internship Seminar I	2
		Total 6

TOTAL CREDITS REQUIRED TO COMPLETE THIS DIPLOMA 37

Supervision

(see Certificate Section, page 146)

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. Prior criminal records may also prevent applicants from being eligible for the National Exam. Most employers perform criminal history and dependent adult/child abuse background checks.

The DMACC Surgical Technology program is accredited by the Commission on Accreditation of Allied Health Education Programs (CAAHEP); 1361 Park Street; Clearwater, FL 33756, Phone: 727-210–2350, Fax: 727-210–2354; **www.caahep.org**.

Accreditation allows students to be eligible to take a certification examination after program completion.

For more information about the Surgical Technology program, please visit our website at **www.dmacc.edu/programs/surgicaltech**.

Location: Urban

Selected courses in this program are offered at other campuses.

Program Entry Requirements

1. Complete an application for admission.
2. Attend required Surgical Technology information session. Contact advisor for dates.
3. Satisfy DMACC's assessment requirement.
4. Satisfy Hobet V assessment requirement or Tease V assessment.
5. 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).
6. Submit proof of high school graduation or GED prior to enrollment.
7. Submit evidence of grade "C" or better in BIO 186 Microbiology or BIO 732 Health Science Microbiology.
8. Submit evidence of grade "C" or better in BIO 733 Health Science Anatomy AND BIO 734 Health Science Physiology OR BIO 168 Anatomy & Physiology I AND BIO 173 Anatomy & Physiology II.

Students start Fall semester.

Graduation Requirements

To earn a Surgical Technology diploma, a student must complete all coursework as prescribed in Semesters 1–3 and have a "C" or better in all Surgical Technology courses and support courses. In order to progress to the next semester, these courses must be successfully completed in the semester identified or in a previous semester.

Semester 1–Select 1 Course from Option 1 and 1 Course from Option 2

SUR 130	Intro to Surgical Technology		2
SUR 140	Fundamentals of Surgical Tech		5
SUR 150	Med Terminology for Surg Tech		2
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

Semester 2–Select 1 Course from Option 3

SUR 420	Pharmacology for the Surg Tech		2
SUR 805	Clinical Practicum I		5
SUR 200	Surg Procedures/Techniques I		5
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

Semester 3

SUR 202	Surg Procedures/Techniques II	3
SUR 810	Clinical Practicum II	5

TOTAL CREDITS REQUIRED TO COMPLETE THIS DIPLOMA 38

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 forces 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 the installation and repair of network services. Careers can be found at local telephone companies, hospitals, financial institutions, municipalities and a variety of other companies.

For more information about the Telecommunications Technology program, please visit our website at **www.dmacc.edu/west/telecom**.

Location: West

Selected courses in this program are offered at other campuses.

Program Entry Requirements

1. Complete an application for admission.
2. Attend any required information/registration session.
3. Obtain minimum COMPASS pre-algebra score of 40 or ACT math score of 14.
4. Submit proof of high school graduation or GED completion.

Students start any semester.

(For students starting the program in a semester other than Fall, please visit with the program chair or advisor to assist with proper course sequencing.)

Graduation Requirements

To earn a Telecommunications Technology AAS degree, a student must complete all coursework as prescribed and maintain a 2.0 grade point average.

Semester 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

Semester 2

CSC 110	Intro to Computers	3
TEL 220	Telecommunications II	4
TEL 223	Telecom Transport Lab	3
TEL 232	Data Communications	3

Semester 3

TEL 230	Advanced Topics in Telecom	4
TEL 233	Advanced Topics in Telecom Lab	3
Option 1 Course		3

Semester 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

Semester 5

BUS 102	Intro to Business	3
ENG 105	Composition I	3
Option 1 Course		3
Option 1 Course		3

Students may choose from the option course categories listed below.

Students may meet with their program advisor for guidance and recommendation regarding appropriate option courses. Course prerequisites must be fulfilled prior to enrolling in option courses.

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 AAS DEGREE..... 65

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 and 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.

For more information about the Tool & Diemaking program, please visit our website at **www.dmacc.edu/machining**.

Location: 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 semester.

(If you wish to start the program in the Spring or Summer, please contact the program chair at 515-964-6416 to discuss proper sequencing of courses.)

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 semester.

Graduation Requirements

To earn a Machinist Technology or Diemaking diploma, or a Tool & Diemaking AAS degree, a student must complete all coursework as prescribed and maintain a 2.0 grade point average.

*(Note: For those students who only wish to complete the CNC Operator Certificate, the 10 courses **bolded** below are the courses needed to complete the CNC Operator Certificate.)*

All Students Must Complete the Following AAS degree Core 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

Machinist Technology Diploma

Students who choose the Machinist Technology Diploma option must complete the following courses:

Semester 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

Semester 2

MFG 252	Engine Lathe Theory II	2
MFG 253	Engine Lathe Operations Lab II	3
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

Semester 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 Core Requirements (from above)	12

**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).*

Option 4 is only available with program chairperson approval and company sponsorship.

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 program.

Students Who Choose the Diemaking Diploma Option Must Complete the Following Courses:

Semester 4

CAD 184	SolidWorks for Die Design	3
CAD 139	Intro to CAD/CAM	3
MFG 402	Basic Diemaking Theory	4
MFG 403	Basic Diemaking Lab	6

Semester 5

MFG 411	Progressive Die Design	3
MFG 412	Advanced Diemaking Theory	4
MFG 413	Advanced Diemaking Lab	6
MFG 381	EDM Fundamentals	3

Semester 6

MFG 140	Geometric Dimensioning/Tolerance	1
MFG 452	Moldmaking	3
Plus AAS degree Core Requirements (from above)		12

TOTAL CREDITS REQUIRED TO COMPLETE THE DIEMAKING DIPLOMA..... 48

Tool & Diemaking AAS degree

To earn the Tool & Diemaking AAS degree, students must complete the AAS degree core 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 146)

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 catheter 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, snakes, guinea pigs, hamsters and rats.

Most Veterinary Technician 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 (VTNE) and the Veterinary Technician State Examination (VTSE).

For more information about the Veterinary Technology program, please visit our website at **www.dmacc.edu/programs/ag/vettech**.

Location: Ankeny

Program Entry Requirements

1. Complete an application for admission.
2. Satisfy the assessment requirement.
3. 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.
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 grade "C" or better in one year of high school chemistry or equivalent (DMACC Academic Achievement Center Chemistry I & II or CHM 122).
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 chairperson or the chairperson of the Agriculture and Natural Resources Department.
8. Attend any required information/registration session.

Students start Fall semester.

Graduation Requirements

To earn a Veterinary Technology AAS degree, a student must complete all coursework as prescribed and maintain a 2.0 grade point average.

Semester 1

AGV 120	Veterinary Medical Terminology		1
AGV 124	Intro to Veterinary Technology		1
AGV 129	Veterinary Physiology		3
AGV 133	Veterinary Clinic Pathology I		3
AGS 245	Intro to Animal Diseases		1
BIO 733	Health Science Anatomy		3
BIO 112	General Biology I		4

Semester 2

AGV 139	Intro Veterinary Pharmacology		1
AGV 134	Veterinary Clinical Pathology II		3
AGV 151	Intro Vet Tech Clinical Skills		3
AGV 166	Veterinary Nursing Care		3
SPC 101	Fundamentals of Oral Communication		3
Any AAS degree Core MAT Course			3–5

Semester 3–Select 1 Course from Option 1

AGV 932	Veterinary Technology Internship		4
BIO 732	Health Science Microbiology	Opt 1	4
BIO 186	Microbiology	Opt 1	4

Semester 4

AGV 140	Veterinary Pharmacology		3
AGV 164	Clinical Mgmt of Domestic Species		2
AGV 172	Large Animal Medicine and Surgery		3
AGV 182	Diagnostic Imaging		3
AGV 266	Adv Veterinary Nursing Care		2
ECN 130	Principles of Microeconomics		3

Semester 5–Select 1 Course from Option 2

AGV 138	Clinical Pathology Lab		1
AGV 165	Clinical Mgmt of Lab & Exotic Species		2
AGS 319	Animal Nutrition		3
AGV 160	Anesthesia & Surgical Assistance		4
ENG 105	Composition I	Opt 2	3
COM 703	Communication Skills	Opt 2	3

TOTAL CREDITS REQUIRED TO COMPLETE THIS AAS DEGREE..... 69

Visual Communications

This diploma program explores the exciting and challenging field of visual communications while focusing on both the creative and technical aspects of the industry. During the program, students will receive hands-on instruction in the fundamentals of design for print and web, typography, specialized computer software packages, and basic printing and production methods. A current and inclusive curriculum prepares students to meet industry standards and expectations for a variety of entry-level positions in the visual communications industry.

The Visual Communications diploma program offers:

- 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.

Upon graduation with the Visual Communication diploma, students may choose to pursue an AAS degree in either Graphic Design or Graphic Technologies. Interested students must apply for acceptance into the Graphic Design or Graphic Technologies program during the second semester of the Visual Communications program.

For more information about the Visual Communications program, please visit our website at **https://go.dmacc.edu/programs/visualcommunications**.

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 COMPASS Reading score of 61 or a minimum ACT Reading score of 14.
4. Obtain a minimum COMPASS Pre-Algebra score of 25 or a minimum ACT Math score of 14.
5. Obtain a minimum COMPASS English score of 42 or a minimum ACT Writing score of 14.
6. Attend a required information/registration session.
7. Basic keyboarding skills are recommended or ADM 105.

Students start Fall semester. 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 Visual Communications diploma, a student must complete all coursework as prescribed and maintain a 2.0 grade point average.

Semester 1 (Fall)

BCA 212	Intro to Computer Business Applications	3
GRD 415	InDesign I	3
GRD 459	Illustrator	3
GRT 404	Intro to Visual Communications	2
AAS General Requirement Math Course		3–5
GRT 400	Intro to Printing Methods (offered both Fall and Spring semesters)	4

Semester 2 (Spring)

GRD 403	Communication Design I	3
GRD 405	Typography I	3
GRD 430	InDesign II	3
GRD 463	Photoshop	3
WDV 101	Intro to HTML and CSS	3
AAS General Requirement Communications Course		3

Semester 3 (Summer)

GRD 411	Communication Design II	3
GRD 470	Interactive Media I	3
GRT 403	Production Methods	2
AAS General Requirement Social & Behavioral Sciences/Humanities Course		3

TOTAL CREDITS REQUIRED TO COMPLETE THIS DIPLOMA 47

Viticulture

(see Certificate Section, page 146)

Wastewater Treatment Technology

(see Certificate Section, page 147)

Water and Wastewater Treatment Technology

The Water and Wastewater Treatment Technology diploma is designed to address the education requirements of both operators working in the water treatment industry and entry-level students interested in entering the water treatment and wastewater treatment industry. The program is designed to provide a progressive credential structure through which students can gain two certificates and a diploma. The diploma credential can be further laddered into the Water Environmental Technology AAS degree program.

The main objective of the program is to provide a comprehensive educational opportunity for immediate and future plant operators and treatment employees and managers. People who may be interested in this program:

1. Entry-level students interested in entering the field of water or wastewater treatment technology.
2. Plant operators working on improving their industry certification level through attainment of coursework.
3. Plant operators laddering their education into the Water Environmental Technology degree.

This program provides training and educational experiences that will prepare you for certification examinations. Work experience requirements must be met before you are eligible to take an examination for certification. Be sure to refer to the certifying body in your area to determine eligibility. In Iowa, visit the DNR website located at **www.iowadnr.gov/water/files/opcert.pdf**.

For more information about the Water and Wastewater Treatment Technology program, please visit our website at **www.dmacc.edu/programs/water**.

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 a high school chemistry course and biology course or equivalent with a "C" or higher.

Students start Fall semester.

Graduation Requirements

To earn a Water and Wastewater Treatment Technology diploma, a student must complete all coursework as prescribed and maintain a 2.0 grade point average. A grade of 2.0 (C) or better is required in all courses required for this diploma.

Required Courses

Semester 1-Select 1 Course from Option 1, 1 Course from Option 2 and 1 Course from Option 3			
IND 144	Pump Overhaul and Repair		4
WAT 304	Water Treatment I		4
MAT 772	Applied Math	Opt 1	3
Any AAS Math Core Course		Opt 1	3
COM 703	Communication Skills	Opt 2	3
Any AAS Communications Core Course		Opt 2	3
MGT 145	Human Relations in Business	Opt 3	3
Any PSY Course Listed in the AAS Core Course List		Opt 3	3
Semester 2			
WAT 305	Water Distribution Systems		4
WAT 300	Water Analysis		3
WAT 312	Water Treatment II		4
WAT 307	Wastewater Treatment I		4
Semester 3			
WAT 306	Wastewater Collection Systems		4
WAT 311	Wastewater Treatment II		4
ENV 115	Environmental Science		3
Semester 4			
WAT 932	Internship		3

TOTAL CREDITS REQUIRED TO COMPLETE THIS DIPLOMA..... 46

Water Environmental Technology

DMACC's innovative Water Environmental Technology degree program provides preemployment training as well as advanced courses in water and wastewater technology for those wishing career advancement including state certification upgrade studies. Courses are designed to prepare students for entry-level employment in water and wastewater treatment operations as well as for certification examinations administered by the State of Iowa and those administered by professional associations within the water and wastewater industry. This degree program has both industrial plant operations training and water operations training with an emphasis on hands-on experiences and instruction. Students may choose an emphasis in either water treatment, wastewater treatment or both.

Current instructors are experienced water and wastewater professional experts and are up-to-date in industry practices. Classes are built around practical examples of real-world scenarios, demonstrations and field trips to maximize understanding of subject matter. Internships are required.

Upon completion of the program, graduates will be qualified to seek employment or advancement in a wide variety of settings including water and wastewater treatment companies and facilities, municipalities and state and federal agencies.

This program provides training and educational experiences that will prepare you for certification examinations. Work experience requirements must be met before you are eligible to take an examination for certification. Be sure to refer to the certifying body in your area to determine eligibility. In Iowa, visit the DNR website located at **www.iowadnr.gov/water/files/opcert.pdf**.

For more information about the Water Environmental Technology program, please visit our website at **www.dmacc.edu/programs/water**.

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 a high school chemistry course and biology course or equivalent with a "C" or higher.

Students start Fall semester.

Graduation Requirements

To earn a Water Environmental Technology AAS degree, a student must complete all coursework as prescribed and maintain a 2.0 grade point average. A grade of 2.0 (C) or better is required in all courses required for this degree.

All students take the same courses in Semesters 1–3. In Semesters 4, 5 and 6 students must choose either the Wastewater Treatment Emphasis or the Water Environmental Technology Emphasis.

Required Courses

Semester 1–Select 1 Course from Option 1 and 1 Course from Option 2

MFG 276	Hand and Bench Machine Tools		1
ELT 303	Principles of Electricity		3
MFG 121	Machine Trade Printreading I		2
CON 336	Care/Use of Hand/Power Tools		1
IND 146	Mechanical Power Transmission I		3
MAT 772	Applied Math	Opt 1	3
Any AAS Math Core Course		Opt 1	3
COM 703	Communication Skills	Opt 2	3
Any AAS Communications Core Course		Opt 2	3

Semester 2–Select 1 Course from Option 4

ELT 134	Motor Controls		3
CHM 122	Intro to General Chemistry		4
IND 144	Pump Overhaul and Repair		4
MAT 773	Applied Math II	Opt 4	3
Any AAS Math Core Course		Opt 4	3

Semester 3

BMA 177	Industrial Plumbing and Pipefitting		3
MGT 164	Total Quality Management		3
ELT 119	Programmable Controllers		3

Semester 4 (Wastewater Treatment Emphasis)–Select 1 Course from Option 3

MFG 172	Related Welding-Indust Maint		3
ELE 141	Advanced Motor Controls		3
MFG 524	PM & Diagnosing Mech/Elec Systems		3
MGT 145	Human Relations in Business	Opt 3	3
Any PSY Course Listed in the AAS Core Course List		Opt 3	3
WAT 307	Wastewater Treatment I		4

Semester 4 (Water Environmental Technology Emphasis)–Select 1 Course from Option 3

MFG 172	Related Welding-Indust Maint		3
ELE 141	Advanced Motor Controls		3
MFG 524	PM & Diagnosing Mech/Elec Systems		3
MGT 145	Human Relations in Business	Opt 3	3
Any PSY Course Listed in the AAS Core Course List		Opt 3	3
WAT 304	Water Treatment I		4

Semester 5 (Wastewater Treatment Emphasis)

WAT 306	Wastewater Collection Systems	4
WAT 308	Wastewater Analysis	3
WAT 311	Wastewater Treatment II	4
ENV 115	Environmental Science	3

Semester 5 (Water Environmental Technology Emphasis)

WAT 305	Water Distribution Systems	4
WAT 300	Water Analysis	3
WAT 312	Water Treatment II	4
ENV 115	Environmental Science	3

Semester 6 (Wastewater Treatment Emphasis)

WAT 210	Wastewater Treatment: Industrial	4
WAT 932	Internship	3

Semester 6 (Water Environmental Technology Emphasis)

WAT 932	Internship	3

TOTAL CREDITS REQUIRED TO COMPLETE THIS AAS DEGREE:

WASTEWATER TREATMENT EMPHASIS 76

WATER ENVIRONMENTAL TECHNOLOGY EMPHASIS 72

Water Treatment Technology

(see Certificate Section, page 147)

Web Developer

The Web Developer diploma provides a basic set of web development skills that focus on creating commercial website applications. A student who completes this diploma should be able to design and build a commercially oriented website application using a variety of software tools. They are also provided a general education background that will enhance their overall education. This diploma prepares the student for continuation toward the Web Development AAS degree.

For more information about the Web Developer Diploma, please visit our website at **www.dmacc.edu/programs/webdevelopment**.

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 semester.

Graduation Requirements

To earn a Web Developer diploma, a student must complete all coursework as prescribed and maintain a 2.0 grade point average.

Required Courses

Semester 1

BUS 150	E-Commerce on the Web	3
WDV 101	Intro HTML and CSS	3
WDV 131	Intro Photoshop and Fireworks	3
WDV 151	Intro Web Design	3
Any AAS degree requirement Social & Behavioral Science/Humanities Course		3

Semester 2–Select 1 Course from Option 1

WDV 221	Intro Javascript	3
WDV 245	Content Management Systems I	3
WDV 261	Intro Flash	3
Any AAS degree requirement Communications Course		3
Select 1 Course from Option Courses		3

Semester 3–Select 1 Course from Option 1

Any AAS degree requirement Math or Science Course		3
Select 1 Course from Option Courses		3

Option Courses–Select 2 Courses from Option 1

WDV 321	Advanced Javascript	Opt 1	3
WDV 331	Dreamweaver Applications	Opt 1	3
WDV 341	Intro PHP	Opt 1	3
WDV 351	Website Application Components	Opt 1	3
WDV 445	Content Management Systems II	Opt 1	3
MKT 115	Business to Business Marketing	Opt 1	3
MKT 120	E-Marketing	Opt 1	3
MKT 160	Principles of Retailing	Opt 1	3
ART 186	Principles of Digital Photography	Opt 1	3
ART 225	Photoshop for Photography	Opt 1	3

TOTAL CREDITS REQUIRED TO COMPLETE THIS DIPLOMA..... 36

These courses are applicable to the Web Development AAS degree.

Advanced Web Developer

(see Certificate Section, page 125)

Web Developer

(see Certificate Section, page 147)

Web Development

The Web Development AAS degree is intended for the student who is interested in designing and building commercial website applications. The program offers a variety of skills, technologies and current software tools. A student who completes this program will be able to evaluate, design and build a commercial website. They will be able to create the expected functionality of the website, including such e-commerce components as database-driven content, shopping carts and payment processing.

Web development tools and technologies are constantly changing. The courses will use current industry software based on current standards. Many of the upper-level courses in this program are designed to address the newest and developing technologies that are an expectation of this field.

Graduates of this program have a variety of employment opportunities. They may work with small to mid-sized firms that provide web development services. They may work with large corporations on corporate websites. This program also provides graduates with a set of skills that will allow them to work on their own as a contractor, or to start their own business venture.

For more information about the Web Development AAS degree, please visit our website at **www.dmacc.edu/programs/webdevelopment**.

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 semester.

Graduation Requirements

To earn a Web Development AAS degree, a student must complete all coursework as prescribed and maintain a 2.0 grade point average.

Required Courses

Semester 1

BUS 150	E-Commerce on the Web	3
WDV 101	Intro HTML and CSS	3
WDV 131	Intro Photoshop and Fireworks	3
WDV 151	Intro Web Design	3
Any AAS degree requirement Social & Behavioral Science/Humanities Course		3

Semester 2–Select 1 Course from Option 1

WDV 221	Intro Javascript	3
WDV 245	Content Management Systems I	3
WDV 261	Intro Flash	3
Any AAS degree requirement Communications Course		3
Select 1 Course from Option Courses		3

Semester 3–Select 1 Course from Option 1

Any AAS degree requirement Math or Science Course		3
Select 1 Course from Option Courses		3

Semester 4

WDV 321	Advanced Javascript	3
WDV 331	Dreamweaver Applications	3
WDV 341	Intro PHP	3
WDV 351	Website Application Components	3
Any AAS degree requirement Distributed Course		3

Semester 5–Select 2 Courses from Option 1 and 1 Course from Option 2

WDV 445	Content Management Systems II		3
WDV 495	Emerging Technologies Seminar		3
Select 2 Courses from Option 1			6
WDV 490	Website Applications Seminar	Opt 2	3
WDV 932	Web Development Internship	Opt 2	3

PROGRAMS AVAILABLE

Option Courses–Select 2 Courses from Option 1

WDV 441	Advanced PHP	Opt 1	3
WDV 541	PHP Seminar	Opt 1	3
WDV 521	Intro Ajax	Opt 1	3
WDV 490*	Website Applications Seminar	Opt 1	3
WDV 932*	Web Development Internship	Opt 1	3

*(*Cannot be used to duplicate an Option 2 selection.)*

GRD 463	Photoshop	Opt 1	3
GRD 470	Interactive Media I	Opt 1	3
GRD 471	Interactive Media II	Opt 1	3
MKT 115	Business to Business Marketing	Opt 1	3
MKT 120	E-Marketing	Opt 1	3
MKT 160	Principles of Retailing	Opt 1	3
ART 186	Principles of Digital Photography	Opt 1	3
ART 225	Photoshop for Photography	Opt 1	3

TOTAL CREDITS REQUIRED TO COMPLETE THIS AAS DEGREE.....66

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 alone, and 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.

For more information about the Welding program, please visit our website at **www.dmacc.edu/programs/welding**.

Location: Ankeny, Newton

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 chairperson before admission to the program can be confirmed.

Students start any semester.

Graduation Requirements

To earn a Welding diploma, a student must complete all coursework as prescribed and maintain a 2.0 grade point average.

Required Courses

Any AAS degree core Communications course		3
Any AAS degree core Math course		3
WEL 111	Welding Blueprint Reading	3
WEL 120	Oxy-Fuel Welding/Cutting	2
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
WEL 181	Gas Metal Arc Welding	2
WEL 190	Gas Tungsten Arc Welding	2

TOTAL CREDITS REQUIRED TO COMPLETE THIS DIPLOMA..... 30

Welding Certificates available: Blueprint Reading, Oxy-acetylene, Shielded Metal Arc, Gas Metal Arc, Gas Tungsten Arc, Advanced Arc Welding, and Pipe Welding

(see Certificate Section, page 148).

Wine Service

(see Certificate Section, page 148)

Woodworking

(For more information, see Architectural Millwork, page 60)

NOTES

Certificates of Specialization

Coursework for the certificate programs is not always available every semester. Contact an academic advisor on any campus for starting semester information.

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.

For more information about the Accounting Certificate I, please visit our website at **www.dmacc.edu/programs/accounting/acctcert**.

Graduation Requirements

To earn an Accounting Certificate I, a student must complete all coursework as prescribed, maintain a 2.0 grade point average and receive a grade of "C" or higher in all ACC coursework.

Required Courses

BUS 112	Business Math	3
ADM 138	Data Entry	3
ACC 131	Principles of Accounting I	4

Option Courses–Select 1 Course from Each Option

CSC 110	Intro to Computers	Opt 1	3
BCA 212	Intro Computer Business Appl	Opt 1	3
ENG 105	Composition I	Opt 2	3
COM 703	Communication Skills	Opt 2	3
ADM 157	Business English	Opt 2	3
MGT 145	Human Relations in Business	Opt 2	3
SPC 101	Fundamentals of Oral Communication	Opt 2	3
SPC 126	Interpersonal & Small Group Comm	Opt 2	3
ADM 221	Career Development Skills	Opt 3	2
ACC 124	Accounting Professionalism	Opt 3	3

TOTAL CREDITS REQUIRED TO COMPLETE THIS CERTIFICATE 18

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 and Bookkeeping diploma.

Accounting Certificate II

The Accounting Certificate II prepares the student for an entry-level position in the field of accounting and 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.

For more information about the Accounting Certificate II, please visit our website at **www.dmacc.edu/programs/accounting/acctcert**.

Program Entry Requirement

1. Completion of Accounting Certificate I

Graduation Requirements

To earn an Accounting Certificate II, a student must complete all coursework as prescribed, maintain a 2.0 grade point average and receive a grade of "C" or higher in all ACC coursework.

Required Courses

ACC 132	Principles of Accounting II	4
ACC 161	Payroll Accounting	3
ACC 311	Computer Accounting	3
ACC 361	Accounting Spreadsheets	3

Option Courses–Select 1 Course from Option 1

ACC 191	Financial Analysis	Opt 1	3
ACC 193	Accounting Procedures/Mgmt	Opt 1	3
ACC 251	Gov't & Nonprofit Accounting	Opt 1	3
ACC 261	Income Tax Accounting	Opt 1	3

TOTAL CREDITS REQUIRED TO COMPLETE THIS CERTIFICATE 16

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 and Bookkeeping diploma.

Accounting Income Tax Preparer

Anyone who is compensated for preparing or assisting in the preparation of a tax return must register with the Internal Revenue Service, and, if applicable, successfully pass an examination. The DMACC Income Tax Preparer certificate will help prepare you for the IRS tax preparer tests and assist you in meeting the annual continuing education requirement for Tax Preparers.

For more information about the Accounting Income Tax Preparer certificate, please visit our website at **www.dmacc.edu/programs/accounting/taxpreparer.asp**.

Graduation Requirements

To earn an Accounting Income Tax Preparer Certificate, a student must complete all coursework as prescribed, maintain a 2.0 grade point average and receive a grade of "C" or higher in all ACC coursework.

Required Courses

ACC 131	Principles of Accounting I	4
ACC 261	Income Tax Accounting	3
ACC 268	Business Tax	3
ACC 850	Tax Assistance Institute	3

TOTAL CREDITS REQUIRED TO COMPLETE THIS CERTIFICATE 13

Some of these credits are applicable to the Accounting and Bookkeeping diploma, the Accounting Information Systems AS degree, the Accounting Paraprofessional AS degree or the Accounting Specialist AAS degree.

Accounting Payroll

Payroll is a specialized area of accounting that requires in-depth knowledge of federal and state tax rules and regulations, pension plans, benefit plans, garnishments and stock options. The Payroll certificate will provide students with this type of knowledge.

The Accounting Payroll certificate will also prepare students for the Fundamental Payroll Certification exam administered by the American Payroll Association. This certification provides external verification of payroll skills and knowledge.

The Accounting Payroll certificate is designed for the part-time and full-time student. It is expected that many students will have completed ACC 131 Principles of Accounting I before they enter the certificate program. Those students will be able to complete the certificate in two semesters. A beginning student will need three or more semesters to complete the certificate because of the sequential nature of accounting courses.

For more information about the Accounting Payroll certificate, please visit our website at **www.dmacc.edu/programs/accounting/payrollcert**.

Graduation Requirements

To earn an Accounting Payroll Certificate, a student must complete all coursework as prescribed, maintain a 2.0 grade point average and receive a grade of "C" or higher in all ACC coursework.

Required Courses

ACC 131	Principles of Accounting I	4
ACC 161	Payroll Accounting	3
ACC 311	Computer Accounting	3
ACC 361	Accounting Spreadsheets	3
ACC 165	Payroll Certification Review	2

Option Courses–Select 1 Course from Option 1

ADM 105	Intro to Keyboarding	Opt 1	1
BCA 122	Basic Word Processing	Opt 1	1
BCA 164	Basic Databases	Opt 1	1

TOTAL CREDITS REQUIRED TO COMPLETE THIS CERTIFICATE 16

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 and Bookkeeping diploma.

Adult Services

Students in the Adult Services Certificate of Specialization 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. This program offers classes in a format to meet the needs of the nontraditional student.

Students are required to complete an Application for Admission, satisfy the assessment requirements and attend a program orientation.

IMPORTANT NOTE: Students are strongly advised to contact one of the staff members of Aging Services Management in Bldg. 24, Room 208A (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.

For more information about the Adult Services certificate, please visit our website at **www.dmacc.edu/programs/aging/adsscert.asp**.

Location: Ankeny

Required Courses

ASM 278	Management in Senior Care Services	3
ASM 279	Healthcare Human Resources	3
ASM 280	Healthcare Delivery Systems	2
ASM 282	Aging Services	2
ASM 283	Aging Policies and Government Programs	2
SOC 225	Social Gerontology/Applications	4
SOC 226	Issues in Aging	2
ASM 262	Regulation of Supported Living	3
ASM 256	Agency Experience	2
ASM 239	Information Systems in Healthcare	2
ASM 274	Law and Ethics in Healthcare	3

Option Courses–Select 1 Course from Option 1

ACC 111	Intro to Accounting	Opt 1	3
ACC 131	Principles of Accounting I	Opt 1	4

TOTAL CREDITS REQUIRED TO COMPLETE THIS CERTIFICATE 31

These credits are applicable to the AS degree in Aging Services Management.

Advanced Web Developer

This certificate provides students with the advanced technology and skills required to develop, enhance and maintain most commercial website applications, with an emphasis on server-side capability and high-level scripting skills.

This certificate is recommended for students who have been working in this field and are seeking additional education in web development skills and technologies. This certificate is also available for those students who have already completed the Web Developer certificate or Web Developer diploma.

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 semester.

For more information about the Advanced Web Developer certificate, please visit our website at www.dmacc.edu/programs/webdevelopment.

Graduation Requirements

To earn an Advanced Web Developer certificate, a student must complete all coursework as prescribed and maintain a 2.0 grade point average.

For more information about the Advanced Web Developer certificate, please visit our website at **www.dmacc.edu/programs/webdevelopment**.

Required Courses

WDV 321	Advanced Javascript	3
WDV 331	Dreamweaver Applications	3
WDV 341	Intro PHP	3
WDV 351	Website Application Components	3

WDV 445	Content Management Systems II	3
WDV 495	Emerging Technologies Seminar	3

TOTAL CREDITS REQUIRED TO COMPLETE THIS CERTIFICATE 18

These credits are applicable to the Web Developer diploma and the Web Development AAS degree.

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 coursework within this certificate will serve as a strong preparatory base for the "Certified Crop Advisor" (CCA) program.

For more information about the Agribusiness–Agronomy certificate, please visit our website at **www.dmacc.edu/programs/ag**.

Fall

AGA 114	Principles of Agronomy	3
AGA 154	Fundamentals of Soil Science	3
AGA 157	Soil Fertility	1

Spring

AGA 211	Grain and Forage Crops	3
AGB 235	Intro to Agricultural Markets	3

Summer

AGA 381	Crop Scouting	3
AGP 333	Precision Agriculture Applications	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
AGT 120	Agricultural Applications of Biotech	Opt 1	3

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.

For more information about the Agribusiness–Animal Science certificate, please visit our website at **www.dmacc.edu/programs/ag**.

Fall

AGS 113	Survey of the Animal Industry	3
AGS 242	Animal Health	3
AGT 120	Agricultural Applications of Biotech	3

Spring

AGS 319	Animal Nutrition	3
AGS 323	Animal Nutrition II	3
AGB 235	Intro to Agricultural Markets	3

Option Courses–Select 1 Course from Option 1

AGB 802	Agribusiness Internship I	Opt 1	2
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.

For more information about the Agribusiness–Farm Management certificate, please visit our website at **www.dmacc.edu/programs/ag**.

Fall

AGA 114	Principles of Agronomy	3
AGB 101	Agricultural Economics	3
AGS 113	Survey of the Animal Industry	3

Spring

AGB 235	Intro to Agricultural Markets	3
AGB 330	Farm Business Management	3
AGA 129	Intro to Sustainable Agriculture	3

Option Courses–Select 1 Course from Option 1

ACC 111	Intro to Accounting	Opt 1	3
AGB 440	Agricultural Niche Marketing	Opt 1	3
AGB 802	Agribusiness Internship I	Opt 1	2
AGT 120	Agricultural Applications of Biotech	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.

For more information about the Agribusiness–Sales and Service certificate, please visit our website at **www.dmacc.edu/programs/ag**.

Required Courses

Fall

AGS 113	Survey of the Animal Industry		3
AGA 114	Principles of Agronomy		3
AGB 101	Agricultural Economics		3

Spring

AGB 235	Intro to Agricultural Markets		3
AGB 331	Agribusiness Management		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.

Agribusiness–Sustainable Agriculture

The Sustainable Agriculture certificate provides students who have limited knowledge about the agricultural industry with an introduction to the industry and the concepts of sustainability in agriculture. Upon completion, the successful candidate will be able to utilize general knowledge and information about their selected emphasis to explore the impact of traditional agricultural production and incorporate current trends as a model for the future.

For more information about the Agribusiness–Sustainable Agriculture certificate, please visit our website at **www.dmacc.edu/programs/ag**.

Fall–Select 1 Course from Option 1

AGC 314	Leadership in Agriculture		2
AGT 120	Agricultural Applications of Biotech		3
AGA 114	Principles of Agronomy	Opt 1	3
AGA 154	Fundamentals of Soil Science	Opt 1	3
AGS 113	Survey of the Animal Industry	Opt 1	3

Spring

AGC 420	Agricultural Issues		3
AGB 440	Agricultural Niche Marketing		3
AGA 129	Intro to Sustainable Agriculture		3

Summer

AGM 336	Alternative Energy in Ag		3

TOTAL CREDITS REQUIRED TO COMPLETE THIS CERTIFICATE 20

These credits are applicable to the AAS degree in Agribusiness.

Airbrush Art

The purpose of the Airbrush Art certificate is to provide design theory and practice of airbrush techniquires, 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.

For more information about the Airbrush Art certificate, please visit our website at **www.dmacc.edu/programs/airbrush**.

Required Courses

GRD 448	Airbrush I	3
GRD 450	Airbrush II	3
GRD 452	Airbrush III	3

TOTAL CREDITS REQUIRED TO COMPLETE THIS CERTIFICATE 9

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.

For more information about the Architectural Millwork certificate, please visit our website at **www.dmacc.edu/programs/architecturalmillwork**.

Semester 1

MLW 440	Blueprint Reading and Layout	3
MLW 441	Material Identification and Usage	3
MLW 442	Introduction to Portable Tools	3
MLW 443	Stationary Equipment	4

Semester 2

MLW 444	Advanced Equipment Techniques	3
MLW 445	Millimeter Cabinet Techniques	3
MLW 446	Millwork Techniques	4
MLW 447	Introduction to Application	3

Semester 3

MLW 448	Advanced Millwork Applications I	5
MLW 449	Advanced Millwork Applications II	5

TOTAL MINIMUM CREDITS REQUIRED TO COMPLETE THIS PROGRAM.....36

These credits are applicable to the Architectural Millwork diploma.

Basic Visual Communications

The Basic Visual Communications certificate is designed for individuals with no prior graphic design experience and a desire to gain a basic understanding of design and software skills used in the visual communication industry. The courses in this certificate are the basic building blocks needed to provide a solid foundation preparing a student to enter into the world of visual communications.

For more information about the Basic Visual Communications certificate, please visit our website at **www.dmacc.edu/programs/commercialart**.

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 COMPASS Reading score of 61 or a minimum ACT Reading score of 14.
5. Obtain a minimum COMPASS English score of 42 or a minimum ACT Writing score of 14.
6. Obtain a minimum COMPASS Pre-Algebra score of 25 or a minimum ACT Math score of 14.

Required Courses

GRD 301	Intro to Desktop Publishing	3
GRD 405	Typography I	3
GRD 463	Photoshop	3
GRD 403	Communication Design I	3
GRD 470	Interactive Media I	3

TOTAL CREDITS REQUIRED TO COMPLETE THIS CERTIFICATE 15

Some of these credits are applicable to the Visual Communications diploma and the AAS degree in Graphic Design.

Biomass Operations Technology

The Biomass Operations Technologies 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.

For more information about the Biomass Operations Technology certificate, please visit our website at **www.dmacc.edu/programs/iemt**.

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.

Biotechnology Laboratory Methods

The Biotechnology Laboratory Methods Certificate is designed for students who currently have previous coursework or experience equivalent to the core biotechnology AA or AS program courses in biology and chemistry to quickly obtain additional laboratory training and update their current skills in order to broaden their job position or to obtain employment in biotechnology. The certificate includes the Biotechnology program capstone courses BIO-250 Cell and Molecular Biology –Nucleic Acids, BIO-251 Cell and Molecular Biology –Proteins and Microbiology to provide them with over 200 hours of hands on lab experience as well as Statistics to ensure graduates are able to interpret scientific data.

The certificate coursework is structured to allow students to develop marketable job skills focusing on written and oral communications, critical thinking, problem-solving, computer skills and small group collaboration. The hands-on laboratory work enables students to develop understanding and proficiency in the following wide variety of biotechnology laboratory methods:

Nucleic Acids

- Laboratory Safety
- Laboratory Notebooks and Documentation
- Solution Preparation
- Plant Tissue Culture
- Restriction Enzymes
- Restriction Digestion Analysis
- Classic PCR
- Real-time PCR
- Agarose Gel Electrophoresis
- STR Analysis
- gDNA Extraction
- GMO Food Testing
- Gene Cloning
- Nested PCR
- PCR Product Purification
- Ligation into Plasmid vectors
- Clone Sequence Analysis
- Bioinformatics
- Southern Blotting

Protein Chemistry

- Computer Modeling of Protein Structures and Interactions
- Solution Preparation
- Measure Total Protein in Food Samples
- Measure Enzyme Activity
- Test Effects of Concentrations, pH and Temperature on Enzymes
- Chromatography Methods:
  - Size Exclusion
  - Affinity
  - Ion Exchange
- Polyacrylamide Gel Electrophoresis
- Protein Extraction & Purification
- Analysis of Extracted Protein
  - SDS-PAGE
  - Enzyme Activity
- ELISA and Automation of ELISA's
- Western Blotting
- 2-D PAGE

Microbiology

- Oil Immersion Microscopy
- Aseptic Transfers and Inoculation
- Wet Mount and Hanging Drop Preparations
- Staining Techniques Simple, Negative, Gram, Acid-Fast, Capsule, Endospore, Flagella.
- Colony Morphology Analysis
- Isolation Methods
- Selective Media Analysis
- Metabolic Analysis:
  - Carbohydrate, Protein
- Identification of Unknown Microorganism
- Antimicrobial Susceptibility Analysis
- Plaque Assay and Analysis
- Total Coliform Determination

Please check with the program chairperson for Biotechnology or an advisor for additional information or assistance.

For more information about the Biotechnology program, please visit our website at **www.dmacc.edu/programs/biotechnology**.

Locations: 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. BIO 112 and BIO 113.
5. CHM 122 and CHM 132 OR CHM 165 and CHM 175.

Students start Fall or Spring semester.

Graduation Requirements

To earn a Biotechnology Laboratory Methods certificate, a student must complete all course work as prescribed and maintain a 2.0 grade point average.

Required Courses

Semester 1 (Fall, Spring or Summer)

MAT 157	Statistics	4
BIO 186	Microbiology	4

Semester 2 (Fall or Spring)

BIO 250	Cell & Molecular Biology–Nucleic Acids	5
BIO 251	Cell and Molecular Biology–Proteins	5

TOTAL CREDITS REQUIRED TO COMPLETE THIS CERTIFICATE 18

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.

For more information about the Building Maintenance Technology certificate, please visit our website at **www.dmacc.edu/programs/bldgmaint**.

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.

Entry Requirements:

1. Complete an application for admission.
2. Satisfy the assessment requirement.
3. Attend the chemical dependency certificate informational meeting offered in Fall or Spring or view a recording of the meeting online.

   Contact the Human Services program chairperson once this step has been completed. (View the online Chemical Dependency program entry meeting at **http://cdc.dmacc.edu**. Email the program chair, Ilima Young-Dunn at imyoungdunn@dmacc.edu, once you have completed this step.)

Students must participate in a chemical dependency practicum. Students can contact the program chairperson 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.

For more information about the Chemical Dependency Counseling certificate, please visit our website at **www.dmacc.edu/programs/chemicaldependency**.

Required Courses

ENG 105	Composition I	3
HSV 109	Intro to Human Services	3
HSV 185	Discrimination and Diversity	3
HSV 130	Interviewing/Interpersonal Relations	3
HSV 220	Intro to Counseling Theories	3
HSV 255	Addictive Disease Concepts	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

Option Courses–Select 1 Course from Option 1 and 1 Course from Option 2

BIO 156	Human Biology w/Lab	Opt 1	3
PSY 121	Developmental Psychology	Opt 1	3
PSY 241	Abnormal Psychology	Opt 1	3
HSV 228	Group Counseling Techniques	Opt 1	3
SOC 110	Introduction to Sociology	Opt 2	3
SOC 115	Social Problems	Opt 2	3
SPC 101	Fundamentals of Oral Communication	Opt 2	3
SPC 126	Interpersonal & Small Grp Comm	Opt 2	3

TOTAL CREDITS REQUIRED TO COMPLETE THIS CERTIFICATE 39

These credits are applicable to the AS degree in Human Services.

CNC Operator

CNC Operators are entry-level jobs that require someone to interact with CNC machining equipment, loading and unloading parts with minor modifications to the machine settings. The CNC Operator certificate provides students with the knowledge and skills needed for an entry-level CNC machine operator position.

For more information about the CNC Operator certificate, please visit our website at **www.dmacc.edu/machining**.

Students start Fall or Spring semester.

Location: Ankeny

Required Courses

Semester 1

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
MFG 276	Hand & Bench Machine Tools	1

Semester 2

MFG 121	Machine Trade Printreading I	2
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

TOTAL CREDITS REQUIRED TO COMPLETE THIS CERTIFICATE 18

Classes are not required to be semester-by-semester, but students must comply with corequisite requirements.

These credits are applicable toward the Machinist Technology diploma and the AAS degree in Tool & Diemaking.

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, database, desktop publishing, graphics, presentation, spreadsheet, email, internet and operating systems. A grade of "C-" or better is required in the first course of a sequential course offering before enrolling in the second-level course of the sequence. This includes BCA 133, BCA 212 or CSC 110.

For more information about the Computer Applications certificate, please visit our website at **www.dmacc.edu/programs/btec/ca.asp**.

Required Courses

Semester 1

BCA 212	Intro Computer Business Applications	3
BCA 133	Word Processing Skill Dev I	4

(Note: Students must demonstrate a keyboarding speed of 25 NWPM or above, by taking a five-minute test, before enrolling in BCA 133.)

Semester 2

BCA 137	Word Processing Skill Dev II	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.

Computer Languages

The purpose of the Computer Languages certificate is to provide the student who is currently 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.

For more information about the Computer Languages certificate, please visit our website at **www.dmacc.edu/programs/computerlang**.

Required Courses

CIS 402	COBOL	3
CIS 505	Structured Systems Analysis	4
CIS 604	Visual Basic	3
CIS 171	Java	3
CIS 161	C++	3

Option Courses–Select a Minimum of 6 Credits From Option 1 and a Minimum of 6 Credits From Option 2

CIS 612	Advanced Visual BASIC	Opt 1	3
CIS 182	JSP and Servlets	Opt 1	3
CIS 413	COBOL II	Opt 1	4
CIS 164	Advanced C++	Opt 1	3
CIS 303	Introduction to Database	Opt 2	3
CIS 332	Database and SQL	Opt 2	3
CIS 338	SQL/Oracle	Opt 2	3
CIS 346	Database Design	Opt 2	3

TOTAL CREDITS REQUIRED TO COMPLETE THIS CERTIFICATE 28

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.

For more information about the Corel Painter certificate, please visit our website at **www.dmacc.edu/programs/corel**.

Required Courses

GRD 410	Illustration I	3
GRD 414	Illustration II	3

TOTAL CREDITS REQUIRED TO COMPLETE THIS CERTIFICATE 6

These credits are applicable to the AAS degree in Graphic Design.

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 tend to find 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.

For more information about the Data Entry I certificate, please visit our website at **www.dmacc.edu/programs/btec/de.asp**.

Required Courses

ADM 221	Career Development Skills	2
MGT 145	Human Relations in Business	3
ADM 138	Data Entry	3

TOTAL CREDITS REQUIRED TO COMPLETE THIS CERTIFICATE 8

Database Specialist

The purpose of the Database Specialist certificate is to add to the specialization of study at DMACC. This certificate can also help the student prepare for Oracle certification as an Oracle Application Developer, which is desirable for positions in the database area.

For more information about the Database Specialist certificate, please visit our website at **www.dmacc.edu/programs/database**.

Required Courses

CSC 110	Intro to Computers	3
CIS 125	Intro to Programming Logic w/Lang	3
CIS 402	COBOL	3
CIS 303	Introduction to Database	3
CIS 332	Database and SQL	3
CIS 338	SQL/Oracle	3

Option Courses–Select 1 Course from Option 1

CIS 346	Database Design	Opt 1	3
NET 715	Database Security & Auditing	Opt 1	3

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, and assisted living and healthcare facilities.

Background checks for criminal history will be done by employers in the healthcare field. Criminal convictions or documented history of abuse will prevent students from participating in required field experiences.

The Dietary Manager program is approved by the Association of Nutrition & Foodservice Professionals (formerly Dietary Managers Association). Graduates are eligible to take the CDM, CFPP national certification examination (**www.ANFPonline.org**).

For more information about the Dietary Manager certificate, please visit our website at **www.dmacc.edu/programs/dietary**.

Required Courses

DTM 350	Health Field	1
DTM 351	Food Preparation	1
DTM 352	Sanitation/Meal Service	2
DTM 353	Nutrition Life Cycle	1
DTM 354	Modified Diets	1
DTM 355	Food Production Management	1
DTM 356	Food Service Management	2
DTM 361	Food Prep Field Experience	1
DTM 362	Sanitation/Meal Service Field Experience	1
DTM 363	Nutrition Life Cycle Field Experience	1
DTM 364	Modified Diet/Field Experience	1
DTM 365	Food Production Field Experience	1
DTM 366	Food Service Mgmt Field Experience	1

TOTAL CREDITS REQUIRED TO COMPLETE THIS CERTIFICATE 15

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.

For more information about the Digital Forensic Investigation certificate, please visit our website at **www.dmacc.edu/programs/digitalforensics**.

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

NET 123	Computer Hardware Basics	4
NET 213	Cisco Networking	4
CRJ 167	Operating Sys. for Forensics	3
CRJ 176	Computer Forensics I	3
CRJ 178	E-Crime Investigative Methods	3
CRJ 276	Computer Forensics II	3
CRJ 277	Adv. Digital Forensic Methods	4

TOTAL CREDITS REQUIRED TO COMPLETE THIS CERTIFICATE 24

Digital Illustration

The Digital Illustration certificate is designed for individuals with no prior digital illustration experience and those who wish to upgrade their skills to current software used in the visual communication industry. The courses in this certificate are designed to provide current technical skills in the area of digital illustration using Adobe software applications.

For more information about the Digital Illustration certificate, please visit our website at **www.dmacc.edu/programs/commercialart**.

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 COMPASS Reading score of 61 or a minimum ACT Reading score of 14.
5. Obtain a minimum COMPASS English score of 42 or a minimum ACT Writing score of 14.
6. Obtain a minimum COMPASS Pre-Algebra score of 25 or a minimum ACT Math score of 14.

Required Courses

GRD 459	Illustrator	3
GRD 463	Photoshop	3
GRD 464	Digital Artistry	3

TOTAL CREDITS REQUIRED TO COMPLETE THIS CERTIFICATE 9

These credits are applicable to the Visual Communications diploma and the AAS degree in Graphic Design.

Digital Publishing

The Digital Publishing certificate is designed for individuals with prior printing and/or design experience who wish 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 Adobe software applications.

For more information about the Digital Publishing certificate, please visit our website at **https://go.dmacc.edu/programs/digitalpub**.

Required Courses

GRD 415	InDesign I	3
GRD 430	InDesign II	3
BCA 212	Intro to Computer Business Appl	3
GRD 463	Photoshop	3
GRT 424	Digital Imaging II	4
GRT 426	Digital Publishing III	4

Option Courses–Select 1 Course from Option 1

CIS 207	Fundamentals of Web Programming	Opt 1	3
GRD 470	Interactive Media I	Opt 1	3

TOTAL CREDITS REQUIRED TO COMPLETE THIS CERTIFICATE 23

Early Childhood Education

The Early Childhood Education certificate prepares the student for an entry-level position in a child care program. This program meets the requirements for clock hours of formal child care education required for the Child Development Associate (CDA) credential. Upon completion of the certificate program, the successful student will be able to practice appropriate guidance techniques, recognize and carry out appropriate activities and assessment for young children, maintain a healthy and safe setting, and be able to communicate effectively with children and families.

Essential skills needed to successfully complete the required lab courses include the ability to maintain awareness of active children in a group setting, to demonstrate stamina while engaging in multiple tasks and activities with children, to respond quickly and appropriately to children's changing needs and to keep children safe. In addition, DHS criminal history record checks and fingerprinting will be required. 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. Courses in the certificate program are also required for the Early Childhood Education diploma and Associate degree. Students who successfully complete the certificate may choose to apply these courses to either a diploma or Associate degree in Early Childhood Education.

For more information about the Early Childhood Education certificate, please visit our website at **www.dmacc.edu/programs/earlychildhood/certificate**.

Locations: Ankeny, Urban, West

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 semester.

Graduation Requirements

To earn an Early Childhood Education certificate, a student must complete all coursework as prescribed and maintain a 2.0 grade point average.

Required Courses

ECE 103	Intro to Early Childhood Ed	3
ECE 133	Child Health, Safety & Nutrition	3
ECE 243	Early Childhood Guidance	3
ECE 343	Early Childhood Guidance Lab	1

Option Courses-Select 1 Course from Option 1

ECE 158	Early Childhood Curriculum I	Opt 1	3
ECE 221	Infant/Toddler Care and Educ.	Opt 1	3

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.

Emergency Medical Technician

The Emergency Medical Technician certificate is designed to provide an introductory learning experience for persons interested in the field of pre-hospital emergency medicine. This course includes practical and computer-based testing in the classroom, as well as clinical experience in area hospitals and with local EMS agencies. National Registry certification testing will be available upon successful course completion in both the cognitive and hands-on psychomotor skills areas. Area fire departments and EMS agencies, as well as some hospital emergency departments, urgent care clinics and industrial settings utilize EMTs.

For more information about the Emergency Medical Technician certificate, please visit our website at **www.dmacc.edu/programs/emergencytech**.

Prerequisite: Proof of successful and current completion of either American Heart Association Healthcare Provider CPR or Red Cross Professional Rescuer CPR training.

Program Entry Requirements

1. Complete an application for admission.
2. Students must possess a CPR card that is either American Heart Association Healthcare Provider or American Red Cross CPR/AED for the Professional Rescuer to enroll. **No other cards will be accepted**.
3. Students must also show a high school diploma or GED.

Additional Requirements

The Emergency Medical Technician course requires students to undergo a criminal history background check at a cost of $15. This cost is included in the course tuition. Students may be denied the opportunity to obtain certification with the State of Iowa, upon successful completion of the course, based on the results of the background check. This decision to deny certification rests solely with the Iowa Department of Public Health–Bureau of EMS.

Required Course

EMS 217	Emergency Medical Technician	6

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.

For more information about the Enology certificate, please visit our website at **www.dmacc.edu/programs/viticulture**.

Required Courses—Select 1 Course from Option 1

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
VIN 275	Sensory Science	Opt 1	4
VIN 104	Vit. for Wine Production	Opt 1	3

TOTAL CREDITS REQUIRED TO COMPLETE THIS CERTIFICATE 17

Entrepreneurship

An increasing number of people are realizing the rewards and challenges of owning their own businesses. The Entrepreneurship program will help you create or improve your plans to be successful in owning or operating a small business. Although you may have the technical skills, or be very knowledgeable about a certain industry, the entrepreneurship program emphasizes how your passion and skills tie into the day-to-day operation of a business. In addition, this flexible program is designed to impact students in their work environments in the real world, regardless of whether you start a business or not! This is accomplished through various innovative marketing strategies, current creative financing methods and employee development skills. The program also emphasizes personal development in accounting, supervision, communication and relationship management. To make it convenient for today's busy students, courses are being offered during the day, evening and online.

For more information about the Entrepreneurship certificate, please visit our website at **www.dmacc.edu/programs/entrepreneurship**.

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

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
BUS 131	Small Business Management Strategies	Opt 2	3
BUS 181	Basic Law for Entrepreneurs	Opt 2	2
ACC 311	Computer Accounting	Opt 3	3
BUS 240	Virtual Business Firm	Opt 3	3
BUS 150	E-Commerce on the Web	Opt 3	3

TOTAL CREDITS REQUIRED TO COMPLETE THIS CERTIFICATE. 20

These credits are applicable to the Diploma in Entrepreneurship.

Fashion

The purpose of the Fashion certificate is to provide specialized skills to individuals who are currently employed in or wanting to enter the apparel and accessories field. Courses will help the student learn retailing and selling procedures while developing fashion awareness.

For more information about the Fashion certificate, please visit our website at **www.dmacc.edu/programs/marketing**.

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.

Coursework 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.

For more information about the Fire Specialist certificate, please visit our website at **www.dmacc.edu/programs/fire/certificate.asp**.

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.

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 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. Students are required to complete an Application for Admission.

For more information about the Gerontology Specialist certificate, please visit our website at **www.dmacc.edu/programs/aging/gerontologycert.asp**.

Required Courses

ASM 155	Impact of Demographics	1
ASM 160	Aspects of Aging	1
ASM 150	Communication with the Elderly	1
ASM 800	Seminar 1	1
ASM 165	Healthy Aging	1
ASM 180	Cultural Diversity	1
ASM 200	Depression, Death & Grieving	1
ASM 805	Seminar II	1

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 advance 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.

For more information about the Graphic Sales & Customer Service certificate, please visit our website at **https://go.dmacc.edu/programs/graphicsales**.

Required Courses

GRT 400	Intro to Printing Methods	4
GRT 404	Intro to Visual Communications	2
GRT 409	Project Planning & Management	3
MKT 110	Principles of Marketing	3
MKT 140	Selling	3
MKT 150	Principles of Advertising	3

TOTAL CREDITS REQUIRED TO COMPLETE THIS CERTIFICATE 18

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.

For more information about the Greenhouse Production certificate, please visit our website at **www.dmacc.edu/programs/ag**.

Fall Semester, Year 1–Select 1 Course from Option 1

AGH 147	Soil Fertility for Hort.		1
AGH 221	Principles of Horticulture		3
AGH 146	Soil Science for Horticulture	Opt 1	3
AGA 154	Fundamentals of Soil Science	Opt 1	3

Spring Semester, Year 1

AGH 132	Intro to Greenhouse	3
AGH 233	Plant Propagation I	3

Fall Semester, Year 2

AGH 133	Greenhouse Production Techniques	3
MAT 772	Applied Math	3
AGH 283	Pesticide Application Certification	2

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.

For more information about the Human Resource Management certificate, please visit our website at **www.dmacc.edu/programs/marketing**.

Required Courses

MGT 145	Human Relations in Business	3
MGT 101	Principles of Management	3
MGT 130	Principles of Supervision	3
MGT 170	Human Resource Management	3
BUS 185	Business Law I	3
BUS 278	Employment Law	3
MGT 128	Organizational Behavior	3

Note: Students should take BUS 185 in the Fall semester, as it is a prerequisite to BUS 278.

TOTAL CREDITS REQUIRED TO COMPLETE THIS CERTIFICATE 21

InDesign

The InDesign certificate is designed for individuals with no prior page layout experience or for those who wish to upgrade the software skills they use in the visual communication industry. The courses in this certificate are designed to provide current technical skills in the area of page layout using this Adobe software.

For more information about the InDesign certificate, please visit our website at **www.dmacc.edu/programs/commercialart**.

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 COMPASS Reading score of 61 or minimum ACT Reading score of 14.
5. Obtain a minimum COMPASS English score of 42 or minimum ACT writing score of 14.
6. Obtain a minimum COMPASS Pre-Algebra score of 25 or minimum ACT Math score of 14.

Required Courses

GRD 415	InDesign I	3
GRD 430	InDesign II	3

TOTAL CREDITS REQUIRED TO COMPLETE THIS CERTIFICATE 6

These credits are applicable to the Visual Communications diploma and the AAS degree in Graphic Design.

Informatics

Informatics develops new uses for information technology. It is the study of how people transform technology, and how technology transforms us. In many ways, informatics is a bridge connecting IT to a particular field of study: biology, chemistry, fine arts, telecommunications, geography, business, economics, journalism, medical sciences, etc. This certificate prepares students to work in their area of specialization as business analysts, technology specialists, technical trainers, technology managers, etc.

For more information about the Informatics certificate, please visit our website at **www.dmacc.edu/programs/mis/informatics.**

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 completion of a two-year or four-year degree from an accredited college.
5. CSC 110 Intro to Computers (3 credit) or equivalent.
6. MAT 141 Finite Math (4 credit) or equivalent.

Students may start any semester.

Required Courses

CIS 125	Introduction to Programming Logic w/Lang	3
CIS 154	Computational Structures	3
INF 110	Fundamental Informatics	3
INF 130	Social Informatics	3
INF 220	Human-Computer Interaction	3
INF 230	Organization Informatics	3
INF 310	Informatics Security	3
INF 320	Legal Informatics Issues	3

TOTAL CREDITS REQUIRED TO COMPLETE THIS CERTIFICATE 24

These credits are applicable to the Management Information Systems (MIS) AS degree.

Information Processing Support

The Information Processing Support certificate prepares students for an entry-level office position 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. A grade of C- or better is required in the first course of a sequential course offering before enrolling in the second-level course of the sequence. This includes ADM 157, BCA 133, BCA 212 or CSC 110.

For more information about the Information Processing Support certificate, please visit our website at **www.dmacc.edu/programs/btec/ips.asp**.

Required Courses

Semester 1

ADM 157	Business English	3
BCA 212	Intro to Computer Business Appl	3
BCA 133	Word Processing Skill Development I	4

(Note: Students must demonstrate a keyboarding speed of 25 NWPM or above by taking a five-minute test before enrolling in BCA 133.)

Semester 2

ADM 154	Business Communication	3
BCA 137	Word Processing Skill Development II	3
BCA 213	Intermediate Computer Business Applications	3

TOTAL CREDITS REQUIRED TO COMPLETE THIS CERTIFICATE 19

These credits are applicable to the diploma in Office Assistant and 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.

For more information about the Interactive Media for Graphic Design certificate, please visit our website at **www.dmacc.edu/programs/interactivemedia**.

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 the training needed at the wholesale or retail levels in interior home product sales, marketing or customer service.

For more information about the Interior Design Consultant certificate, please visit our website at **https://go.dmacc.edu/programs/marketing**.

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.

Interpretation & Translation–Business

The Interpretation & Translation–Business certificate is for functionally bilingual students with a college degree (AA, AS, Bachelor or higher) who wish to work as business interpreters or translators. Upon completion, students should be able to provide basic interpreting and translation services between English and their other languages(s) in business contexts. The program is designed for students who wish to add business interpreting and translation skills to their current set of job skills.

Certificate students complete basic and specialized courses in Interpretation & Translation, as well as ethics and business. 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–Business certificate can also be applied to any of the other Interpretation & Translation certificates (Education, Healthcare, Human Services or Judiciary).

A program chairperson and a program counselor are available to assist students with education and career planning.

Employment opportunities for business interpreters and translators are currently found in all industries and businesses where business Interpretation & Translation services are needed. There are also many volunteer opportunities.

Note: Students are required to complete a certificate program in one emphasis area at a time—there is no "mixing and matching" of emphasis area allowed. Once a student has completed a full certificate of specialization in one area, the student can enroll in a second (or subsequent) emphasis area and complete the certificate of specialization in that emphasis area with only 17 credits, because the 18 credits of ITR required basic courses do not need to be retaken.

For more information about the Interpretation & Translation–Business certificate, please visit our website at **www.dmacc.edu/programs/itr**.

Location: Urban (NOTE: All Interpretation & Translation courses are online.)

Program Entry Requirements

1. Complete an application for admission.
2. Satisfy the assessment requirement.
3. Complete the ITR online program information orientation including the survey.
4. Provide evidence of completion of a college degree (AA, AS, Bachelor or higher).
5. 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 writing 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 chairperson
6. Show proficiency in a second language with one of the following:
   a. Evidence of completion of high school in a country where the 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 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 chairperson
   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 in the Business ITR, Human Services ITR and Judiciary ITR programs start in the Fall semester of ODD-NUMBERED years; students in the Education ITR and Healthcare ITR programs start in the Fall semester of EVEN-NUMBERED years. Close contact with an academic advisor is strongly recommended for planning, because many courses are only offered once every two years.

Interpretation & Translation–Business (Starts Fall semester of ODD-NUMBERED YEARS)

Semester 1–(Fall semester of Odd-Numbered Years)

ITR 101	Introduction to Interpretation & Translation	3
ITR 102	Tools for the Interpreter and Translator	3

Semester 2–(Spring semester of Even-Numbered Years)

ITR 103	Fundamentals of Interpretation	3
ITR 104	Fundamentals of Translation	3

Semester 3–(Summer term of Even-Numbered Years)

BUS 102	Introduction to Business	3
ITR 109	Interp/Trans Ethics I	3

Semester 4–(Fall semester of Even-Numbered Years)

ITR 211	Business Semester & Sight Trans	3
ITR 213	Business Interpretation I	3

Semester 5–(Spring semester of Odd-Numbered Years)

ITR 214	Business Interpretation II	3
ITR 217	Business Translation	3

Semester 6–(Summer term of Odd-Numbered Years)

ITR 209	Interp/Trans Ethics II	3
ITR 811	Business I/T Internship	3

These credits are applicable to the AS degree in Interpretation & Translation.

TOTAL CREDITS REQUIRED FOR THE INTERPRETATION & TRANSLATION–BUSINESS CERTIFICATE 36

Interpretation & Translation–Education

The Interpretation & Translation–Education certificate is for functionally bilingual students with a college degree (AA, AS, Bachelor or higher) who wish to work as education interpreters or translators in the K-12 system. Upon completion, students should be able to provide basic interpreting and translation services between English and their other language(s) in education contexts. The program is designed for students who wish to add education interpreting and translation skills to their current set of job skills.

Certificate students complete basic and specialized courses in Interpretation & Translation, as well as ethics and education. 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–Education certificate can also be applied to any of the other Interpretation & Translation certificates (Business, Healthcare, Human Services or Judiciary).

A program chairperson and a program counselor are available to assist students with education and career planning.

Employment opportunities for education interpreters and translators are currently found in all levels of K-12 education. There are also many volunteer opportunities.

Note: Students are required to complete a certificate program in one emphasis area at a time—there is no "mixing and matching" of emphasis area allowed. Once a student has completed a full certificate of specialization in one area, the student can enroll in a second (or subsequent) emphasis area and complete the certificate of specialization in that emphasis area with only 17 credits because the 18 credits of ITR required basic courses do not need to be retaken.

For more information about the Interpretation & Translation–Education certificate, please visit our website at **www.dmacc.edu/programs/itr**.

Location: Urban (NOTE: All Interpretation & Translation courses are online.)

Program Entry Requirements

1. Complete an application for admission.
2. Satisfy the assessment requirement.
3. Complete the ITR online program information orientation including the survey.
4. Provide evidence of completion of a college degree (AA, AS, Bachelor or higher).
5. 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 writing 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 chairperson
6. Show proficiency in a second language with one of the following:
   a. Evidence of completion of high school in a country where the 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 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 chairperson
   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. This course will be an extra course that does not count toward program requirements.

Students in the Business ITR, Human Services ITR and Judiciary ITR programs start in the Fall semester of ODD-NUMBERED years; students in the Education ITR and Healthcare ITR programs start in the Fall semester of EVEN-NUMBERED years. Close contact with an academic advisor is strongly recommended for planning, because many courses are only offered once every two years.

Interpretation & Translation–Education (Starts Fall semester of EVEN-NUMBERED YEARS)

Semester 1–(Fall semester of Even-Numbered Years)

ITR 101	Introduction to Interpretation & Translation	3
ITR 102	Tools for the Interpreter and Translator	3

Semester 2–(Spring semester of Odd-Numbered Years)

ITR 103	Fundamentals of Interpretation	3
ITR 104	Fundamentals of Translation	3

Semester 3–(Summer term of Odd-Numbered Years)

EDU 213	Introduction to Education	3
ITR 109	Interp/Trans Ethics I	3

Semester 4–(Fall semester of Odd-Numbered Years)

ITR 231	Education Semester & Sight Trans	3
ITR 233	Education Interpretation I	3

Semester 5–(Spring semester of Even-Numbered Years)

ITR 234	Education Interpretation II	3
ITR 237	Education Translation	3

Semester 6–(Summer term of Even-Numbered Years)

ITR 209	Interp/Trans Ethics II	3
ITR 831	Education I/T Internship	3

These credits are applicable to the AS degree in Interpretation & Translation.

TOTAL CREDITS REQUIRED FOR THE INTERPRETATION & TRANSLATION–EDUCATION CERTIFICATE 36

Interpretation & Translation–Healthcare

The Interpretation & Translation–Healthcare certificate is for functionally bilingual students with a college degree (AA, AS, Bachelor or higher) 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 and specialized courses in Interpretation & Translation, as well as ethics and biology. 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. Some credits earned for the Interpretation & Translation–Healthcare certificate can also be applied to any of the other Interpretation & Translation certificates (Business, Education, Human Services or Judiciary).

A program chairperson and a program counselor are available to assist students with education and career planning.

Employment opportunities for healthcare interpreters and translators are currently found wherever healthcare Interpretation & Translation services are needed. There are also many volunteer opportunities.

Note: Students are required to complete a certificate program in one emphasis area at a time—there is no "mixing and matching" of emphasis areas allowed. Once a student has completed a full certificate of specialization in one area, the student can enroll in a second (or subsequent) emphasis area and complete the certificate of specialization in that emphasis area with only 17 credits because the 18 credits of ITR required basic courses do not need to be retaken.

For more information about the Interpretation & Translation–Healthcare certificate, please visit our website at **www.dmacc.edu/programs/itr**.

Location: Urban (NOTE: All Interpretation & Translation courses are online.)

Program Entry Requirements:

1. Complete an application for admission.
2. Satisfy the assessment requirement.
3. Complete the ITR online program information orientation including the survey.
4. Provide evidence of completion of a college degree (AA, AS, Bachelor or higher).
5. 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 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 chairperson
6. Show proficiency in a second language with one of the following:
   a. Evidence of completion of high school in a country where the 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 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 chairperson
   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 in the Business ITR, Human Services ITR and Judiciary ITR programs start in the Fall semester of ODD-NUMBERED years; students in the Education ITR and Healthcare ITR programs start in the Fall semester of EVEN-NUMBERED years. Close contact with an academic advisor is strongly recommended for planning, because many courses are only offered once every two years.

Interpretation/Translation-Healthcare (Starts Fall semester of EVEN-NUMBERED YEARS)

Semester 1–(Fall semester of Even-Numbered Years)

ITR 101	Introduction to Interpretation & Translation	3
ITR 102	Tools for the Interpreter and Translator	3

Semester 2–(Spring semester of Odd-Numbered Years)

ITR 103	Fundamentals of Interpretation	3
ITR 104	Fundamentals of Translation	3

Semester 3–(Summer term of Odd-Numbered Years)

BIO 156	Human Biology w/Lab	3
ITR 109	Interp/Trans Ethics I	3

Semester 4–(Fall semester of Odd-Numbered Years)

ITR 271	Healthcare Semester & Sight Trans	3
ITR 273	Healthcare Interpretation I	3

Semester 5-(Spring semester of Even-Numbered Years)

ITR 274	Healthcare Interpretation II	3
ITR 277	Healthcare Translation	3

Semester 6-(Summer term of Even-Numbered Years)

ITR 209	Interp/Trans Ethics II	3
ITR 871	Healthcare I/T Internship	3

These courses are applicable to the AS degree in Interpretation & Translation.

TOTAL CREDITS REQUIRED FOR THE INTERPRETATION AND TRANSLATION–HEALTHCARE CERTIFICATE 36

Interpretation & Translation–Human Services

The Interpretation & Translation–Human Services certificate is for functionally bilingual students with a college degree (AA, AS, Bachelor or higher) who wish to work as human services interpreters or translators. Upon completion, students should be able to provide basic interpreting and translation services between English and their other language(s) in human services contexts. The program is designed for students who wish to add human services interpreting and translation skills to their current set of job skills.

Certificate students complete basic and specialized courses in Interpretation & Translation, as well as ethics and human services. 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–Human Services certificate can also be applied to any of the other Interpretation & Translation certificates (Business, Education, Healthcare or Judiciary).

A program chairperson and a program counselor are available to assist students with education and career planning.

Employment opportunities for human services interpreters and translators are currently found wherever human services Interpretation & Translation services are needed. There are also many volunteer opportunities.

Note: Students are required to complete a certificate program in one emphasis area at a time—there is no "mixing and matching" of emphasis areas allowed. Once a student has completed a full certificate of specialization in one area, the student can enroll in a second (or subsequent) emphasis area and complete the certificate of specialization in that emphasis area with only 17 credits because the 18 credits of ITR required basic courses do not need to be retaken.

For more information about the Interpretation & Translation–Human Services certificate, please visit our website at **www.dmacc.edu/programs/itr**.

Location: Urban (NOTE: All Interpretation & Translation courses are online.)

Program Entry Requirements

1. Complete an application for admission.
2. Satisfy the assessment requirement.
3. Complete the ITR online program information orientation including the survey.
4. Provide evidence of completion of a college degree (AA, AS, Bachelor or higher).
5. 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 writing 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 chairperson
6. Show proficiency in a second language with one of the following:
   a. Evidence of completion of high school in a country where the 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 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 chairperson
   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 in the Business ITR, Human Services ITR and Judiciary ITR programs start in the Fall semester of ODD-NUMBERED years; students in the Education ITR and Healthcare ITR programs start in the Fall semester of EVEN-NUMBERED years. Close contact with an academic advisor is strongly recommended for planning, because many courses are only offered once every two years.

Interpretation/Translation–Human Services (Starts Fall semester of ODD-NUMBERED YEARS)

Semester 1–(Fall semester of Odd-Numbered Years)		
ITR 101	Introduction to Interpretation & Translation	3
ITR 102	Tools for the Interpreter and Translator	3
Semester 2–(Spring semester of Even-Numbered Years)		
ITR 103	Fundamentals of Interpretation	3
ITR 104	Fundamentals of Translation	3
Semester 3–(Summer term of Even-Numbered Years)		
HSV 109	Introduction to Human Services	3
ITR 109	Interp/Trans Ethics I	3
Semester 4–(Fall semester of Even-Numbered Years)		
ITR 251	Human Services Semester & Sight Trans	3
ITR 253	Human Services Interpretation I	3
Semester 5–(Spring semester of Odd-Numbered Years)		
ITR 254	Human Services Interpretation II	3
ITR 257	Human Services Translation	3
Semester 6–(Summer term of Odd-Numbered Years)		
ITR 209	Interp/Trans Ethics II	3
ITR 851	Human Services I/T Internship	3

These courses are applicable to the AS degree in Interpretation & Translation.

TOTAL CREDITS REQUIRED FOR THE INTERPRETATION & TRANSLATION–HUMAN SERVICES CERTIFICATE 36

Interpretation & Translation–Judiciary

The Interpretation & Translation–Judiciary certificate is for functionally bilingual students with a college degree (AA, AS, Bachelor or higher) 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 languages(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 and specialized courses in Interpretation & Translation, as well as ethics and criminal law. 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 any of the other Interpretation & Translation certificates (Business, Education, Healthcare or Judiciary).

A program chairperson and a program counselor are available to assist students with education and career planning.

Employment opportunities for judiciary interpreters and translators are found in courts, law enforcement agencies, law offices, correctional institutions, and wherever judiciary Interpretation & Translation services are needed. There are also many volunteer opportunities.

Note: Students are required to complete a certificate program in one emphasis area at a time—there is no "mixing and matching" of emphasis area allowed. Once a student has completed a full certificate of specialization in one area, the student can enroll in a second (or subsequent) emphasis area and complete the certificate of specialization in that emphasis area with only 17 credits because the 18 credits of ITR required basic courses do not need to be retaken.

For more information about the Interpretation & Translation–Judiciary certificate, please visit our website at **www.dmacc.edu/programs/itr**.

Location: Urban (NOTE: All Interpretation & Translation courses are online.)

Program Entry Requirements:

1. Complete an application for admission.
2. Satisfy the assessment requirement.
3. Complete the ITR online program information orientation including the survey.
4. Provide evidence of completion of a college degree (AA, AS, Bachelor or higher).
5. 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 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 chairperson
6. Show proficiency in a second language with one of the following:
   a. Evidence of completion of high school in a country where the 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 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 chairperson
   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 in the Business ITR, Human Services ITR and Judiciary ITR programs start in the Fall semester of ODD-NUMBERED years; students in the Education ITR and Healthcare ITR programs start in the Fall semester of EVEN-NUMBERED years. Close contact with an academic advisor is strongly recommended for planning, because many courses are only offered once every two years.

Interpretation & Translation-Judiciary (Starts Fall semester of ODD-NUMBERED YEARS)

Semester 1–(Fall semester of Odd-Numbered Years)		
ITR 101	Introduction to Interpretation & Translation	3
ITR 102	Tools for the Interpreter and Translator	3
Semester 2–(Spring semester of Even-Numbered Years)		
ITR 103	Fundamentals of Interpretation	3
ITR 104	Fundamentals of Translation	3
Semester 3–(Summer term of Even-Numbered Years)		
CRJ 130	Criminal Law	3
ITR 109	Interp/Trans Ethics I	3
Semester 4–(Fall semester of Even-Numbered Years)		
ITR 291	Judiciary Semester & Sight Trans	3
ITR 293	Judiciary Interpretation I	3
Semester 5–(Spring semester of Odd-Numbered Years)		
ITR 294	Judiciary Interpretation II	3
ITR 297	Judiciary Translation	3
Semester 6–(Summer term of Odd-Numbered Years)		
ITR 209	Interp/Trans Ethics II	3
ITR 891	Judiciary I/T Internship	3

These credits are applicable to the AS degree in Interpretation & Translation.

TOTAL CREDITS REQUIRED FOR THE INTERPRETATION & TRANSLATION–JUDICIARY CERTIFICATE 36

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.

For more information about the Landscape Design certificate, please visit our website at **www.dmacc.edu/programs/ag/commercialhorticulture**.

Fall Semester, Year 1—Select 1 Course from Option 1

AGH 147	Soil Fertility for Hort.		1
AGH 142	Construction, Safety & Maintenance		3
AGH 154	Residential Landscape Design		3
AGH 123	Woody Plant Materials		3
AGH 221	Principles of Horticulture		3
AGH 146	Soil Science for Horticulture	Opt 1	3
AGA 154	Fundamentals of Soil Science	Opt 1	3

Spring Semester, Year 1		
AGH 159	Landscape Drafting	2
Summer term, Year 1		
AGH 155	Landscape Design II	2
AGH 120	Herbaceous Plant Materials	3

TOTAL CREDITS REQUIRED TO COMPLETE THIS CERTIFICATE 23

The majority of these credits are applicable to the AAS degree in Commercial Horticulture.

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 coursework.

For more information about the Legal Assistant certificate, please visit our website at **www.dmacc.edu/programs/legalassistant**.

Graduation Requirements

To earn a Legal Assistant certificate, a student must submit proof of having earned a degree. Students must receive a grade of "C" or above in all PRL coursework.

Required Courses

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 & Writing I	3
PRL 113	Legal Research & 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 & 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 & 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

TOTAL CREDITS REQUIRED TO COMPLETE THIS CERTIFICATE 34

These credits are applicable to the AS degree in Legal Assistant.

Long-Term Care Administrator

The Long-Term Care Administrator 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 Administrator equivalency requirements, which include verification of a four-year degree.

Students are required to complete an application for admission, submit their official college transcripts to the DMACC Admissions Office and attend a program orientation. This program offers classes in a format to meet the needs of the nontraditional student.

For more information about the Long-Term Care Administrator certificate, please visit our website at **www.dmacc.edu/programs/aging/ltccert.asp**.

IMPORTANT NOTE: Students are strongly advised to contact one of the staff members of Aging Services Management in Bldg. 24 on the Ankeny Campus or to call 515-964-6262 or 515-964-6814 for additional important information.

Location: Ankeny

Required Courses

ASM 278	Management in Senior Care Services	3
ASM 279	Healthcare Human Resources	3
ASM 280	Healthcare Delivery Systems	2
ASM 282	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 261	Regulation of NF/SNF	3
ASM 262	Regulation of Supported Living	3
ASM 263	Practicum I: Quality of Life	2
ASM 264	Practicum II: Human Resources	1
ASM 265	Practicum III: Finance	1
ASM 266	Practicum IV: Environment	1
ASM 267	Practicum V: Leadership and Mgmt	1

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.

Long-Term Care Administrator–Practicum

The Long-Term Care Administrator–Practicum certificate is designed for students who need 12 credits of practicum in a long-term care facility to meet the Iowa Board of Nursing Home Administrators eligibility requirements for the NAB exam.

Students are required to complete an application for admission, submit official college transcripts to the DMACC Admissions Office and attend a program orientation.

For more information about the Long-Term Care Administrator–Practicum certificate, please visit our website at **www.dmacc.edu/programs/aging/ltccert.asp**.

IMPORTANT NOTE: Students are strongly advised to contact one of the staff members of Aging Services Management in Bldg. 24 on the Ankeny Campus or to call 515-964-6262 or 515-964-6814 for additional important information.

Location: Ankeny

Required Courses

ASM 261	Regulation of NF/SNF	3
ASM 262	Regulation of Supported Living	3
ASM 263	Practicum I: Quality of Life	2
ASM 264	Practicum II: Human Resources	1
ASM 265	Practicum III: Finance	1
ASM 266	Practicum IV: Environment	1
ASM 267	Practicum V: Leadership and Mgmt	1

TOTAL CREDITS REQUIRED TO COMPLETE THIS CERTIFICATE 12

These credits are applicable to the AS degree in Aging Services Management.

Maintenance (Diesel)

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.

For more information about the Maintenance (Diesel) certificate, please visit our website at **www.dmacc.edu/programs/diesel/certificate**.

Required Courses

*DSL 145	Basic Electricity	5
*DSL 733	Air Conditioning	3
*DSL 830	Operation and Maintenance	5
*DSL 606	Hydraulics and Brakes	6
DSL 330	Diesel Engine Tune-Up	3

TOTAL CREDITS REQUIRED TO COMPLETE THIS CERTIFICATE 22

**Classes marked with an * are applicable to the diploma and AAS degree in Diesel Technology.*

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.

For more information about the Management certificate, please visit our website at **www.dmacc.edu/programs/marketing**.

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
MGT 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.

Medical Insurance and Coding

Medical Insurance and Coding is one of the fastest-growing medical office specialties. Medical Insurance and Coding promises to increase in importance. Students learn to transform medical diagnoses and procedures into numbers or codes for purposes of reimbursement and recordkeeping.

This program is designed for individuals with previous medical experience in hospitals, medical centers, government facilities or insurance companies. (Individuals without previous experience should consider the Medical Office Specialist program, which provides training to work in a medical office.) This certificate program can be earned in coordination with the Medical Office Specialist degree. Courses are offered online or late afternoon and evening. To successfully complete this program, a student must complete all coursework as prescribed and maintain a 2.0 grade point average. A grade of "C-" or better is required in the first course of a sequential course offering before enrolling in the second-level course of the sequence or in a prerequisite course. This includes HSC 120, BCA 133 and MAP 141.

For more information about the Medical Insurance and Coding certificate, please visit our website at **www.dmacc.edu/programs/btec/medicalinscoding.asp**.

Program Entry Requirements

1. Complete an application for admission.
2. Complete the required COMPASS testing, obtaining a satisfactory score in writing skills (70 or higher) or an ACT writing score of 19 or higher or completion of ENG 060 with a grade of "B" or higher or program chairperson approval.
3. Keyboarding speed of 40 nwpm or above as demonstrated by a five-minute test.

Semester 1

ADM 157	Business English	3
*HSC 120	Medical Terminology I	3
BCA 133	Word Processing Skill Dev. I	4

(Note: Students must demonstrate a keyboarding speed of 25 NWPM or above, by taking a five-minute test, before enrolling in BCA 133.)

Semester 2

*HSC 121	Medical Terminology II	3
MAP 141	Medical Insurance	3
ADM 215	Medical Office Procedures	3

Semester 3

MAP 532	Human Body–Health and Disease	3
MAP 150	Adv. Medical Billing/Coding	3

TOTAL CREDITS REQUIRED TO COMPLETE THIS CERTIFICATE 25

**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.

The majority of credits listed above are applicable to the AAS degree in Medical Office Specialist.

Medical Transcriptionist

The Medical Transcriptionist certificate prepares the student to work in many aspects of the medical field converting patient records and physician dictation into medical reports. The growth of Electronic Health Records is changing the field of medical transcription, taking it beyond the traditional "typed" medical report to an electronic format. This requires the student to have a strong emphasis on editing. In addition, students will learn to use voice recognition software in transcription.

This program is designed for individuals with previous medical experience in hospitals, medical centers, government facilities or insurance companies. (Individuals without previous experience should consider the Medical Office Specialist program, which provides training to work in a medical office.) This certificate program can be earned in coordination with the Medical Office Specialist degree. Courses are offered online or late afternoon and evening. To successfully complete this program, a student must complete all coursework as prescribed and maintain a 2.0 grade point average. A grade of C- or better is required in the first course of a sequential course offering before enrolling in the second-level course of the sequence or in a prerequisite course. This includes HSC 120, MTR 120 and MTR 121.

For more information about the Medical Transcriptionist certificate, please visit our website at **https://go.dmacc.edu/programs/btec/pages/mt.aspx**.

Program Entry Requirements

1. Complete an application for admission.
2. 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 ENG 060 with a grade of "B" or better or program chairperson approval.
3. Keyboarding speed of 40 nwpm or above as demonstrated by a five-minute test.

Semester 1

ADM 157	Business English	3
HSC 120*	Medical Terminology I	3
MTR 120	Medical Transcription I	3
BCA 133	Word Processing Skill Development I	4

(Note: Students must demonstrate a keyboarding speed of 25 NWPM or above, by taking a five-minute test, before enrolling in BCA 133.)

Semester 2

HSC 121*	Medical Terminology II	3
MTR 121	Medical Transcription II	3

Semester 3

MAP 532	Human Body–Health and Disease	3
MTR 122	Medical Transcription III	3

TOTAL CREDITS REQUIRED TO COMPLETE THIS CERTIFICATE 25

**Challenge test available. Must earn 74%.*

The majority of these credits are also applicable to the Medical Office Specialist AAS degree.

Microcomputers

This certificate is designed for people who want 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.

For more information about the Microcomputers certificate, please visit our website at **www.dmacc.edu/programs/bis/microcomputerscert.asp**.

Required Courses

BUS 102	Introduction to Business		3
CIS 125	Intro to Programming Logic w/Lang		3
CIS 402	COBOL		3
CSC 110	Intro to Computers		3
BCA 113	Computer Network Literacy		3

Option Courses–Select a Minimum of 6 Credits

ACC 131	Principles of Accounting I	Opt 1	4
ACC 132	Principles of Accounting II	Opt 1	4
ACC 311	Computer Accounting	Opt 1	3
ACC 361	Accounting Spreadsheets	Opt 1	3
CIS 413	COBOL II	Opt 1	4
CIS 604	Visual BASIC	Opt 1	3

CIS 612	Advanced Visual BASIC	Opt 1	3
CIS 161	C++	Opt 1	3
CIS 164	Advanced C++	Opt 1	3
CIS 303	Introduction to Database	Opt 1	3
CIS 332	Database and SQL	Opt 1	3
CIS 338	SQL/Oracle	Opt 1	3
CIS 346	Database Design	Opt 1	3

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 degree in Business Information Systems.

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 with 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, along with 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.

For more information about the Network Security Manager certificate, please visit our website at **www.dmacc.edu/programs/networksecurity**.

Required Courses

BCA 113	Computer Network Literacy	3
CIS 303	Introduction to Database	3
CIS 505	Structured Systems Analysis	4
NET 612	Fundamentals of Network Security	3
NET 715	Database Security & Auditing	3
NET 730	Computer Forensics & Investigation	3

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.

For more information about the Office Specialist certificate, please visit our website at **www.dmacc.edu/programs/btec/os.asp**.

Required Courses

BUS 112	Business Math	3
MGT 145	Human Relations in Business	3
ADM 157	Business English	3
ADM 131	Office Calculators	1
BCA 212	Intro Computer Business Appl	3
BCA 133	Word Processing Skill Development I	4

(Note: Students must demonstrate a keyboarding speed of 25 NWPM or above, by taking a five-minute test, before enrolling in BCA 133.)

TOTAL CREDITS REQUIRED TO COMPLETE THIS CERTIFICATE..... 17

These credits are applicable to the Administrative Assistant AAS degree and the Office Assistant diploma.

Paramedic Specialist

The Paramedic Specialist certificate prepares individuals to use critical thinking skills to provide treatment for medical, trauma and cardiac emergencies in the pre-hospital setting. The Paramedic Specialist transports patients to and between hospitals using ground and air ambulances, and performs skills in a variety of settings including emergency departments, critical care units and cardiac catheter labs. Course content includes anatomy and physiology, pathology, and the identification and initial diagnosis of disease and injury in a variety of populations. Paramedic Specialists initiate IVs, perform endotracheal intubation, read electrocardiograms and provide cardiac defibrillation. Instruction in rescue operations, crisis scene management and medical triage is included.

This program will prepare the student to become a Paramedic Specialist. The program provides students with the necessary preparatory courses for seeking certification as a Nationally Registered Paramedic, which leads to certification as a Paramedic Specialist in the State of Iowa. National certification will require a passing score on a nationally-recognized certification exam of Emergency Medical Technician-Paramedic (NREMT-P). At the successful completion of the program, a Paramedic Specialist certificate will be awarded.

The student may further their education by obtaining an AAS degree. (See the Paramedic Specialist AAS Degree in this catalog.) The Paramedic Specialist certificate is the foundation of the degree. Within the degree, students may choose to specialize in one of three tracks: management, clinical or fire science. Most paramedic specialists are interested in one of these areas of expertise.

Criminal background checks will be completed on each student. Criminal convictions or documented history of abuse may delay or prevent students from participation in paramedic specialist education experiences. Students unable to participate in paramedic specialist education will be unable to complete the Paramedic Specialist program.

For more information about the Paramedic Specialist certificate, please visit our website at **www.dmacc.edu/programs/health/paramedic**.

Location: Ankeny

Program Entry Requirements

1. Complete an application for admission.

2. Attend any required information/registration session.

3. Submit a copy of current State of Iowa EMT–Basic, Iowa EMT-Intermediate/85 or Iowa EMT–Paramedic certification (I/99). All students must have an Iowa EMT–B or EMT–I certification.
4. Submit evidence of a grade of "C" or better in one year of high school biology OR a grade of "C" or better in DMACC Academic Achievement Center Biology I OR equivalent.
5. Obtain a minimum score of 81 in Reading on the COMPASS test.
6. Obtain a minimum score of 46 in Algebra on the COMPASS test OR a minimum ACT math score of 19 OR obtain a grade of "C" or better in MAT 073 or equivalent.
7. Obtain a minimum score of 70 in English on the COMPASS test OR a minimum ACT English score of 19 OR a grade of "C" or better in ENG 061 or equivalent.
8. Submit evidence of a grade of "C" or better in one year of high school chemistry OR a grade of "C" or better in DMACC Academic Achievement Center Chemistry I and II OR equivalent.

To earn the Paramedic Specialist certificate, a grade of "C" or better is required in all EMS courses.

Students start Fall semester.

Semester 1

EMS 460	Role of the Paramedic	2
EMS 463	Medical/Legal/Ethical Issues	2
EMS 467	Prin. of Pathophysiology I	7
EMS 468	Prin. of Pathophysiology II	7

Semester 2

EMS 470	Patient Assessment	4
EMS 473	Medical Emergencies	7
EMS 476	Trauma	7

Semester 3

EMS 480	Special Considerations	6
EMS 483	Operations	4

TOTAL CREDITS REQUIRED TO COMPLETE THIS CERTIFICATE 46

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 semesters.

Results of background checks will be shared with cooperating agencies, which may prevent placement for clinical practicum. This will affect successful program completion.

Proof of immunizations is required prior to beginning of clinical rotation.

For more information about the Phlebotomy certificate, please visit our website at **www.dmacc.edu/programs/phlebotomy**.

Program Entry Requirements:

1. Complete an application for admission.
2. Attend a required information/registration session or obtain the approval of the program chairperson.
3. Submit to the Admissions Office evidence of high school graduation or GED completion prior to enrollment.

Required Courses

PHB 113	Principles of Phlebotomy	3
PHB 280	Phlebotomy Clinical	2

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 wish to update their skills or seek 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.

For more information about the Printing Technologies certificate, please visit our website atwww**.dmacc.edu/programs/printing**.

Required Courses

GRT 400	Intro to Printing Methods	4
GRT 403	Production Methods	2
GRT 409	Project Planning & Management	3
GRT 420	Advanced Printing Methods	4
GRT 427	Specialty Printing Methods	4

TOTAL CREDITS REQUIRED TO COMPLETE THIS CERTIFICATE 17

These credits are applicable to the AAS degree in Graphic Technologies.

Retailing

The Retailing certificate offers skills for students 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.

For more information about the Retailing certificate, please visit our website at **www.dmacc.edu/programs/marketing/**.

Required Courses

MKT 160	Principles of Retailing	3
MKT 140	Selling	3
APP 111	Visual Merchandising & Design	3
MGT 147	Leadership Development	3

TOTAL CREDITS REQUIRED TO COMPLETE THIS CERTIFICATE 12

These credits are also applicable to the AAS degree in Marketing and the AAS degree in Fashion/Design.

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.

For more information about the Sales certificate, please visit our website at **www.dmacc.edu/programs/marketing/**.

Required Courses

MKT 140	Selling	3
MKT 110	Principles of Marketing	3
MGT 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 degree 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.

For more information about the Supervision certificate, please visit our website at **www.dmacc.edu/programs/marketing/**.

Required Courses

MGT 130	Principles of Supervision	3
MGT 101	Principles of Management	3

Option Courses–Select a minimum of 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
BUS 150	E-Commerce on the Web	Opt 1	3
MKT 145	Sales Management	Opt 1	3
MGT 115	Administrative Management	Opt 1	3
MGT 800	Business Internship I	Opt 1	4
MKT 140	Selling	Opt 1	3
MKT 115	Business to Business Marketing	Opt 1	3
MKT 160	Principles of Retailing	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

TOTAL CREDITS REQUIRED TO COMPLETE THIS CERTIFICATE 18

These credits are applicable to the diploma in Sales & Management, the AAS degree in Management and the AAS degree in Marketing.

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.

For more information about the Turf Maintenance certificate, please visit our website at **www.dmacc.edu/programs/ag**.

Fall Semester, Year 1—Select 1 Course from Option 1

AGH 147	Soil Fertility for Hort.		1
AGH 146	Soil Science for Horticulture	Opt 1	3
AGA 154	Fundamentals of Soil Science	Opt 1	3

Spring Semester, Year 1

AGH 283	Pesticide Application Certification		2
AGH 111	Intro to Turfgrass Management		2

Summer Term, Year 1

AGH 160	Irrigation Systems		2
AGH 241	Sports Turf		2

Fall Semester, Year 2—Select 1 Course from Option 2

AGH 211	Advanced Turfgrass Management		3
MAT 772	Applied Math		3
ENV 115	Environmental Science	Opt 2	3
AGH 221	Principles of Horticulture	Opt 2	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 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.

For more information about the Viticulture certificate, please visit our website at **https://go.dmacc.edu/programs/viticulture**.

Required Courses–Select 1 Course from Option 1

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
VIN 104	Vit. for Wine Production	Opt 1	3
VIN 149	Grape and Wine Science	Opt 1	4

TOTAL CREDITS REQUIRED TO COMPLETE THIS CERTIFICATE 18

Wastewater Treatment Technology

The Wastewater Treatment Technology certificate is designed to give entry-level students and entry-level water industry employees training in skills and theory directly related to water operations. This certificate is designed to be a starting point for people who are interested in a career in the treatment field and will prepare them for entry-level employment. The diploma and AAS degree programs are designed to build from this certificate to allow workers in treatment operations to be a more comprehensive and valuable employee by giving them the skills to work on advanced equipment, controls and troubleshoot problematic equipment.

This program provides training and educational experiences that will prepare you for certification examinations. Work experience requirements must be met before you are eligible to take an examination for certification. Be sure to refer to the certifying body in your area to determine eligibility. In Iowa, visit the DNR website located at **www.iowadnr.gov/water/files/opcert.pdf**.

For more information about the Water and Wastewater Treatment Technology program, please visit our website at **www.dmacc.edu/programs/water**.

Program Entry Requirements:

1. Complete an application for admission.
2. Attend any required information/registration session.
3. Complete a high school biology course or equivalent with a "C" or higher.

Required Courses

WAT 307	Wastewater Treatment I	4
WAT 306	Wastewater Collection Systems	4
WAT 308	Wastewater Analysis	3
WAT 311	Wastewater Treatment II	4
ENV 115	Environmental Science	3

These credits are applicable to the Water and Wastewater Treatment Technology diploma and the AAS degree in Water Environmental Technology.

TOTAL CREDITS REQUIRED TO COMPLETE THIS CERTIFICATE 18

Water Treatment Technology

The Water Treatment Technology certificate is designed to give entry-level students and entry-level water industry employees training in skills and theory directly related to water operations. This certificate is designed to be a starting point for people who are interested in a career in the treatment field and will prepare them for entry-level employment. The diploma and AAS degree programs are designed to build from this certificate to allow workers in treatment operations to be a more comprehensive and valuable employee by giving them the skills to work on advanced equipment, controls and troubleshoot problematic equipment.

This program provides training and educational experiences that will prepare you for certification examinations. Work experience requirements must be met before you are eligible to take an examination for certification. Be sure to refer to the certifying body in your area to determine eligibility. In Iowa, visit the DNR website located at **www.iowadnr.gov/water/files/opcert.pdf**.

For more information about the Water and Wastewater Treatment Technology program, please visit our website at **www.dmacc.edu/programs/water**.

Program Entry Requirements:

1. Complete an application for admission.
2. Attend any required information/registration session.
3. Complete a high school chemistry course or equivalent with a grade of "C" or higher.

Required Courses

WAT 300	Water Analysis	3
WAT 304	Water Treatment I	4
WAT 305	Water Distribution Systems	4
WAT 312	Water Treatment II	4
ENV 115	Environmental Science	3

These credits are applicable to the Water and Wastewater Treatment Technology diploma and the AAS degree in Water Environmental Technology.

TOTAL CREDITS REQUIRED TO COMPLETE THIS CERTIFICATE 18

Web Developer

This certificate provides a basic set of web development skills that focus on creating commercial website applications. A student who completes this certificate should be able to design and build a commercially oriented website application. The application would include such basic e-commerce functionality as shopping carts, database-driven catalogs and payment processing.

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 semester.

For more information about the Web Developer certificate, please visit our website at **www.dmacc.edu/programs/webdevelopment**.

Required Courses

Semester 1–Select 1 Course from Option 1 and 1 Course from Option 2

BUS 150	E-Commerce on the Web		3
WDV 101	Intro HTML and CSS	Opt 1	3
CIS 204	Intro to Website Development	Opt 1	3
WDV 151	Intro Web Design		3
WDV 131	Intro Photoshop and Fireworks	Opt 2	3
GRD 463	Photoshop	Opt 2	3
ART 225	Photoshop for Photography	Opt 2	3

Semester 2–Select 1 Course from Option 3

WDV 245	Content Management Systems I		3
WDV 261	Intro Flash		3
WDV 221	Intro Javascript	Opt 3	3
CIS 240	E-Commerce Website II	Opt 3	3

TOTAL CREDITS REQUIRED TO COMPLETE THIS CERTIFICATE 21

These credits are applicable to the Web Developer diploma and the Web Development AAS degree.

PROGRAMS AVAILABLE

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 required for the student to enter employment in the welding field, or for the student's own personal gain.

For more information about the Welding certificate, please visit our website at **www.dmacc.edu/programs/welding**.

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.

Advanced Arc Welding

(For Advanced Arc Welding, students should choose one of the following options)

Semester 1			
WEL 176	Advanced Arc Welding I (SMAW)	Opt 1	2
Semester 2			
WEL 177	Advanced Arc Welding II (SMAW)	Opt 1	3
Semester 1			
WEL 276	Adv Arc I SMAW Unlimited	Opt 2	2
Semester 2			
WEL 277	Adv Arc II SMAW Unlimited	Opt 2	3
Semester 1			
WEL 236	Advanced Arc Welding I (GMAW)	Opt 3	2
Semester 2			
WEL 237	Advanced Arc Welding II (GMAW)	Opt 3	3
Semester 1			
WEL 238	Adv Arc I GMAW Unlimited	Opt 4	2
Semester 2			
WEL 239	Adv Arc II GMAW Unlimited	Opt 4	3
Semester 1			
WEL 282	Advanced Arc Welding I (FCAW)	Opt 5	2
Semester 2			
WEL 283	Advanced Arc Welding II (FCAW)	Opt 5	3
Semester 1			
WEL 284	Adv Arc I FCAW Unlimited	Opt 6	2
Semester 2			
WEL 285	Adv Arc II FCAW Unlimited	Opt 6	3
Semester 1			
WEL 246	Adv Arc Welding I (GMAW) Alum	Opt 7	2
Semester 2			
WEL 247	Adv Arc Welding II (GMAW) Alum	Opt 7	3
Semester 1			
WEL 248	Adv Arc I GMAW Alum Unlimited	Opt 8	2
Semester 2			
WEL 249	Adv Arc II GMAW Alum Unlimited	Opt 8	3

TOTAL CREDITS REQUIRED FOR ADVANCED ARC WELDING 5

Pipe Welding

WEL 303	Pipe Welding (SMAW)	3

Wine Service

The Wine Service certificate will prepare students to objectively analyze wines, implement service standards consistent with fine dining, manage restaurant beverage programs and train wait staff. The resulting beverage expertise will increase restaurant revenue and gain repeat patrons.

For more information about the Wine Service certificate, please visit our website at **www.dmacc.edu/programs/viticulture**.

Required Courses–Choose 4 Credits from Option 1

VIN 150	Introduction to Wine		3
VIN 153	Intro to Wine Regions		1
VIN 175	Wine Service Operations		2
HCM 550	Food and Wine Seminar		3
VIN 250	Wine Regions of the World		3
VIN 275	Sensory Science		4
VIN 151	Cellar Tech. and Operations	Opt 1	4

VIN 152	Intro. to Wine Science	Opt 1	4
VIN 932	Internship in Enology	Opt 1	3
VIN 185	Introductory Sommelier Prep.	Opt 1	2
VIN 295	Certified Sommelier Prep.	Opt 1	2
HCM 300	Beverage Management	Opt 1	2

TOTAL CREDITS REQUIRED TO COMPLETE THIS CERTIFICATE 20

Certificates of Completion

TRANSPORTATION INSTITUTE

Commercial Vehicle

Commercial Vehicle Operator Program

The Transportation Institute Commercial Vehicle Operator program is one of approximately 80 in the U.S. that have 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 evening 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 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.

For more information about the Commercial Vehicle Operator program, please visit our website at **www.dmacc.edu/truckdrivingschools**.

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 of $25,000–$40,000 the first year.
6. Excellent career opportunities within the industry.

Required Courses	Contact Hours
Basic Operations	81.75
Safe Operational Practices	44.50
Advanced Operating Procedures	38.00
Vehicle Maintenance	16.75
Non-Vehicle Activities	59.00

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 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.

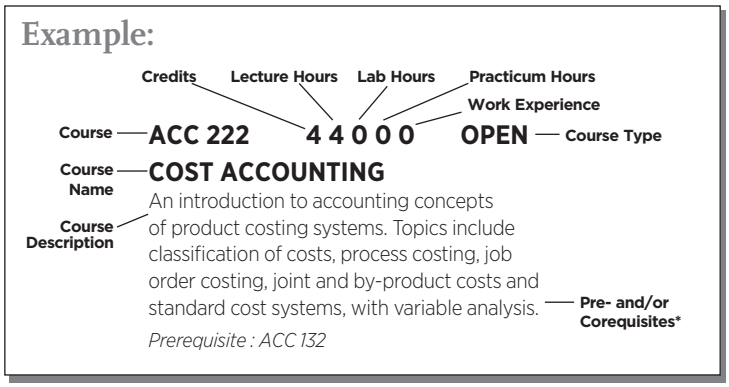
For more information about the RV Safety and Education Program, please visit our website at **www.dmacc.edu/conteddesc/rv.asp**.

NOTES

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.

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 3 3 0 0 0 OPEN
INTRO TO ACCOUNTING

An introductory course in accounting fundamentals and procedures. Includes capturing and analyzing business data and financial statement preparation.

ACC 124 3 3 0 0 0 VOC/TECH
ACCOUNTING PROFESSIONALISM

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 4 4 0 0 0 GENERAL
PRINCIPLES OF ACCOUNTING I

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 4 4 0 0 0 GENERAL
PRINCIPLES OF ACCOUNTING II

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: Successful completion of ACC 131 with a grade of "C" or above

ACC 161 3 3 0 0 0 VOC/TECH
PAYROLL ACCOUNTING

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: Successful completion of ACC 131 or ACC 111 with a grade of "C" or above

ACC 165 2 2 0 0 0 VOC/TECH
PAYROLL CERTIFICATION REVIEW

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 3 3 0 0 0 VOC/TECH
FINANCIAL ANALYSIS

An analytical study of accounting information and financial statements. The course focuses on the financial ratio analysis that is used to interpret data and reports for financial decision-making.

Prerequisite: Successful completion of ACC 132 with a grade of "C" or above

ACC 193 3 3 0 0 0 VOC/TECH
ACCOUNTING PROCEDURES/MGMT

A project approach to recordkeeping systems and office management. Includes topics in receivables, payables, banking records, planning and organizing, leadership and human relations and communications.

Prerequisite: Successful completion of ACC 131 with a grade of "C" or above

ACC 222 4 4 0 0 0 OPEN
COST ACCOUNTING

An introduction to accounting concepts of product costing systems. Topics include classification of costs, process costing, job ordering costing, joint and by-product costs and standard cost systems with variable analysis.

Prerequisite: Successful completion of ACC 132 with a grade of "C" or above

ACC 231 4 4 0 0 0 OPEN
INTERMEDIATE ACCOUNTING I

Emphasis on theory, standards and principles and the "why" of accounting. The framework goes beyond the procedural level to the conceptual level. Topics include preparation of income statements, balance sheets and related footnotes. Applicable FASB pronouncements are presented.

Prerequisite: Successful completion of ACC 132 with a grade of "C" or above

ACC 232 4 4 0 0 0 OPEN
INTERMEDIATE ACCOUNTING II

Continuation of Intermediate Accounting I. Topics include long-term debt, investments, equity, pensions, leases, accounting changes, earnings per share and accounting for inflation.

Prerequisite: Successful completion of ACC 231 with a grade of "C" or above

ACC 241 3 3 0 0 0 VOC/TECH
TREASURY & CASH MANAGEMENT

Introduces the requisite skills and knowledge for entry-level positions in the treasury and cash management operation. Utilizes case studies and articles relevant to treasury management practice. Relates directly to accounting and financial management topics.

Prerequisite: Successful completion of ACC 131 with a grade of "C" or above

COURSE DESCRIPTIONS

ACC 251 3 3 0 0 0 OPEN
GOVERNMENT & NONPROFIT ACCOUNTING

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: Successful completion of ACC 131 with a grade of "C" or above

ACC 261 3 3 0 0 0 OPEN
INCOME TAX ACCOUNTING

An introduction to personal income tax. Emphasizes computation of federal and state income taxes and preparation of tax forms.

Prerequisite: Successful completion of ACC 111 or ACC 131 with a grade of "C" or above

ACC 268 3 3 0 0 0 VOC/TECH
BUSINESS TAX

Business Tax focuses on federal income tax associated with the three principal business forms: corporations, both S and C partnerships and limited liability companies. The tax issues related to formation, redemption, liquidation, reorganization and tax consequences are covered.

Prerequisite: Successful completion of ACC 131 with a grade of "C" or above

ACC 272 4 4 0 0 0 VOC/TECH
ACCOUNTING INFORMATION SYSTEMS

Identifies the information required by accountants as it relates to financial and managerial accounting. It provides an overview of the systems design and development process.

Prerequisites: Successful completion of ACC 132 and CSC 110 with a grade of "C" or above

ACC 281 3 3 0 0 0 VOC/TECH
AUDITING

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: Successful completion of ACC 231 with a grade of "C" or above

ACC 311 3 2 2 0 0 VOC/TECH
COMPUTER ACCOUNTING

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: Successful completion of ACC 111 or ACC 131 with a grade of "C" or above

ACC 361 3 2 2 0 0 VOC/TECH
ACCOUNTING SPREADSHEETS

Microcomputer operations with an emphasis on managerial uses. Includes topics in spreadsheet modeling, spreadsheet commands, manufacturing systems, budgeting and profit analysis.

Prerequisite: Successful completion of ACC 131 and CSC 110 with a grade of "C" or above or equivalent

ACC 850 3 2 2 0 0 VOC/TECH
TAX ASSISTANCE INSTITUTE

An opportunity to participate in a volunteer income tax assistance program by applying classroom skills to actual experience. Includes training to provide free tax assistance and preparation of basic tax returns for older, handicapped and low-income taxpayers. (P/F)

Prerequisite: Successful completion of ACC 261 or equivalent with a grade of "C" or above

ACC 932 3-4 0 0 0 12-16 VOC/TECH
ACCOUNTING INTERNSHIP

An opportunity to gain practical experience 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 12 hours of ACC courses with a grade of "C" or above

Corequisite: ACC 946

ACC 946 1 1 0 0 0 VOC/TECH
ACCOUNTING CAREER SEMINAR

Designed to provide in-depth discussion of Accounting/Bookkeeping/Accounting Specialist work experiences.

Prerequisite: Successful completion of 12 hours of ACC courses with a grade of "C" or above

Corequisite: ACC 932

ADM 105 1 0 2 0 0 VOC/TECH
INTRO TO KEYBOARDING

Basic instruction, in the Windows environment, on a personal computer to learn the touch system for the alphabetic keyboard, number keyboard and ten-key numeric pad.

ADM 131 1 0 2 0 0 VOC/TECH
OFFICE CALCULATORS

Electronic calculator operations. Emphasis on speed and accuracy. Includes topics in addition, subtraction, multiplication and division; also the use of constants, chain computations and prorations.

ADM 138 3 0 6 0 0 VOC/TECH
DATA ENTRY

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 NWPM.

ADM 154 3 3 0 0 0 VOC/TECH
BUSINESS COMMUNICATION

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 NWPM.

Prerequisite: ADM 157 with a "C-" or better and BCA 212 with a "C-" or better

ADM 157 3 3 0 0 0 VOC/TECH
BUSINESS ENGLISH

The fundamentals of proofreading, grammar, spelling, punctuation, word usage, capitalization, abbreviations and number usage.

ADM 162 3 2 2 0 0 VOC/TECH
OFFICE PROCEDURES

Office Procedures is the integration of the knowledge and skills needed to function in an office environment. Topics include telecommunication techniques, components of customer relations and various responsibilities of the administrative assistant.

Prerequisite: ADM 157 with a "C-" or better and BCA 133 with a "C-" or better

ADM 164 3 2 2 0 0 VOC/TECH
ADMINISTRATIVE OFFICE APPL

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 with a "C-" or better and BCA 213 with a "C-" or better

ADM 208 3 3 0 0 0 VOC/TECH
LEGAL TERMINOLOGY

Provides training in spelling, defining and pronouncing terms common in the legal field.

ADM 215 3 3 0 0 0 VOC/TECH
MEDICAL OFFICE PROCEDURES

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 HIPPA and mandate reporter. Students are introduced to medical office computerized management software.

Prerequisites: HSC 120 with a "C-" or better and BCA 137 with a "C-" or better

ADM 221 2 2 0 0 0 VOC/TECH
CAREER DEVELOPMENT SKILLS

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.

ADM 259 3 3 0 0 0 VOC/TECH
PROFESSIONAL DEVELOPMENT

Designed to make students aware of their personal strengths and identify 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.

COURSE DESCRIPTIONS

ADM 265 2 0 0 0 8 VOC/TECH
SUPERVISED PRACTICAL EXP.

Practical 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 with a "C-" or better and BCA 133 with a "C-" or better and BCA 212 with a "C-" or better. Corequisite: ADM 937

ADM 300 1 1 0 0 0 VOC/TECH
CPS REVIEW SEC. I ECON & LAW

Section I helps students 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 1 1 0 0 0 VOC/TECH
CPS REVIEW SEC. II OFFICE SYS

Section II helps students 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 1 1 0 0 0 VOC/TECH
CPS REVIEW SEC. III MANAGEMENT

Section III helps students 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 936 3 1 0 0 8 VOC/TECH
OCCUPATIONAL EXPERIENCE

Opportunity for supervised work experience related to the major academic interests of students in an approved business setting. Students are guided by coordinated efforts of the employer/supervisor and the instructor. Skills and knowledge are applied by working a minimum of 120 hours. (P/F)

Prerequisite: Minimum employable skills as determined by instructor and with instructor approval.

ADM 937 1 1 0 0 0 VOC/TECH
PROF OFFICE CAREERS SEMINAR

An examination of topics relevant to the office internship experience, sharing workplace problems encountered and the solutions found to those problems.

Prerequisite: ADM 157 with a "C-" or better and BCA 133 with a "C-" or better and BCA 212 with a "C-" or better. Corequisite: ADM 265

ADN 126 2 1 2 0 0 VOC/TECH
PASSPORT TO ADN NURSING

Assists preparation for a successful transition to the ADN program. Passport focuses on knowledge components, student expectations, study/time management skills, critical thinking and concept mapping with emphasis on application.

Prerequisite: Acceptance into the Advanced Standing Nursing program

ADN 416 5 3 0 6 0 OPEN
FAMILY HEALTH NURSING

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 5 3 0 6 0 OPEN
MENTAL HEALTH NURSING

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: ADN 611

ADN 551 7 4 0 9 0 OPEN
ADULT HEALTH NURSING

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 2 1 2 0 0 OPEN
PROFESSIONAL NURSING PRACTICE

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

ADN 821 3 1 0 6 0 OPEN
NURSING SEMINAR

Emphasizes the transition from nursing student to entry-level professional nurse. Clinical preceptorship occurs in a variety of healthcare settings.

Prerequisite: ADN 551

AGA 114 3 3 0 0 0 OPEN
PRINCIPLES OF AGRONOMY

An introductory course in the general principles of crop production and management. Major areas of study are food production, crop classification, plant growth factors, seed production and variety selection.

AGA 129 3 3 0 0 0 VOC/TECH
INTRO TO SUSTAINABLE AGRICUL

This course will provide a broad introduction to the economic, environmental and cultural components of the food production and marketing systems popularly known as sustainable agriculture. Subjects covered include the meaning of sustainable agriculture; its emergence and growth as a social movement; pertinent soil, crop and livestock management practices and a global perspective on sustainability and 21st-century agriculture.

AGA 154 3 3 0 0 0 OPEN
FUNDAMENTALS OF SOIL SCIENCE

An extended course in soils and fertilizers. A study of the physical, chemical and biological properties of soils. Also includes the study of fertilizers, their composition, manufacture and use.

Corequisite: AGA 157

AGA 157 1 0 2 0 0 OPEN
SOIL FERTILITY

The physical, chemical and biological study of soil properties provided through a laboratory setting. The class will review the interaction of nutrients, land measurement and environmental concerns through soil management issues.

Corequisite: AGA 154 (recommended) or AGH 146

AGA 211 3 3 0 0 0 OPEN
GRAIN AND FORAGE CROPS

An advanced course using the problem-solving approach to crop management. Principles and practices of agronomic science are used in the discussion of management problems related to corn, soybeans, forage, small grain, sorghum and alternative crops.

Prerequisite: Permission of Instructor or AGA 381, 114, 154

AGA 222 2 2 0 0 0 OPEN
GRAIN MANAGEMENT

Designed to acquaint the student with the complete cycle of grain from the farm to the country elevator. Major areas of study are the management of facilities, equipment, personnel and finances, warehouse requirements, grain grading, grain conditioning and grain inventory management.

AGA 284 3 3 0 0 0 OPEN
PESTICIDE APPLICATION CERTIFIC

Common features of pests, methods of control, how pesticides work, pesticide labels, application equipment, calibration, laws and regulations governing pesticide use.

AGA 381 3 2 2 0 0 OPEN
CROP SCOUTING

The course develops an understanding of the factors that affect plant growth. Plant nutrients are considered as students gain experience in identifying major and micronutrient deficiency symptoms in plants by means of soil tests, plant tests and observations.

AGB 101 3 3 0 0 0 OPEN
AGRICULTURAL ECONOMICS

The study of economic principles and their application to the distribution of agricultural supplies.

AGB 235 3 3 0 0 0 OPEN
INTRO TO AGRICULTURAL MARKETS

Focuses 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 economic marketing tool will be covered.

COURSE DESCRIPTIONS

AGB 330 3 3 0 0 0 OPEN
FARM BUSINESS MANAGEMENT
Includes management problem identification and solutions using business and economic principles, enterprise and total farm budgeting, adjusting to uncertainty, investment decisions, farm business organization, farm records and business analysis.

AGB 331 3 3 0 0 0 OPEN
AGRIBUSINESS MANAGEMENT
A study of the role and organization of several aspects of agribusiness including financial management and control, marketing, operation and resource management.

AGB 440 3 3 0 0 0 VOC/TECH
AGRICULTURAL NICHE MARKETING
The marketing of agricultural products in a niche market requires an understanding of the challenges for marketing a product or service in small portions to a consumer who is not being readily served by the mainstream product or service providers. This course will explore the opportunities available and identify procedures for establishing niche markets.

AGB 802 2 0 0 0 8 OPEN
AGRIBUSINESS INTERNSHIP I
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 113 or AGA 114

AGB 812 2 0 0 0 8 OPEN
AGRIBUSINESS INTERNSHIP II
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

AGC 314 2 2 0 0 0 VOC/TECH
LEADERSHIP IN AGRICULTURE
The course has been designed as a leadership development course that will allow students to actively engage in a variety of industry activities in preparation for their involvement as leaders within the industry. The development and practice of leadership skills is achieved through participation in a community or professional organization. Introductory skills to successfully coordinate and conduct a business meeting will be part of the course.

AGC 420 3 3 0 0 0 VOC/TECH
AGRICULTURAL ISSUES
This course will explore the current issues that affect agriculture from the perspective of the producer and consumer in a society with little direct connection to food production. The course will review today's most pressing issues: the environment, the national debt, international trade and world health and how it relates to global society change.

AGH 103 1 0 2 0 0 VOC/TECH
FLORAL DESIGN I
Construction and mechanics of merchandising flowers and plants at retail.

AGH 104 1 0 2 0 0 VOC/TECH
FLORAL DESIGN II
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

AGH 111 2 2 0 0 0 VOC/TECH
INTRO TO TURFGRASS MANAGEMENT
The study of soil and turf relationships 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 146 or AGA 154, AGH 147, AGH 221

AGH 120 3 2 2 0 0 VOC/TECH
HERBACEOUS PLANT MATERIALS
The identification, morphology, landscape use and culture of native and nonnative 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

AGH 123 3 1 4 0 0 VOC/TECH
WOODY PLANT MATERIALS
The identification, morphology, landscape use and culture of native and nonnative woody plants of the Upper Midwest. First 10 weeks, emphasis on deciduous plants. Last 5 weeks, emphasis on evergreens.
Corequisite: AGH 159

AGH 132 3 2 2 0 0 VOC/TECH
INTRODUCTION TO GREENHOUSE
An introduction to greenhouse structures, heating and environmental control systems and watering. Winter and spring commercial potted plants, cut flowers and bedding plant crops will be explored vocationally in the college greenhouse.
Prerequisite: AGH 146 or AGA 154, AGH 147, and AGH 221

AGH 133 3 2 2 0 0 VOC/TECH
GREENHOUSE PROD TECHNIQUES
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

AGH 142 3 2 2 0 0 VOC/TECH
CONSTRUCTION, SAFETY & MAINT.
Principles and practices of residential landscape construction. Encompasses process from initial client contact to installation of plant material and hardscape. Laboratory work involves landscape installation using landscape materials and techniques.

AGH 146 3 3 0 0 0 VOC/TECH
SOIL SCIENCE FOR HORTICULTURE
A study of the management and properties of soils and rooting media for horticulturalists. The course will study the physical, chemical and biological aspects of soil management. This course also includes the study of soil amendments for fertilization, pH and salt control.
Corequisite: AGH 147

AGH 147 1 0 2 0 0 VOC/TECH
SOIL FERTILITY FOR HORT.
This course provides a study of the practical application of soil management to the various aspects unique to soil and potting media management in horticulture.
Corequisite: AGH 146 (recommended) or AGA 154

AGH 154 3 1 4 0 0 VOC/TECH
RESIDENTIAL LANDSCAPE DESIGN
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

AGH 155 2 1 2 0 0 VOC/TECH
LANDSCAPE DESIGN II
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

AGH 159 2 2 0 0 0 VOC/TECH
LANDSCAPE DRAFTING
Introduction to landscape drafting and associated drafting equipment and materials.
Corequisite: AGH 123

AGH 160 2 1 2 0 0 VOC/TECH
IRRIGATION SYSTEMS
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, and maintenance and operation costs will be discussed.
Prerequisite: AGH 146 or AGA 154, AGH 147, AGH 111

AGH 211 3 2 2 0 0 VOC/TECH
ADVANCED TURFGRASS MANAGEMENT
Turf management practices on golf and recreation areas with practical experience in maintaining turf on outdoor campus facilities.
Prerequisite: AGH 111

AGH 221 3 3 0 0 0 VOC/TECH
PRINCIPLES OF HORTICULTURE
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.

COURSE DESCRIPTIONS

AGH 233 3 2 2 0 0 VOC/TECH
PLANT PROPAGATION I

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 146 or AGA 154, AGH 147, AGH 221

AGH 241 2 1 2 0 0 VOC/TECH
SPORTS TURF

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. Pre-competition practices of field layout along with post-competition practices of repair and field recovery will be discussed.

Prerequisite: AGH 146 or AGA 154, AGH 147, AGH 111

AGH 251 2 2 0 0 0 VOC/TECH
INSECTS AND DISEASES

Identification of diseases and insects that frequently infest horticultural crops and plant materials. Structures, functions 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 3 2 2 0 0 VOC/TECH
FRUIT AND VEGETABLE SCIENCE

A study of tree fruits, small fruits and vegetable culture, including varietal selection, planting, pruning, fertilizing, disease and insect control programs.

Prerequisite: AGH 146 or AGA 154, AGH 147, AGH 221

AGH 272 3 2 2 0 0 VOC/TECH
NURSERY PRODUCTION I

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 146 or AGA 154, AGH 147, AGH 221

AGH 281 3 2 2 0 0 VOC/TECH
ARBORICULTURE

A study of tree culture with emphasis on propagation, pruning, transplanting, pest control, urban environmental concerns and recognition of hazards and liabilities. Methods of evaluation of values also studied.

Prerequisite: AGH 146 or AGA 154, AGH 147, AGH 221

AGH 283 2 2 0 0 0 VOC/TECH
PESTICIDE APPLICATION CERTIFIC

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 3 3 0 0 0 VOC/TECH
GARDEN CENTER MANAGEMENT

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 2 0 0 0 10 VOC/TECH
HORTICULTURE INTERNSHIP I

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 2 0 0 0 10 VOC/TECH
HORTICULTURE INTERNSHIP II

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 336 3 3 0 0 0 VOC/TECH
ALTERNATIVE ENERGY IN AG

This course is designed to acquaint students with alternative energy sources in agriculture and their impact on the industry. Major areas of study will include petroleum, ethanol, biodiesel, wind energy and second generation fuel sources. Emphasis on application and selection, equipment operations, storage and handling procedures and federal regulations will be addressed.

AGP 333 3 2 2 0 0 OPEN
PRECISION AGRICULTURE APPL.

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 3 3 0 0 0 OPEN
SURVEY OF THE ANIMAL INDUSTRY

An analysis of the livestock industry with emphasis on reproduction, inheritance, performance testing, selection and marketing.

AGS 222 3 2 2 0 0 VOC/TECH
SURVEY OF AQUACULTURE INDUSTRY

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 225 3 3 0 0 0 OPEN
SWINE SCIENCE

The practical application of technical information to life-cycle swine production, including production systems, breeding and genetics, herd health, housing, marketing, management and nutrition.

Required: Permission of Instructor or AGS 319, 113

AGS 226 3 3 0 0 0 OPEN
BEEF CATTLE SCIENCE

The practical application of technical information to life-cycle beef production with emphasis on calf/cow production and feedlot management.

Prerequisite: Permission of instructor or AGS 319, 113

AGS 242 3 3 0 0 0 OPEN
ANIMAL HEALTH

A survey of diseases of large domestic animals, including discussion of causes, transmission, prevention and control.

AGS 245 1 1 0 0 0 VOC/TECH
INTRODUCTION TO ANIMAL DISEASE

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 3 3 0 0 0 OPEN
ANIMAL NUTRITION

The identification and study of feed ingredients, nutrients and additives. Determine feed requirements of various livestock classes. Ration balancing and feed formulations are computed.

AGS 323 3 3 0 0 0 OPEN
ANIMAL NUTRITION II

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

AGT 120 3 2 2 0 0 VOC/TECH
AGRICULTURAL APPL IN BIOTECH

This course will explore through discussion and laboratory demonstration the impact that biotechnology has in all agricultural applications. A variety of application techniques will be used in both the agronomic and animal science areas to provide students with an understanding of these significant developments and how they will be able to communicate more effectively with a customer base that utilizes the products being developed.

AGV 120 1 1 0 0 0 VOC/TECH
VETERINARY MEDICAL TERMINOLOGY

Course covers the origins of common medical terms used in the veterinary field. Using analysis of the word parts, the student will be able to determine the definition of medical terminology.

Prerequisite: Acceptance into the DMACC Veterinary Technology program

COURSE DESCRIPTIONS

AGV 124 1 0 2 0 0 VOC/TECH
INTRO TO VETERINARY TECHNOLOGY

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.

Prerequisite: Acceptance into the DMACC Veterinary Technology program

AGV 129 3 3 0 0 0 VOC/TECH
VETERINARY PHYSIOLOGY

Physiology with a veterinary clinical emphasis. Provides the basis for study of confirmation, production and pathological processes of diseases of dogs, cats, horses, sheep, cattle, swine and laboratory animals.

Prerequisite: Acceptance into the DMACC Veterinary Technology program

AGV 133 3 2 2 0 0 VOC/TECH
VETERINARY CLINIC PATHOLOGY I

This course covers parasite identification and testing and various sample collection, procedures and interpretation for common diagnostic testing performed in the veterinary laboratory.

Prerequisite: Acceptance into the DMACC Veterinary Technology program

AGV 134 3 2 2 0 0 VOC/TECH
VETERINARY CLINIC PATHOLOGY II

Continues Veterinary Clinical Pathology I with emphasis on coagulation studies and clinical chemistry. Selected serological tests will also be covered.

Prerequisite: AGV 120, 124, 129 and 133

AGV 138 1 0 2 0 0 VOC/TECH
CLINICAL PATHOLOGY LAB

A review of current clinical laboratory practices in veterinary pathology.

Prerequisite: AGV 134, AGV 164, AGV 172, AGV 266

AGV 139 1 1 0 0 0 VOC/TECH
INTRO VETERINARY PHARMACOLOGY

This course covers U.S. medication laws and discusses the basic groups of pharmaceuticals and their use in veterinary medicine. This includes dosage calculations, proper labeling, storage, inventory control, recordkeeping and dispensing of medications.

Prerequisite: AGV 120, 124, 129 and 133

AGV 140 3 3 0 0 0 VOC/TECH
VETERINARY PHARMACOLOGY

This course is designed to provide advanced knowledge in specific drug classification, usage and effects. This course will outline the technician's role and responsibilities in the pharmacy with regards to regulation of drugs, categories of drugs, labeling prescriptions, controlled drug logs, legal use of drugs, client education, calculations, measurement and compliance with manufacturer recommendations.

Prerequisite: AGV 134, AGV 139, AGV 151, AGV 166, AGV 932

AGV 151 3 2 2 0 0 VOC/TECH
INTRO VET TECH CLINICAL SKILLS

This course introduces the student to the basics of radiology, anesthesia, surgical preparation, veterinary customer service, veterinary computer programs, veterinary recordkeeping and other skills students will use during their internship.

Prerequisite: AGV 120, 124, 129 and AGV 133

AGV 160 4 2 4 0 0 VOC/TECH
ANESTHESIA/SURGICAL ASSISTANCE

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 postoperative patient management.

Prerequisite: AGV 164, AGV 172, AGV 266

AGV 164 2 1 2 0 0 VOC/TECH
CLINICAL MGMT DOMESTIC SPECIES

This course covers the management and husbandry of animals housed in a hospital or shelter situation. Proper kennel cleaning and disinfection, recordkeeping, monitoring of health parameters, nutrition, bathing, administration of common medications and diagnostic sampling.

Prerequisite: AGV 134, AGV 139, AGV 151, AGV 166, AGV 932

AGV 165 2 1 2 0 0 VOC/TECH
CLIN MGMT LAB/EXOTIC SPECIES

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 164, AGV 172, AGV 266

AGV 166 3 1 4 0 0 VOC/TECH
VETERINARY NURSING CARE

Introduces the fundamentals of animal nursing, including handling, restraint, patient history and admissions. Emphasis will be placed on preparation and administration of vaccines and medications for hospitalized animals.

Prerequisite: AGV 120, 124, 129 and 133

AGV 172 3 2 2 0 0 VOC/TECH
LARGE ANIMAL MEDICINE/SURGERY

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 134, AGV 139, AGV 151, AGV 166, AGV 932

AGV 182 3 2 2 0 0 VOC/TECH
DIAGNOSTIC IMAGING

This course is designed to introduce the student to diagnostic imaging. Topics include safety, patient positioning techniques, processing of film, proper machine use, technique chart, quality control and standard diagnostic procedures. It will also introduce the student to digital radiography, ultrasound MRI, CT and nuclear technologies.

Prerequisite: AGV 134, AGV 139, AGV 151, AGV 166, AGV 932

AGV 238 2 2 0 0 0 VOC/TECH
VTNE REVIEW COURSE I

This course will summarize learning within the veterinary technology program. The course will emphasize the connection between classroom learning and the practice of veterinary technology in the professional world. It will help to enhance the student's preparation for the state and national veterinary technology examinations.

Prerequisite: Instructor approval

AGV 266 2 1 2 0 0 VOC/TECH
ADV VETERINARY NURSING CARE

Continues Veterinary Nursing Care with emphasis on advanced veterinary nursing procedures.

Prerequisite: AGV 166, AGV 134, AGV 139, AGV 151, AGV 932

AGV 338 2 2 0 0 0 VOC/TECH
VTNE REVIEW COURSE II

This course will continue to summarize learning within the Veterinary Technology program. The course will emphasize the connection between classroom learning and the practice of veterinary technology in the professional world. It will help to enhance the student's preparation for the state and national veterinary technology examinations.

Prerequisite: Instructor approval

AGV 932 4 0 0 0 20 VOC/TECH
VET TECHNOLOGY INTERNSHIP

Internship experience within a veterinarian-related business with an emphasis on animal care procedures.

Prerequisite: AGV 134, 139, 151 and 166

ANT 100 3 3 0 0 0 CORE
INTRODUCTION TO ANTHROPOLOGY

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 CORE
CULTURAL ANTHROPOLOGY

The study of human cultures and their diversity. Students 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 but it is not a requirement.

ANT 110 3 3 0 0 0 GENERAL
FACES OF CULTURE

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.

COURSE DESCRIPTIONS

ANT 125 3 3 0 0 0 GENERAL
APPLICATIONS OF ANTHROPOLOGY

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 the 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

ANT 140 2 1 2 0 0 GENERAL
CULTURE & ENV OF BOREAL FOREST

The class is an intensive on-site, six-day course taking place in the Boundary Waters Canoe Area (BWCA) of Superior National Forest in Northern Minnesota. BWCA is a designated wilderness area, accessible in the spring, summer and fall by nonmotored canoe or kayak only. Students will learn how the cultural groups residing there for the past 9,000 years have interacted with the local environment, discussing the environmental exploitation strategies of the various indigenous populations and the historic Euro-American groups in the Boreal Forest. The environment of the Boreal Forest will also be studied, encompassing geology, ecology, botany and zoology. The students will use wilderness minimal-impact camping skills and travel from 35 to 50 miles via canoe. Wilderness living skills and safe and effective canoeing techniques will be taught.

ANT 150 3 3 0 0 0 GENERAL
GLOBAL ISSUES-LOCAL PERSPEC

Examines a variety of ways in which global connections affect cultural groups. Introduces the concepts and historical backdrop needed to understand global processes with specific cases from anthropological research that illuminate ties between local effect and general changes. The concept of "culture" is explained from critical and historical perspectives, along with recent shifts in theorizing and applying anthropological knowledge. The uses of qualitative field research in studies of globalization are emphasized. Students conduct a small topic-focused research project to see how globalization affects local processes in Iowa.

Prerequisite or Corequisite: ANT 100 or 105 or instructor approval

APP 101 2 1 2 0 0 VOC/TECH
SEWING BASICS

This course is intended for the student with very little or no sewing experience who would like to learn the basics of sewing. The course includes construction of two or more simple garments and/or projects. Students are encouraged to provide their own sewing machine and are required to furnish their own sewing kit (straight pins, tape measure, pin cushion, hand sewing needles/sharps, seam ripper, small scissors for trimming, sewing gauge) as well as fabric and notions to complete projects. (P/F)

APP 111 3 3 0 0 0 VOC/TECH
VISUAL MERCHANDISING & DESIGN

Focus will be learning design principles and design elements in visual merchandising and merchandise display. An emphasis is placed on planning and designing successful interior store or business displays and windows with the six components, as well as implementing all of the design principles.

APP 211 3 3 0 0 0 VOC/TECH
TEXTILES

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. Other topics include printing, dyeing processes, and the finishes available today.

APP 230 3 3 0 0 0 VOC/TECH
FASHION COORD & PROMOTION

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 the creation of a promotional plan to establish fashion leadership.

Prerequisite: APP 260

APP 250 3 3 0 0 0 VOC/TECH
DESIGN CONCEPTS

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 VOC/TECH
FASHION ANALYSIS AND DESIGN

Emphasis is placed on all phases of the apparel business planning process, including strategic planning, merchandise planning, creative planning, technical planning and production planning as well as discussions of the various types of retailers that sell the apparel products to the consumer. Design elements and design principles are applied to apparel design analysis. Basic garment styles are studied. Fashion forecasting and sources of inspiration are discussed. Current trends are prepared by the student in a research project. Students will learn how to develop a successful group line. Designer history and concepts are researched and shared in a project prepared by the student. The wide variety of fashion-related careers is also covered in this course.

APP 270 3 3 0 0 0 VOC/TECH
FASHION BUYING

Fashion moves quickly so 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 VOC/TECH
FASHION STUDY TOUR

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 VOC/TECH
ARCHITECTURAL DRAFTING I

Practical application of the basic skills of drafting involving the necessary thought processes. A complete set of residential drawings will be developed by hand—involving plans, elevations, sections and details.

ARC 116 2 2 0 0 0 VOC/TECH
CONSTRUCTION ESTIMATING

An orderly process of accounting for the items involved in a construction project.

ARC 127 5 2 6 0 0 VOC/TECH
ARCHITECTURAL DRAFTING II

This course will apply practical application of the basic skills of drafting involving the mechanics and the necessary thought processes.

Prerequisite: ARC 114 and CAD 119

ARC 128 5 2 6 0 0 VOC/TECH
ARCHITECTURAL DRAFTING III

Students will develop drawing of a small commercial building using Building Information Modeling software.

Prerequisite: ARC 127

ARC 165 3 3 0 0 0 VOC/TECH
MATERIALS & ASSEMBLIES I

An introduction to building materials and assemblies through the Construction Specifications Institute's MasterFormat accounting and management system.

ARC 167 3 3 0 0 0 VOC/TECH
MATERIALS & ASSEMBLIES II

An introduction to building materials and assemblies through the Construction Specifications Institute's MasterFormat accounting and management system.

Prerequisite: ARC 165

ARC 169 3 3 0 0 0 VOC/TECH
MATERIALS & ASSEMBLIES III

An introduction to building materials and assemblies through the Construction Specifications Institute's MasterFormat accounting and management system.

Prerequisite: ARC 167

COURSE DESCRIPTIONS

ARC 180 2 2 0 0 0 VOC/TECH
BUILDING CODES
A look into building codes and their interpretation.

ARC 181 2 2 0 0 0 VOC/TECH
CONSTRUCTION DOCUMENTS TECH
An investigation into the Construction Specification Institute's Construction Documents Technologist certification material and examination.

ARC 190 3 1 4 0 0 VOC/TECH
PRESENTATION GRAPHICS
Exploration into architectural presentation graphics, schematics 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 3 3 0 0 0 CORE
ART APPRECIATION
A general survey course that explores in chronological sequence many artists and 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 3 2 2 0 0 GENERAL
ARTS FOR ELEMENTARY EDUCATION
Designed for students in education and recreation to assist them with design, construction and planning for multi-art forms and materials for instructional situations.

ART 133 3 0 6 0 0 GENERAL
DRAWING
Lab study of the 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 3 0 6 0 0 GENERAL
LIFE DRAWING
Drawing and painting a live model. Emphasis on structure, movement and expression.

ART 143 3 0 6 0 0 GENERAL
PAINTING
Acrylic painting with emphasis on still life, landscape and individual composition.

ART 148 3 0 6 0 0 GENERAL
LANDSCAPE PAINTING
Landscape 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 3 0 6 0 0 GENERAL
CERAMICS
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 3 0 6 0 0 GENERAL
CERAMICS II
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 3 0 6 0 0 GENERAL
TILEMAKING
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 3 2 2 0 0 OPEN
PRINCIPLES OF PHOTOGRAPHY
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 3 2 2 0 0 OPEN
PRINCIPLES OF DIGITAL PHOTOGRAPHY
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 190 3 3 0 0 0 GENERAL
HISTORY OF PHOTOGRAPHY
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 195 3 3 0 0 0 GENERAL
DESIGN: EXPLORING ART MEDIA
An introduction to basic techniques in media such as paper-making, clay, fibers and soft sculptures. Students will explore a variety of traditional approaches to express a contemporary vision.

ART 225 3 2 2 0 0 OPEN
PHOTOSHOP FOR PHOTOGRAPHY
Whether you shoot film or digital, this hands-on course teaches you everything you need to know to scan, process, manipulate and print high-quality photographs digitally from Adobe Photoshop, the industry-standard software for the digital darkroom.

ART 226 3 2 2 0 0 OPEN
ALTERNATIVE PHOTO PROCESSES
For students who have mastered basic photographic principles and process. This class will be a guide that demonstrates a variety of alternative processes, encompassing both traditional and nontraditional techniques. Topics include Litho Printing, EIR Film, HIE Film, Spray Developing, Fotodye, Tone Zone, Sunprinting and Photograms.
Prerequisite: ART 184, ART 186

ART 289 3 2 2 0 0 OPEN
PHOTOJOURNALISM
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 3 2 2 0 0 OPEN
TRAVEL PHOTOGRAPHY
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 3 2 2 0 0 VOC/TECH
STUDIO PHOTOGRAPHY
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 929 2-6 0 0 6-18 0 OPEN
INDIVIDUAL PROJECTS
Students will have the opportunity to 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, Photojournalism, Public Relations, Conventions/Special Events, Education or 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

ASM 150 1 1 0 0 0 OPEN
COMMUNICATION WITH THE ELDERLY
This course will introduce strategies and concepts to improve communication with the elderly population.
Prerequisite: Instructor approval

ASM 155 1 1 0 0 0 OPEN
IMPACT OF DEMOGRAPHICS
This course will address demographic changes in the elderly population and the impact on society.
Prerequisite: Instructor approval

COURSE DESCRIPTIONS

ASM 160 1 1 0 0 0 OPEN
ASPECTS OF AGING
This course will examine the physiological, biological and psychological changes as they relate to the aging process.

Prerequisite: Instructor approval

ASM 165 1 1 0 0 0 OPEN
HEALTHY AGING
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 1 1 0 0 0 OPEN
CULTURAL DIVERSITY
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 1 1 0 0 0 OPEN
DEPRESSION, DEATH & GRIEVING
This course will cover depression, death, loss and the grieving process for both the family and the professional caregiver.

Prerequisite: Instructor approval

ASM 238 3 3 0 0 0 OPEN
FINANCIAL MANAGEMENT IN AS
Emphasis on financial practices in organizations that provide health services to seniors. Review cost and labor hour controls. Excel spreadsheets, evaluation of profit/loss and fiscal reports will be addressed. It is suggested that the student successfully complete ACC 111 or ACC 131 prior to this course.

ASM 239 2 2 0 0 0 OPEN
INFO SYSTEMS IN HEALTHCARE
Emphasis will be placed on the analysis of healthcare information needs and the development of methods to meet these needs. Fundamental components of computers and computer systems will be examined, including specialized information management systems in healthcare.

ASM 256 2 0 0 0 8 OPEN
AGENCY EXPERIENCE
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 261 3 3 0 0 0 OPEN
REGULATION OF NF/SNF
Emphasis is on the changing dynamics of long-term care and the regulatory system. Special attention will focus on 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 262 3 3 0 0 0 OPEN
REGULATION OF SUPPORTED LIVING
This course will provide an overview of Supported Living agencies and an in-depth study of Assisted Living programs in Iowa. The course will focus on these agencies from an operational perspective and will include the following topics: types, development, management, staffing, organization, governance, budgeting and marketing.

ASM 263 2 0 0 0 8 OPEN
PRACTICUM I: QUALITY OF LIFE
During this practical experience, the student will investigate the policies, procedures and techniques used to meet the psychosocial and physical needs of clients in nursing facilities. Special emphasis will be placed on the role and responsibilities of the administrator in assuring client psychosocial and physical needs are met to maximize quality of life and quality of care.

ASM 264 1 0 0 0 4 OPEN
PRACT II: HUMAN RESOURCE
During this practical experience, the student will investigate the policies, procedures and techniques used to meet the administrative and business needs of the nursing care facility. Emphasis will be placed on the area of human resource management.

ASM 265 1 0 0 0 4 OPEN
PRACT III: FINANCE
During this practical experience, the student will analyze and interpret budgets and financial statements. Special emphasis will be placed on the role and responsibilities of the administrator in identifying trends in the financial performance of the facility.

ASM 266 1 0 0 0 4 OPEN
PRACT IV: ENVIRONMENT
During this practical experience, the student will investigate the physical plant needs and the environmental impact on residents. Special emphasis will be placed on the role and responsibilities of the administrator as they relate to quality assurance data and safety outcomes.

ASM 267 1 0 0 0 4 OPEN
PRACT V: LEADERSHIP & MGMT
During this practical experience, students will investigate policies, procedures and techniques used to meet the administrative and business needs of nursing care facilities. Emphasis will be placed on the administrative and leadership styles used to achieve roles and responsibilities to provide quality of life and quality of care for the clients.

ASM 274 3 3 0 0 0 OPEN
LAW & ETHICS IN HEALTHCARE
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 relating to long-term healthcare services.

ASM 278 3 3 0 0 0 OPEN
MANAGEMENT IN SENIOR CARE SERV
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 3 3 0 0 0 OPEN
HEALTHCARE HUMAN RESOURCES
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 2 2 0 0 0 OPEN
HEALTHCARE DELIVERY SYSTEMS
Provides a comprehensive overview of healthcare delivery systems and services. Includes studies in access and financing healthcare services and evaluating the delivery of care.

ASM 282 2 2 0 0 0 OPEN
AGING SERVICES
Aging Services relates the 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 concerns, activities and social services.

ASM 283 2 2 0 0 0 OPEN
AGING POLICIES & GOV PROGRAMS
Class examines aging policies and government programs at the federal and state levels. Various agencies, advocacy groups and funding sources are investigated.

ASM 291 4 2 0 0 8 OPEN
ACTIVITY COORDINATOR
This course is designed to prepare persons to work as activity coordinators in the continuum of care communities, including 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 3 3 0 0 0 OPEN
DEATH AND DYING
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.

COURSE DESCRIPTIONS

ASM 800 1 1 0 0 0 OPEN
SEMINAR I

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 1 1 0 0 0 OPEN
SEMINAR II

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 0 0 18 VOC/TECH
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 coursework. A task list will be issued to each dealer.

Prerequisite: AUT 114, AUT 404, AUT 524, AUT 615

ATC 328 4 3 2 0 0 VOC/TECH
CHRYSLER ELEC SYSTEMS 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 VOC/TECH
TECHNICAL INTERNSHIP II

Work experience at a participating dealership. The tasks will be consistent with the technician's ability and previous coursework.

Prerequisite: AUT 114, AUT 615, AUT 404, AUT 524

ATC 335 5 3 4 0 0 VOC/TECH
SERVICE/REPAIR CHRYSLER ENGINE

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 0 0 VOC/TECH
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 VOC/TECH
TECHNICAL INTERNSHIP III

Work experience at a sponsoring dealership. The tasks will be consistent with the technician's ability and previous coursework.

Prerequisite: ATC 335

ATC 346 5 3 4 0 0 VOC/TECH
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 0 0 VOC/TECH
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 VOC/TECH
TECHNICAL INTERNSHIP IV

Work experience at a participating dealership. Tasks will be consistent with the technician's ability and previous coursework.

Prerequisite: ATC 340

ATC 353 6 3 6 0 0 VOC/TECH
CHRYSLER POWER TRAIN SYSTEMS

This course provides instruction in the operation of Chrysler drive trains, including automatic transmissions, transaxles, manual transmissions, multiwheel drive systems, differentials and their electronic controls. Proper diagnosis, service and repair procedures of these systems are studied and practiced.

Prerequisite: AUT 242

ATC 354 4 2 4 0 0 VOC/TECH
CHRYSLER MANUAL DRIVETRAINS

Provides an understanding of the principles of operation in manual drivetrains, including manual transmissions, transaxles, front and rear differentials, driveshafts and transfer cases. Proper diagnosis, service and repair procedures of these systems are studied and practiced.

Prerequisite: ATC 340

ATC 355 4 2 4 0 0 VOC/TECH
CHRYSLER AUTOMATIC DRIVETRAINS

Provides an understanding of the principles of operation in automatic transmission and transaxles including electronic controls. Proper diagnosis, service and repair procedures of these systems are studied and practiced.

Prerequisite: ATC 317, 346

ATC 356 5 3 4 0 0 VOC/TECH
ADVANCED CHRYSLER SYSTEMS

Instruction in techniques and procedures required to diagnose and service current vehicles. New systems developed by Chrysler will be included.

Prerequisite: AUT 842

ATC 360 2 0 0 0 12 VOC/TECH
TECHNICAL INTERNSHIP V

Work experience at a participating dealership. Tasks will be consistent with the technician's ability and previous coursework.
Prerequisite: ATC 350

ATF 280 4 1 6 0 0 VOC/TECH
FORD STEERING/SUSP/BRAKES

Instruction in the theory of operational service procedures used in the maintenance and repair of Ford Motor Company's base steering, suspension and brakes systems.

Prerequisite: Admission to ASSET program

ATF 290 2 1 2 0 0 VOC/TECH
ADV. FORD STEERING/SUSP/BRAKE

Instruction in the theory and operation of advanced Ford Motor Company steering, suspension and brake systems.

Prerequisite: Admission to Automotive Student Service Education (ASSET) Program, AFT 280 and AFT 328

ATF 312 5 3 4 0 0 VOC/TECH
FORD AUTOMOTIVE ELECTRICAL

A study of the electrical systems used in Ford Motor Company vehicles. The instruction will include fundamentals of electricity, series and parallel circuits, schematics, wire repair, diodes, transistors, microprocessors and digital displays.

Prerequisite: Admission to Automotive Student Service Ed Training

ATF 317 3 2 2 0 0 VOC/TECH
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.

Prerequisite: Admission to Automotive Student Service Ed Training (ASSET)

ATF 320 3 0 0 0 18 VOC/TECH
TECHNICAL INTERNSHIP I

Work experience at a sponsoring dealership. The tasks will be consistent with the technician's ability and previous coursework.

Prerequisite: Admission to Automotive Student Service Ed Training (ASSET)

ATF 326 3 2 2 0 0 VOC/TECH
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 328 or AUT 652

ATF 328 5 3 4 0 0 VOC/TECH
FORD ELECTRONIC SYSTEMS DIAG

Instruction in the operation and diagnosis/repair of electronic components and systems used on current Ford Motor Company vehicles. Required: Admission to Automotive Student Service Ed Training (ASSET).

Prerequisite: ATF 312

COURSE DESCRIPTIONS

ATF 330 3 0 0 0 18 VOC/TECH
TECHNICAL INTERNSHIP II

Work experience at a sponsoring dealership. The tasks will be consistent with the technician's ability and previous coursework.

Prerequisite: Admission to Automotive Student Service Ed Training (ASSET)

ATF 333 4 2 4 0 0 VOC/TECH
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 or AUT 114

ATF 336 3 2 2 0 0 VOC/TECH
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 or AUT 652. Corequisite: ATF 337

ATF 337 4 3 2 0 0 VOC/TECH
FORD DRIVEABILITY & EMISSIONS

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 or AUT 652. Corequisite: ATF 336

ATF 340 3 0 0 0 18 VOC/TECH
TECHNICAL INTERNSHIP III

Work experience at a sponsoring dealership. The tasks will be consistent with the technician's ability and previous coursework.

Prerequisite: Admission to Automotive Student Service Ed Training (ASSET)

ATF 344 2 1 2 0 0 VOC/TECH
FORD DRIVELINE & 4X4 DIAG/RPR

Students will study rear axle and differential design and operation, driveshaft construction, transfer case design and operation. Students will also perform diagnosis and repair operation of each.

Prerequisite: Admission to Automotive Student Service Ed Training (ASSET)

ATF 345 2 1 2 0 0 VOC/TECH
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 0 0 VOC/TECH
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)

ATF 350 3 0 0 0 18 VOC/TECH
TECHNICAL INTERNSHIP IV

Work experience at a sponsoring dealership. The tasks will be consistent with the technician's ability and previous coursework.

Prerequisite: Admission to Automotive Student Service Ed Training (ASSET)

ATF 352 3 1 4 0 0 VOC/TECH
FORD SYSTEMS/TECHNOLOGY UPDATE

Update on emerging and new technologies released by Ford Motor Company and the industry during the course of the ASSET program.

Prerequisite: Admission to Automotive Student Service Ed Training (ASSET) and ATF 340

ATF 362 4 3 2 0 0 VOC/TECH
FORD DIESEL ENGINE TECHNOLOGY

The study of diesel engine construction, operation, diagnosis and repair in Ford vehicles. This will include oil, fuel, intake and exhaust systems.

Prerequisite: Admission to Automotive Student Service Ed Training (ASSET)

ATG 312 4 3 2 0 0 VOC/TECH
GM SPECIALIZED ELECTRONICS TRN

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 320 4 2 4 0 0 VOC/TECH
GM BRAKE SYSTEMS

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 (ASEP)

ATG 322 3 1 4 0 0 VOC/TECH
GM STEERING & SUSPENSION

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 VOC/TECH
GM AUTO AC SYSTEMS

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 (ASEP), ATG 312 and AUT 114

ATG 327 3 2 2 0 0 VOC/TECH
MINOR SVC/REPAIR/GM ENGINES

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, AUT 114

ATG 328 3 2 2 0 0 VOC/TECH
DIAGNOSIS/REPAIR-GM ELECT SYS

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, AUT 114

ATG 329 3 0 0 0 18 VOC/TECH
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 coursework. A task list will be issued to each dealer.

Prerequisite: Admission to Automotive Service Educational Program, MAT 772, ATG 312, AUT 114, ATG 320, and ATG 322

ATG 330 3 0 0 0 18 VOC/TECH
TECHNICAL INTERNSHIP II

Work experience at a participating dealership. The tasks will be consistent with the technician's ability and previous coursework.

Prerequisite: ATG 329, 328

ATG 333 3 2 2 0 0 VOC/TECH
MAJOR SERVICE PROC/GM ENGINES

Evaluating, reconditioning and replacing of major components of GM engines. Instruction will also include diagnostic routines.

Prerequisite: ATG 327

ATG 336 3 2 2 0 0 VOC/TECH
GM 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: Admission to Automotive Service Educational Program and ATG 328

ATG 337 4 3 2 0 0 VOC/TECH
GM TUNE-UP PROC & EMSSN CNTRL

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 0 18 VOC/TECH
TECHNICAL INTERNSHIP III

Work experience at a sponsoring dealership. Tasks will be consistent with the technician's ability and previous coursework.

Prerequisite: ATG 330, 344, 345

COURSE DESCRIPTIONS

ATG 344 4 2 4 0 0 VOC/TECH
GM MANUAL DRIVETRAINS

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 VOC/TECH
GM AUTOMATIC DRIVETRAINS

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 0 18 VOC/TECH
TECHNICAL INTERNSHIP IV

Work experience at a participating dealership. Tasks will be consistent with the technician's ability and previous coursework.

Prerequisite: ATG 340

ATG 354 5 3 4 0 0 VOC/TECH
ADVANCED GM MOTORS SYSTEMS

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 VOC/TECH
SHOP FUND & MINOR SERVICE

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 VOC/TECH
WELDING FOR AUTOMOTIVE MECHANI

Skills will be developed in oxy-acetylene fusion and braze welding, shielded metallic 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.).

AUT 163 3 2 2 0 0 VOC/TECH
AUTOMOTIVE ENGINE REPAIR

Course will provide instruction in the theory and operation of 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 VOC/TECH
ADV AUTOMOTIVE ENGINE REPAIR

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 VOC/TECH
BASIC AUTOMOTIVE POWERTRAIN

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 VOC/TECH
ADV AUTOMOTIVE POWERTRAIN

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 VOC/TECH
BASIC SUSPENSION & STEERING

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 VOC/TECH
AUTO BRAKE SYSTEMS & SERVICE

Instruction in the theory of operation and service procedures of automotive brakes.

AUT 535 5 2 6 0 0 VOC/TECH
ADV AUTO BRAKES & ALIGNMENT

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 VOC/TECH
AUTO ELECTRICITY/ELECTRONICS

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 VOC/TECH
ADV AUTOMOTIVE ELECTRICITY

Provides instruction in the diagnosis, repair and service of electrical and electronic components found on current vehicles.

Prerequisite: AUT 615

AUT 704 4 2 4 0 0 VOC/TECH
AUTO HEATING & AC

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 VOC/TECH
ADVANCED AUTOMOTIVE TUNE-UP

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 842

AUT 834 4 2 4 0 0 VOC/TECH
AUTOMOTIVE FUEL SYSTEMS

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.

AUT 842 4 2 4 0 0 VOC/TECH
AUTO COMPUTERIZED ENG CONTROLS

This course builds upon the knowledge and skills learned in previous automotive courses to prepare the student to service On-Board Diagnosis 2 computer-controlled vehicles. The theory and operating principles of automotive computers, sensors and control devices will be emphasized. Lab instruction on late model cars will be included.

Prerequisite: AUT 834, AUT 652

AUT 845 2 1 2 0 0 VOC/TECH
ELECTRICAL SYSTEMS DIAGNOSIS

Instruction in techniques and procedures required to diagnose and service microprocessor-controlled body electrical systems.

Prerequisite: AUT 615, AUT 652

AUT 870 2 1 2 0 0 VOC/TECH
AUTOMOTIVE SERVICE MANAGEMENT

Provides instruction in customer relations, service sales, shop management and business practices in the automotive shop.

AVI 130 3 3 0 0 0 VOC/TECH
PRIVATE PILOT GROUND SCHOOL

Provide aeronautical knowledge to meet the

Prerequisite in FAR Part 61 for the FAA Private Pilot Exam.

AVI 172 2 1 2 0 0 VOC/TECH
PRIVATE PILOT FLIGHT TRAINING

This course provides supervised dual and solo flight instruction that meets the required hours to qualify as a candidate for a FAA Private Pilot check-ride. Areas covered in flight training include preflight operations, flight maneuvering by reference to ground objects, flight at critically slow air speeds and recovery from stalls, takeoffs and landings, control and maneuvering an aircraft, cross country flying and emergency operations.

Prerequisite: Third-class physical, completion of or concurrent registrtion in AVI 130

AVI 213 3 3 0 0 0 VOC/TECH
INSTRUMENT FLIGHT THEORY

To provide the student with the necessary aeronautical knowledge to meet the

Prerequisites specified in FAR Part 61 for the FAA instrument pilot written examination.

COURSE DESCRIPTIONS

AVM 100 1 0 2 0 0 VOC/TECH
CLEANING/CORROSION CONTROL
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 2 1 2 0 0 VOC/TECH
AIRCRAFT-MATERIALS/PROCESSES
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 104 2 1 2 0 0 VOC/TECH
REGULATIONS AND PUBLICATIONS
Aircraft maintenance forms and records will be units of instruction. Additional units will include manual utilization, FAA regulations, airworthiness directives, and mechanic privileges and limitations.

AVM 107 1 0 2 0 0 VOC/TECH
WEIGHT AND BALANCE
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 1 0 2 0 0 VOC/TECH
GROUND OPERATIONS & SERVICING
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 VOC/TECH
AIRCRAFT ELECTRICAL SYSTEMS
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 1 1 0 0 0 VOC/TECH
WEATHER AND WARNING SYSTEMS
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 3 1 4 0 0 VOC/TECH
AIRCRAFT ASSEMBLY/RIGGING
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 5 3 4 0 0 VOC/TECH
AIRFRAME STRUCTURE AND REPAIR
A course for students in aviation that covers materials associated with the structure of the aircraft. Utilization of proper materials, repair, replacement, testing, and the finishing of metal and non-metal materials will be included in this course.

AVM 129 2 1 2 0 0 VOC/TECH
LANDING GEAR & BRAKE SYSTEMS
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 2 1 2 0 0 VOC/TECH
AIRFRAME/POWERPLANT INSPECTION
The course covers inspections related to aircraft engines and airframes. Airframe and engine conformity and airworthiness inspections will be units of instruction.

AVM 133 3 1 4 0 0 VOC/TECH
HYDRAULIC/PNEUMATIC POWER SYS
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 identification, installation, repair, inspection, troubleshooting and replacement of the systems.

AVM 139 1 0 2 0 0 VOC/TECH
INSTRUMENTS/FIRE PROTECTION-PP
The course will cover aircraft instrument systems, engine fire protection systems, and smoke and carbon monoxide detection systems.

AVM 141 1 0 2 0 0 VOC/TECH
CONTROL SYSTEMS
The course covers heating, cooling, pressurization, air cycling and oxygen systems.

AVM 145 1 0 2 0 0 VOC/TECH
AIRCRAFT WELDING
The course covers the 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 165 2 1 2 0 0 VOC/TECH
COMMUNICATION AND NAVIGATION
Basic units will involve study of autopilot systems, servo systems, approach coupling systems, navigation systems, electronic communication systems, antenna systems, static pressure systems, flight instrument systems and all position-indicating systems.

AVM 168 1 1 0 0 0 VOC/TECH
FLUID LINES AND FITTINGS
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 2 1 2 0 0 VOC/TECH
AIRCRAFT DRAWINGS
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 111 3 3 0 0 0 VOC/TECH
EMERGING TECHNOLOGIES
Students will explore changing trends in peripheral equipment and software, review technology within the framework of today's business environment and analyze the future of hardware and software usage in various business fields.

BCA 113 3 2 2 0 0 VOC/TECH
COMPUTER NETWORK LITERACY
This course is an introduction to basic concepts and terminology in computer networks and data communications. Topics include data communications equipment, media network basics and the Internet. Student will develop a personal web page.
Prerequisite: CSC 110

BCA 122 1 0 2 0 0 VOC/TECH
BASIC WORD PROCESSING
Hands-on instruction using Word in the Windows environment. Special features include working with Windows, speller, thesaurus, merge, sort, tables, tabs and columns.

BCA 133 4 2 4 0 0 VOC/TECH
WORD PROCESSING SKILL DEV. I
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.
Prerequisite: Must key at least 25 NWPM for five minutes

BCA 137 3 2 2 0 0 VOC/TECH
WORD PROCESSING SKILL DEV. II
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 with a grade of "C-" or better

BCA 146 1 0 2 0 0 VOC/TECH
BASIC SPREADSHEETS
Orientation to Excel using a Windows environment. Topics include spreadsheet layout and terminology, formulas, database features, charting, enhancing a worksheet and chart. Designed for beginning users of Excel.

COURSE DESCRIPTIONS

BCA 164 1 0 2 0 0 VOC/TECH
BASIC DATABASES

Introduction to relational database management software using Access in a Windows environment. Topics include creating, editing, querying, using forms, reports, customizing and managing data and files.

BCA 174 1 0 2 0 0 VOC/TECH
BASIC PRESENTATION SOFTWARE

Introduction to presentation software using PowerPoint in a Windows environment. 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 3 2 2 0 0 VOC/TECH
INTRO COMPUTER BUSINESS APPL

Use computer hardware and software, in a Windows environment, as business productivity tools. Training includes a hands-on introduction to the computer applications vital in today's business and industry. Course covers operating system, email, internet, word processing, spreadsheet, database and presentation applications.

BCA 213 3 2 2 0 0 VOC/TECH
INTERMED COMPUTER BUSINESS APP

Develop a proficiency in decision-making using computer software applications. Emphasizes the production of final documents for real business applications such as mail merge, desktop publishing, linked spreadsheets, sorting, filtering, customized database forms and reports and enhancement of presentations.

Prerequisite: BCA 212 with a grade of "C-" or better OR CSC 110 with a grade of "C-" or better.

BCA 214 3 2 2 0 0 VOC/TECH
ADV COMPUTER BUSINESS APPL

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 with a "C-" or better

BCA 250 3 2 2 0 0 VOC/TECH
DESKTOP PUBLISHING

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 with a "C-" or better or CSC 110 with a "C-" or better

BIO 100 1 1 0 0 0 GENERAL
OPPORTUNITIES IN BIOLOGY

An exploration of careers and advanced educational opportunities in the biological sciences at the local, state and national levels.

BIO 104 3 2 2 0 0 CORE
INTRODUCTORY BIOLOGY W/LAB

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 4 3 2 0 0 CORE
GENERAL BIOLOGY I

First semester of Biology for majors. Topics covered include chemistry of life, cells, bioenergetics, genetics, evolution, viruses, prokaryotes and protists.

Prerequisite: H.S. Biology & H.S. Chemistry or equivalent

BIO 113 4 3 2 0 0 CORE
GENERAL BIOLOGY II

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 135 4 3 2 0 0 CORE
INTRODUCTION TO BOTANY

This course is an introduction to the biology of plants. The course acquaints students with plant classification, morphology, anatomy, physiology, diversity and evolutionary and ecological relationships. Includes laboratory and field exercises. High School Biology and/or High School Chemistry recommended.

BIO 138 3 2 2 0 0 CORE
FIELD ECOLOGY

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 3 3 0 0 0 GENERAL
ECOLOGY OF IOWA

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 3 3 0 0 0 OPEN
GENETICS

An introductory genetics course for Biology and Biotechnology majors. Topics covered include DNA and chromosome structure and function; Mendelian genetics; molecular genetics in eucaryotes, prokaryotes and viruses; recombinant DNA technology; gene expression and the genetic basis of immunology.

Prerequisite: BIO 112 or BIO 186

BIO 156 3 2 2 0 0 CORE
HUMAN BIOLOGY W/LAB

A study of biology which emphasizes the human body. Topics such as basic chemistry, the cell and human organ systems are included. Labs will reinforce course content. Designed for the non-science and inadequately prepared health science major.

BIO 164 5 3 4 0 0 CORE
ESSENTIALS ANATOMY/PHYSIOLOGY

A classic integration of human anatomy and physiology at the cellular level and organ/system level. Includes cat dissection.

Prerequisite: H.S. Biology and H.S. Chemistry or equivalent.

BIO 168 4 3 2 0 0 CORE
ANATOMY & PHYSIOLOGY I

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.

BIO 173 4 3 2 0 0 CORE
ANATOMY & PHYSIOLOGY II

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 include 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 186 4 3 3 0 0 CORE
MICROBIOLOGY

A general microbiology course with laboratory designed for the science major. Emphasis is placed on morphology, physiology, microbial genetics, virology and basic immunology and applications.

Prerequisite: one semester of any college-level biology.

BIO 191 3 2 2 0 0 GENERAL
INTRO TO BIOTECHNOLOGY W/LAB

An introductory course with lab focusing on the fields of biotechnology, GMO production and use, stem cell research, bioethics, cancer and basic microbiology. Topics will include an introduction to employment opportunities in the field of biotechnology, basic biology and biochemistry, lab math skills and an introduction to equipment used in biotechnology including PCR and bioinformatics.

COURSE DESCRIPTIONS

BIO 225 4 3 2 0 0 GENERAL
MARINE BIOLOGY I

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 GENERAL
MARINE BIOLOGY II

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 OPEN
TOPICS IN BIOTECHNOLOGY

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 12 OPEN
BIOTECHNOLOGY INTERNSHIP

This internship is the final requirement for the completion of the Biotechnology AS 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 OPEN
CELL & MOLEC BIO-NUCLEIC ACIDS

This course is designed to provide training in techniques related to nucleic acids and is a requirement 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 component of the course will include lab safety, 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.

Prerequisite: BIO 112 and BIO 186; Pre- or Corequisite: BIO 186

BIO 251 5 2 6 0 0 OPEN
CELL & MOLECULAR BIO-PROTEINS

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 the purification, characterization, handling and storage of proteins, enzyme mechanisms and kinectics, immunoassays and two-dimensional gel electrophoresis.

Prerequisites: BIO 112, CHM 132 or CHM 175, MAT 157 Pre- or Corequisite: BIO 112

BIO 260 3 3 0 0 0 GENERAL
BIOLOGY OF AGING

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
GENERAL ECOLOGY AND LAB

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 115 and ENV 116 or BIO 138; or with instructor's permission.

BIO 732 4 3 2 0 0 OPEN
HEALTH SCIENCE MICROBIOLOGY

Basic concepts and applications of medical microbiology. Topics include morphology and physiology of microorganisms, pathology, epidemiology and immunology. Designed for the health science 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 OPEN
HEALTH SCIENCE ANATOMY

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 cat dissection.

Prerequisite: H.S. Biology & Chemistry or equivalent

BIO 734 3 2 2 0 0 OPEN
HEALTH SCIENCE PHYSIOLOGY

Detailed explanation of human physiology including the nervous, cardiovascular, respiratory, digestive, urinary, lymphatic, skeletal, muscular and reproductive systems.

Prerequisite: BIO 733, 164 or equivalent

BIO 922 1-4 0 0 3-12 0 OPEN
FIELD STUDIES

This course is designed to give the student an opportunity to study science outside the typical classroom setting. Students will investigate an area of the biological sciences through research and other activities in a supervised environment that meets the requirements of the investigation. This course is repeatable up to 4 credits.

Prerequisite: Permission of the instructor

BMA 165 1 1 0 0 0 VOC/TECH
BOILER ROOM MAINTENANCE

Boiler accessories, fittings, controls, water treatment and fundamentals for beginners.

BMA 167 2 2 0 0 0 VOC/TECH
STEAM PLANT OPERATIONS

High-pressure steam boilers, operation, controls, burning equipment instruments.

Prerequisite: BMA 165

BMA 175 2 2 0 0 0 VOC/TECH
BASIC PLUMBING

Plumbing, plumbing components, plumbing codes, and reading blueprints.

BMA 177 3 2 2 0 0 VOC/TECH
INDUS. PLUMBING & PIPEFITTING

A course in fundamental plumbing and pipefitting. 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 VOC/TECH
INTRO TO BIOMASS PROCESS 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 VOC/TECH
BIOMASS EQUIPMENT AND SYSTEMS

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.

COURSE DESCRIPTIONS

BPT 112 3 2 2 0 0 VOC/TECH
BIOMASS TECH HEALTH/SAFETY

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 VOC/TECH
PIPING & INSTRUMENT DIAGRAMS

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.

BPT 128 3 2 2 0 0 VOC/TECH
OPERATOR BIOMASS LAB PROCESS

Biomass Laboratory Process and Techniques is designed to cover the different laboratory testing processes, sampling techniques and quality control requirements required for both the internal lab technician as well as the process plant operator.

BUS 102 3 3 0 0 0 GENERAL
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 112 3 3 0 0 0 OPEN
BUSINESS MATH

Mathematical computations are reviewed and strengthened with emphasis on facility and accuracy. Includes topics in the mathematics of buying and selling, banking, payroll, markups and markdowns, discounts, interest, consumer math and other related business applications.

BUS 131 3 3 0 0 0 VOC/TECH
SMALL BUSINESS MGMT STRATEGIES

Emphasizes human resource concepts and their applications to small business operations. Leadership development, management styles and decision-making strategies are stressed.

BUS 138 3 3 0 0 0 VOC/TECH
SMALL BUSINESS MARKETING

Discussions and focus are on marketing applications. Workshops and strategies such as market research, product development, pricing, distribution, promotion, marketing campaigns and budgets.

BUS 141 3 3 0 0 0 VOC/TECH
SMALL BUSINESS START-UP

This course includes information, examples, forms and activities needed for a business start-up and for development of a successful business operation. Topics include market research and assessment, naming your business, finding a location, determining asset needs and forecasting sales, identifying job tasks and determining human resource needs, and writing a business plan.

BUS 148 3 3 0 0 0 OPEN
SMALL BUSINESS MANAGEMENT

Examines the introductory business applications and strategies needed to start and operate a small business. Topics include entrepreneurship preparation, idea feasibility, business plan content, introductory marketing, management and finance concepts for small business.

BUS 150 3 3 0 0 0 VOC/TECH
E-COMMERCE ON THE WEB

This course will introduce the student to the basic elements of electronic commerce. It will focus on the business and technical issues faced by a company that enters the e-commerce marketplace. Topics include products, advertising, resource requirements, third party options, technical and operational issues.

BUS 181 2 2 0 0 0 VOC/TECH
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 185 3 3 0 0 0 GENERAL
BUSINESS LAW I

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 186 3 3 0 0 0 GENERAL
BUSINESS LAW II

Provides for overview of negotiable instruments, debtor/creditor law (collecting judgments), secured transactions, agency relationships, and selecting the right business formation.

Prerequisite: BUS 185

BUS 211 4 4 0 0 0 CORE
BUSINESS STATISTICS

Tabular and graphical presentation, measures of central tendency and variability, standard elementary procedures involving the binomial, normal, student's T's, chi-squares and F distributions, correlation, regression, analysis of variance, and several nonparametric procedures. Same content as MAT 157. Credit will not be granted for both BUS 211 and MAT 157.

Prerequisite: 2 years of H.S. Algebra or MAT 073 or department permission

BUS 213 2 2 0 0 0 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, correction analysis, data analysis, time series analysis, hypotheses testing, and computer analysis. Same content as MAT 160; credit will not be granted for both.

Prerequisite: BUS 211 or MAT 157

BUS 215 1 1 0 0 0 OPEN
INVESTING IN REAL ASSETS

This course analyzes procedures in residential real estate purchases. An evaluation of residential home, mobile home and condominium purchasing versus renting is discussed. Additional topics include investments in REITS, commercial property, undeveloped land, limited partnership, collectibles and gold.

BUS 216 1 1 0 0 0 OPEN
ESTATE PLANNING

The goal of this course is to establish a desirable and efficient dissolution of one's assets and liabilities at death. Course includes identifying goals for estate planning, both pre-death and postmortem. Estate tax and gift tax issues are examined.

BUS 218 1 1 0 0 0 OPEN
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 3 3 0 0 0 OPEN
INTRO INTERNATIONAL BUSINESS

The International Business course is designed to help students 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 231 4 4 0 0 0 GENERAL
QUANTITATIVE METHODS/BUS DECNS

An introduction to management research methods used in business. Topics include probability, break-even analysis, inventory control, statistics and transportation models.

Prerequisite: MAT 073 or intermediate Algebra or 2 years of high school Algebra or department permission

BUS 240 3 1 4 0 0 OPEN
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 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.

COURSE DESCRIPTIONS

BUS 250 3 3 0 0 0 OPEN
PRINCIPLES OF REAL ESTATE

Fundamental principles, economics, law, working concepts and terminology. Focuses on real estate law and assists those preparing for the apprentice salesperson examination.

BUS 260 3 3 0 0 0 OPEN
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 3 3 0 0 0 OPEN
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 902 1 1 0 0 0 VOC/TECH
CAREER SEMINAR

Weekly examination of topics relevant to the business internship experience, sharing workplace problems encountered and the solutions to address those problems. This course also covers aspects of the job search process and preparing for the employment interview. (P/F)

Prerequisite: Instructor Permission. Corequisite: BUS 932

BUS 904 1 0 2 0 0 VOC/TECH
LEGAL STUDY TOUR

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 and current legal policies and procedures.

Prerequisite or Corequisite: BUS 185 or POL 111 or CRJ 132 or instructor permission

BUS 932 2 0 0 0 8 VOC/TECH
INTERNSHIP

Practical experience through on-the-job training in a business setting approved by the DMACC Business Department. Tasks will be consistent with student's career objectives, skills and knowledge. (P/F)

Prerequisite: Instructor Permission. Corequisite: BUS 902

CAD 119 3 2 2 0 0 VOC/TECH
INTRO COMPUTER-AIDED DRAFTING

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 CADD 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 VOC/TECH
INTERMEDIATE CADD—MECHANICAL

This course will introduce the student 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 VOC/TECH
INTERMED CADD—ARCHITECTURAL

This course will apply architectural drafting practices to the CADD 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 139 3 2 2 0 0 VOC/TECH
INTRO TO CAD/CAM

The objectives of this course will be to apply computer-aided design software and computer-aided manufacturing software for numerically controlled (CNC) machine tools.

CAD 148 3 2 2 0 0 VOC/TECH
INTRO TO FINITE ELEMENT ANALYS

This course will introduce CAD students to the analysis of simple structures. Analysis will be examined then verified using computer analysis software in conjunction with CAD. Basic engineering statics will be taught.

Prerequisite: CAD 152, 153, 246, MAT 773

CAD 151 6 4 4 0 0 VOC/TECH
CAD GRAPHICS I

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 VOC/TECH
CAD GRAPHICS II

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 VOC/TECH
CAD APPLICATIONS I

Mechanical components and processes 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 VOC/TECH
CAD APPLICATIONS II

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 VOC/TECH
NETWORKING SYS INVOLVING CAD

Network system key features and functionality will be covered. System file management will be addressed. Operating systems and hardware will be examined. Relationships between computer hardware and software will be taught.

CAD 162 3 2 2 0 0 VOC/TECH
INTRO TO MULTIMEDIA

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 VOC/TECH
SOLIDWORKS CAD I

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 184 3 2 2 0 0 VOC/TECH
SOLIDWORKS FOR DIE DESIGN

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 progressive dies will be examined. Part drawings will be created and plotted.

Corequisite: MFG 402, MFG 403

CAD 196 3 2 2 0 0 VOC/TECH
ENGINEERING DISCIPLINES & PRAC

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 3 2 2 0 0 VOC/TECH
MECHANICAL SYSTEMS

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

COURSE DESCRIPTIONS

CAD 220 3 2 2 0 0 VOC/TECH
MICROSTATION CAD

This course will introduce the student to MicroStation CAD software. Basic two-dimensional CAD drawings will be taught. Drawings will be created and plotted.

Prerequisite: CAD 151 or equivalent

CAD 240 3 2 2 0 0 VOC/TECH
APPLIED MATERIALS & PROCESSES

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 VOC/TECH
MANUFACTURING INTERFACES

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 VOC/TECH
PARAMETRIC CAD I

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, 240, MAT 773

CAD 248 3 2 2 0 0 VOC/TECH
PARAMETRIC CAD II

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 VOC/TECH
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. Students will conform to industry standards for their design project.

Prerequisite: CAD 152, 196, 240, MAT 773

CAD 254 5 2 6 0 0 VOC/TECH
DESIGN PROJECT II

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. Students will conform to industry standards for their design project.

Prerequisite: CAD 153, 215, 252

CAT 430 4 2 4 0 0 VOC/TECH
CATERPILLAR FUEL SYSTEMS

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, 606, 145

CAT 431 2 1 2 0 0 VOC/TECH
CATERPILLAR FAILURE ANALYSIS

The student will determine the root cause of failure, how to properly prepare the parts for inspection and learn to determine what is normal and abnormal wear. Experienced individuals may contact the instructor to gain admittance to this course.

Prerequisite: DSL 366, 546, 606

CAT 432 2 1 2 0 0 VOC/TECH
CATERPILLAR LS/PC HYDRAULICS

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 606, 145

CAT 433 2 2 0 0 0 VOC/TECH
CATERPILLAR SERV INFO SYSTEM

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 0 16 VOC/TECH
CATERPILLAR INTERNSHIP

Work experience at a local Caterpillar dealership. The work experience will be compatible with the student's ability and previous coursework.

Prerequisite: DSL 366, 546, 606, 145

CAT 435 2 0 4 0 0 VOC/TECH
CATERPILLAR MULTI-MEDIA

The student will complete Caterpillar computerized tests and review modules.

Prerequisite: DSL 366, 546, 606, 145

CET 102 3 3 0 0 0 VOC/TECH
FUND OF CIVIL ENGINEERING

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 VOC/TECH
SURVEY I

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.

Prerequisite OR Corequisite: MAT 773

CET 135 3 3 0 0 0 VOC/TECH
MATERIALS I

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 138 3 3 0 0 0 VOC/TECH
CONSTRUCTION I

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 VOC/TECH
SURVEY II

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 VOC/TECH
HIGHWAY DESIGN I

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 VOC/TECH
AUTOMATED DESIGN I

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 110 or department approval

COURSE DESCRIPTIONS

CET 192 4 4 0 0 0 VOC/TECH
STATICS

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 773 or instructor approval

CET 219 4 3 2 0 0 VOC/TECH
SURVEY III

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 VOC/TECH
SOILS AND FOUNDATIONS

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 773 or instructor approval

CET 235 3 3 0 0 0 VOC/TECH
CONSTRUCTION II

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 VOC/TECH
MATERIALS II

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 135 or department approval

CET 278 4 4 0 0 0 VOC/TECH
AUTOMATED DESIGN II

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, the 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 VOC/TECH
HIGHWAY DESIGN II

This course will introduce the student to additional highway design topics. Topics will include hydrology and drainage design, intersection and interchange design, roadside design, jointing, pavement design, parking design, highway capacity and traffic engineering.

Prerequisite: CET 173 or department approval

CET 291 3 3 0 0 0 VOC/TECH
STRUCTURE DESIGN & CONST

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 304 4 0 0 0 16 VOC/TECH
FIELD COOP

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 program courses and/or department approval

CET 305 5 0 0 0 20 VOC/TECH
FIELD COOP

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. Same content as SRV 305. Credit will not be granted for both CET 305 and SRV 305

CET 307 2 2 0 0 0 VOC/TECH
FIELD ORIENTATION

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 CORE
SURVEY OF CHEMISTRY

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 122 4 3 2 0 0 CORE
INTRO TO GENERAL CHEMISTRY

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 CORE
INTRO TO ORGANIC/BIOCHEMISTRY

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

CHM 165 4 3 3 0 0 CORE
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 4 3 3 0 0 CORE
GENERAL/INORG CHEMISTRY II

A continuation of General and Inorganic Chemistry I. Prerequisite: CHM 165 or Equivalent

CHM 263 5 3 4 0 0 CORE
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 132 or 175 or 1 year college-level general chemistry

CHM 273 5 3 4 0 0 CORE
ORGANIC CHEMISTRY II

A continuation of Organic Chemistry I.

Prerequisite: CHM 263 or Equivalent

CIS 125 3 3 0 0 0 OPEN
INTRO TO PROGRAMMING LOGIC W/L

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.

COURSE DESCRIPTIONS

CIS 130 3 3 0 0 0 VOC/TECH
COMPUTER PROGRAMMING

Basic programming techniques such as writing algorithms, drawing of flow charts and developing programs that include loops and subroutines.

CIS 140 3 2 2 0 0 VOC/TECH
INTRO TO GAME DESIGN

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 3 3 0 0 0 OPEN
DATA STRUCTURES

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 3 3 0 0 0 OPEN
COMPUTATIONAL STRUCTURES

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 3 3 0 0 0 VOC/TECH
C++

Students will examine the structure of typical C++ programs, explore the concepts of object-oriented programming and design business applications in C++.

Prerequisite: CIS 125 or equivalent

CIS 164 3 3 0 0 0 VOC/TECH
ADVANCED C++

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 3 3 0 0 0 VOC/TECH
C#

This course is an introduction to the C# language. Object-oriented programs will be developed by students.

Prerequisite: CIS 125

CIS 171 3 3 0 0 0 VOC/TECH
JAVA

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 125

CIS 174 3 3 0 0 0 VOC/TECH
ADVANCED C# PROGRAMMING

Students learn ASP.NET development with C# and relational database management systems. Build dynamic websites, Web applications and XML web services. The course includes advanced topics such as state preservation techniques and object-oriented programming. After completing the course, students will be able to use C# and ASP.NET to build professional-quality database- driven websites.

Prerequisite: CIS 169

CIS 178 2 2 0 0 0 VOC/TECH
JAVA PROGRAMMING I

Learn Java programming techniques related to information technology and network administration.

Prerequisite: NET 223, 623, 628

CIS 179 2 2 0 0 0 VOC/TECH
JAVA PROGRAMMING II

Learn advanced Java programming techniques related to information technology and network administration.

Prerequisite: CIS 178

CIS 182 3 3 0 0 0 VOC/TECH
JSP AND SERVLETS

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, CIS 207

CIS 204 3 3 0 0 0 VOC/TECH
INTRO TO WEBSITE DEVELOPMENT

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: CSC 110

CIS 207 3 2 2 0 0 VOC/TECH
FUND OF WEB PROGRAMMING

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: CSC 110 or BCA 212

CIS 210 3 3 0 0 0 VOC/TECH
WEB DEVELOPMENT I

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 3 3 0 0 0 VOC/TECH
WEB DEVELOPMENT II

This course is designed to teach students how to create a website 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 SSI, ASP, JSP, C, Perl and PHP. After completing this course students will be able to install a Web Server and a Relational Database, and to create dynamic web content for e-commerce.

Prerequisite: CIS 210

CIS 215 3 3 0 0 0 VOC/TECH
SERVER-SIDE WEB PROGRAMMING

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 3 3 0 0 0 VOC/TECH
E-COMMERCE WEBSITE II

Introduces Dynamic HTML, cascading style sheets, and XML, work with advanced features of FrontPage and another website development tool.

Prerequisite: CIS 207

CIS 247 3 3 0 0 0 VOC/TECH
INTRO TO XML

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 3 3 0 0 0 VOC/TECH
INTRODUCTION TO DATA BASE

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

COURSE DESCRIPTIONS

CIS 332 3 2 2 0 0 VOC/TECH
DATA BASE AND SQL

This course 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 3 2 2 0 0 VOC/TECH
SQL/ORACLE

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

CIS 346 3 3 0 0 0 VOC/TECH
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 ISAM file access techniques.

Prerequisite: CIS 402

CIS 421 4 3 2 0 0 VOC/TECH
COBOL—INTERMEDIATE

COBOL VSE structured programming involving sequential disk, table processing and file update processing, using IBM ICCF text editor, VSE/ESA JCL on an IBM ES/900 Mainframe.

Prerequisite: CIS 402

CIS 431 3 2 2 0 0 VOC/TECH
COBOL—ADVANCED

ANS COBOL involving advanced editing programs, table processing, VSAM file process, programs linkage and report writer.

Prerequisite: CIS 593, 421

CIS 435 3 3 0 0 0 VOC/TECH
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 VOC/TECH
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 VOC/TECH
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 VOC/TECH
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 VOC/TECH
ASSEMBLER

An introductory course in the syntax rules of Assembler language programming. Business problems are analyzed and programmed.

Prerequisite: CIS 402. Corequisite: CIS 593

CIS 588 3 3 0 0 0 VOC/TECH
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 VOC/TECH
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 VOC/TECH
VISUAL BASIC

An elementary course in the use of the Visual Basic. NET programming languge. The various commands will be presented. Students design, code and test several programs.

Prerequisite: CIS 125 or equivalent

CIS 612 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 VOC/TECH
HELP DESK OPERATIONS

The purpose of this course is to provide students with a comprehensive understanding of the help desk environment and the knowledge, skills and abilities needed to work in the user support industry. Students will learn valuable problem-solving and communication skills. 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: CSC 110

COM 703 3 3 0 0 0 VOC/TECH
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 VOC/TECH
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 15 0 0 VOC/TECH
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 VOC/TECH
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 VOC/TECH
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 VOC/TECH
MATERIALS TAKEOFF

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 VOC/TECH
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

COURSE DESCRIPTIONS

CON 342 3 0 7 0 0 VOC/TECH
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 VOC/TECH
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 10 0 0 VOC/TECH
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 10 0 0 VOC/TECH
CONSTR 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 10 0 0 VOC/TECH
CONSTR PROC & APPLICATIONS III

This course includes concrete flatwork, insulation, drywall application, cabinet work and interior trim. (5-week session)

Prerequisite: CON 481

CON 949 1 1 0 0 0 VOC/TECH
SPECIAL TOPIC: GREEN BLDG CONCEPTS

In this special topics course, students will examine green building concepts, concerns and material characteristics as well as selection. Students will also be introduced to current Leadership in Energy and Environmental Design (LEED) Building certification standards and processes. Theory will be provided that will help the students understand the reasoning behind green concepts and practices. Students will learn basic concepts of a cost benefit analysis when selecting environmentally friendly or energy-saving housing systems.

CRJ 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.

CRJ 107 3 2 2 0 0 OPEN
SURVEY CRIM JUSTICE AGENCIES

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

CRJ 109 3 3 0 0 0 OPEN
THEORIES OF INTERVIEWING

The course focuses on the successful use of both interviews and interrogations for criminal justice professionals. The student will learn a "Reid" based system and will assist the student, not only in the criminal justice field, but any other profession requiring human interaction.

CRJ 111 3 3 0 0 0 OPEN
POLICE AND SOCIETY

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.

CRJ 128 3 3 0 0 0 OPEN
VICTIMOLOGY

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, along with 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.

CRJ 130 3 3 0 0 0 GENERAL
CRIMINAL LAW

An examination of the elements of offenses and the procedural safeguards in the criminal process.

CRJ 132 3 3 0 0 0 GENERAL
CONSTITUTIONAL LAW

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.

CRJ 137 3 3 0 0 0 GENERAL
JUVENILE LAW

The social and legal aspects of juvenile delinquency, plus theories on procedures, legislation, juvenile court and prevention programs.

CRJ 141 3 3 0 0 0 OPEN
CRIMINAL INVESTIGATION

Rudiments of criminal investigation: techniques, principles, problems, sources of information and evidentiary processes.

CRJ 167 3 2 2 0 0 OPEN
OPERATING SYSTEMS FOR FORENSICS

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.

Prerequisite: CSC 110 or instructor approval

CRJ 176 3 2 2 0 0 OPEN
COMPUTER FORENSICS I

This course serves as a technical introduction to the search, seizure 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: CSC 110 or instructor approval

CRJ 178 3 3 0 0 0 OPEN
E-CRIME INVESTIGATIVE METHODS

This course identifies electronic crime, instructs the student on current laws, and teaches the investigative methods used in law enforcement today to gather evidence to prosecute and testify regarding these criminal acts.

CRJ 179 1 1 0 0 0 OPEN
WHITE COLLAR CRIME

This course provides basic understanding of white-collar crime and some of its ramifications. Special attention will be paid to the study of white collar crimes pertaining to corporate crime, occupational crime, governmental and political crime, enterprise/organized crime, prevention/control mechanisms and societal responses to these crimes.

CRJ 195 4 0 8 0 0 OPEN
CRIME SCENE INVESTIGATION

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

CRJ 222 3 3 0 0 0 OPEN
CORRECTIONAL TREATMENT METHODS

Institutional options for preventing recidivism. Introduction to therapeutic techniques. Comparison of punishment, Freudian treatments and behavior modification systems. Student presentation required.

CRJ 229 3 3 0 0 0 OPEN
PENOLOGY

The social organization and goals of correctional programs. Principles of institutional corrections and the social structure within institutions. Examination of noninstitutional alternatives including probation and parole.

COURSE DESCRIPTIONS

CRJ 237 3 3 0 0 0 OPEN
CRIMINAL & CONSTITUTIONAL LAW

The course will review the historical development of constitutional law, the philosophy of law and the current impact on law enforcement officials. The judicial process will be examined to better understand the societal and political influences that impact current-day constitutional decisions and a review of the current constitutional protections afforded to an individual. The course will also provide an examination of the elements of common offenses and the procedural safeguards in the criminal process.

Prerequisite: CRJ 100

CRJ 238 3 3 0 0 0 OPEN
CORRECTIONS & CONSTITUTIONAL LAW

This course covers law in the field of corrections: procedural and substantive rights of both inmates and the state, "good time" detainers and how the constitutional amendments, Supreme Court rulings and case law apply to institutional, correctional and community-based settings.

Prerequisite: CRJ 100

CRJ 248 3 3 0 0 0 OPEN
SCIENTIFIC INVESTIGATION

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.

CRJ 264 1 1 0 0 0 OPEN
EFFECTIVE COURTROOM TESTIMONY

An examination of the proper methods for preparing and delivering effective testimony as a criminal justice professional in a court of law.

Prerequisite: CRJ 100

CRJ 267 1 1 0 0 0 OPEN
E-DISCOVERY I—OVERVIEW

This course provides an overview of the e-discovery process. Helpful for technical practitioners and legal assistants, this course explains legal requirements, appropriate protocol and common expectations for e-discovery implementation.

CRJ 268 1 1 0 0 0 OPEN
E-DISCOVERY II—DATA COLLECT

This course explores the data identification and collection phases of the e-discovery process. The principles of logical file systems and acquisition methods are also discussed.

CRJ 269 1 1 0 0 0 OPEN
E-DISCOVERY III—DATA PROCESS

This course focuses on the aspects of post-acquisition data processing as part of e-discovery implementations. Additional consideration is given to review and reporting, as well as testimony expectations surrounding the e-discovery process.

Prerequisite: CRJ 268 or CRJ 176

CRJ 276 3 2 2 0 0 OPEN
COMPUTER FORENSICS II

This course is a continuation of study relating to computer forensics and data recovery topics. Topics discussed in this course include the investigation and analysis of password-protected and encrypted data, slack space, swap files and portable data storage/communication devices including PDAs and mobile phones. Software and hardware tools are widely used through various case studies and exercises to reinforce discussion topics.

Prerequisite: CRJ 176

CRJ 277 4 2 4 0 0 OPEN
ADVANCED DIGITAL FORENSIC METHODS

This course provides a forum for discussion and experimentation with contemporary topics relating to digital/computer forensics. Topics include evidence analysis specific to networked environments and non-conventional 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 or instructor approval

CRJ 278 1 1 0 0 0 OPEN
APPLE/MACINTOSH FORENSICS

This course provides a forensic investigation overview of contemporary Apple/Macintosh hardware and software. File system fundamentals and system artifacts that may be of evidentiary value are discussed. Additionally, investigation techniques of Apple mobile and embedded devices (running iOS) are discussed.

Prerequisite: CRJ 167

CRJ 279 1 1 0 0 0 OPEN
MALWARE FORENSICS

Course will familiarize students with malware response and analysis methodologies, as well as the legal considerations associated with such practice.

Prerequisite: CRJ 167

CRJ 292 1 0 2 0 0 OPEN
POLICE PHYS FITNESS & CONDITION

This course presents the specific requirements of the State of Iowa police physical fitness entry standards (Cooper Test) and academy physical training for the police officer. A fitness exam will be conducted and a personal exercise and nutrition program will be developed to meet each student's needs. Students will be evaluated at the beginning of the course to ensure they meet at least a 35% fitness level (as outlined in the State of Iowa Police Fitness Standards, Cooper Institute Standards). Each student's fitness levels will be monitored throughout the course and student adherence to exercise and nutrition prescription will be assessed. Students will be expected to improve at a minimum of 15% above the 35% level of fitness.

Prerequisite: CRJ 100

CRJ 293 1 1 0 0 0 OPEN
CRIM JUSTICE REPORT WRITING

This course will help Criminal Justice students master the ability to translate actions and observations into complete, accurate and understandable written reports for law enforcement and/or corrections professionals. Emphasis will be on the purpose of reports in the criminal justice field, the uses of reports, basic report components and guidelines for good report writing.

Prerequisite: CRJ 100 and ENG 105 or instructor permission

CRJ 296 1 1 0 0 0 VOC/TECH
LATENT FRICTION RIDGE EVIDENCE

This unit of study is intended to introduce the student to the basic preservation, development and collection of friction ridge evidence commonly found at crime scenes.

Prerequisite: CRJ 100

CRJ 297 1 1 0 0 0 VOC/TECH
DEATH & INJURY INVESTIGATIONS

This unit of study is intended to present a wide range of topics related to the investigation of death and injury to the human body, from the standpoint of the investigating police officer. The presentation is intended primarily for law enforcement officers and medico-legal death investigators, whose duty it is to inquire into such occurrences. The material is also suitable for college students with a minimal understanding of death and injury investigations.

Prerequisite: CRJ 100

CRJ 298 1 1 0 0 0 VOC/TECH
IMPRESSIONS & BLOODSTAINS

This unit of study is intended to introduce the student to the basic recognition, preservation, development and collection of bloodstain evidence commonly found at crime scenes.

Prerequisite: CRJ 100

CRJ 301 3 3 0 0 0 OPEN
INTRO TO HOMELAND SECURITY

The course is an examination of the role government and, more specifically, first responders play in the current threat to our nation from terrorism. The course will examine the role, authority and history of the government when faced with these threats. The structure, style and current practices will be covered along with an attempt to discover best practices and cost-effective solutions.

CRJ 302 3 3 0 0 0 OPEN
TRANSPORTATION & BORDER SEC

This course is an examination of the field of transportation and border security. The course will examine the role of both government and private enterprise in securing one of the most vulnerable and important industries worldwide. The course will discuss the threats to this industry with a view towards passenger, cargo and infrastructure protection. Strategies and policies to improve and protect the system will be discussed.

Prerequisite: CRJ 301

COURSE DESCRIPTIONS

CRJ 303 3 3 0 0 0 OPEN
INTEL ANALYSIS & SEC MGMT

This course is an examination of the field of intelligence analysis and its role in the security of the United States and its citizens. The course will examine the emergence of the discipline, its global role in the prevention of terrorism, its use in the intelligence community and its value in criminal investigations. Strategies and policies to improve intelligence and the end product will be discussed.

Prerequisite: CRJ 301

CRJ 330 1 1 0 0 0 OPEN
FORENSIC PHOTOGRAPHY I

First in a series of forensic photography courses, this specific course emphasizes photography fundamentals and practical techniques critical for authoritative crime scene and evidence documentation.

CRJ 331 1 1 0 0 0 OPEN
FORENSIC PHOTOGRAPHY II

This second course in forensic photography concentrates on technical aspects specific to creating images for investigative purposes. Topics include alternate light sources and photogrammetry, as well as an exploration of special considerations for documenting specific scenes, surveillance and evidence.

Prerequisite: CRJ 330

CRJ 332 1 1 0 0 0 OPEN
FORENSIC PHOTOGRAPHY III

This course explores the role of digital imaging technologies and processing as they relate to evidentiary photography. Discussion about legal issues and admissibility of photographs is also included.

Prerequisite: CRJ 331

CRJ 932 3 0 0 0 12 OPEN
INTERNSHIP

Involves 150 hours of active internship for students in an agency other than the one in which they may be employed. Synthesis paper required. (P/F)

Prerequisite: Criminal History Background Check to determine eligibility

CRR 101 2 0 4 0 0 VOC/TECH
SHEET METAL WELDING

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 area. Safety is emphasized.

CRR 150 1 1 0 0 0 VOC/TECH
BASIC SHOP SAFETY

A course designed to acquaint the student with the hazards in an auto collision facility. Emphasis on EPA regulations, OSHA guidelines, and personal health and safety in the shop area.

CRR 202 3 2 2 0 0 VOC/TECH
PLASTIC REPAIR

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: CRR 841

CRR 325 5 2 6 0 0 VOC/TECH
SHEET METAL FUNDAMENTALS

Automobile design, the materials used in construction, collision, corrective forces, procedures for repair and services are analyzed through class and lab study.

Prerequisite: CRR 101 must be taken concurrently or prior to this course

CRR 502 2 1 2 0 0 VOC/TECH
FRAME DAMAGE ANALYSIS

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.

CRR 655 5 1 8 0 0 VOC/TECH
ADVANCED COLLISION REPAIR

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: CRR 502, 101

CRR 742 2 1 2 0 0 VOC/TECH
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 2 2 0 0 0 VOC/TECH
ADVANCED ESTIMATING

Estimating, customer relations and service selling are all important skills of ownership and managership. 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 5 3 4 0 0 VOC/TECH
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 6 3 6 0 0 VOC/TECH
REFINISHING PRODUCTION

Industry application of colors and clear coats requires 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 7 3 8 0 0 VOC/TECH
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 105 1 0 2 0 0 GENERAL
COMPUTER ESSENTIALS

The basics of the Windows operating system, electronic communications and internet research will be covered. Students will use basic features of word processing and presentation software. This course is intended for students with limited or no computer skills.

CSC 110 3 2 2 0 0 OPEN
INTRO TO COMPUTERS

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 4 4 0 0 0 VOC/TECH
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 2 2 0 0 0 VOC/TECH
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 2 2 0 0 0 VOC/TECH
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 1 1 0 0 0 VOC/TECH
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

COURSE DESCRIPTIONS

DEA 321 2 1 2 0 0 VOC/TECH
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 1 0 2 0 0 VOC/TECH
DENTAL MATERIALS LAB

Through laboratory experience, the student learns techniques in preparation and utilization of dental materials.

Prerequisite: DEA 256

DEA 507 6 4 4 0 0 VOC/TECH
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 3 0 0 0 12 VOC/TECH
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 4 0 0 0 16 VOC/TECH
DENTAL ASSISTING CLINIC II

Continuation of DEA 576.

Corequisite: DEA 297

DEA 591 1 1 0 0 0 VOC/TECH
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 5 3 4 0 0 VOC/TECH
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 2 2 0 0 0 VOC/TECH
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 4 4 0 0 0 OPEN
DENT HYG ANATOMICAL SCIENCE

Programmed dental anatomy supplemented by lectures, quizzes and discussions on the development, morphology and functions of the teeth as well as principles of dental charting. Anatomy and physiology of the head and neck including mastication.

Prerequisite: BIO 164

DHY 121 2 2 0 0 0 OPEN
ORAL HISTOLOGY & EMBRYOLOGY

General and oral histology beginning with a consideration of cytology and followed by a study of the fundamentals of oral embryology and the normal microscopic anatomy of oral tissues.

Prerequisite: BIO 164

DHY 133 3 3 0 0 0 OPEN
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 3 3 0 0 0 OPEN
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 3 2 2 0 0 OPEN
ORAL RADIOLOGY

Lecture includes radiation physics; biological effects; radiation safety and protection; properties of x-ray film and techniques of exposing; processing, mounting and evaluating radiographic images. Laboratory experiences develop competence in exposing, processing, mounting and evaluating radiographs.

Corequisite: DEA 256 and DEA 507 or DHY 114

DHY 164 2 1 2 0 0 OPEN
ORAL RADIOLOGY II

A continuation of Dental Radiography I. Weekly seminars for basic interpretation of radiographs and laboratory experience to develop student competence in taking oral radiographic surveys.

Prerequisite: DHY 161. Corequisite: DHY 182

DHY 170 2 2 0 0 0 OPEN
PRINCIPLES OF DENTAL HYGIENE

Basic principles of clinical dental hygiene are introduced. In the practicum portion, we will look at the etiology of deposits and their effect on oral tissue, along with the theory and instrumentation techniques in deposit removal.

Prerequisite: BIO 154, CHM 122. Corequisite: DHY 171

DHY 171 3 0 6 0 0 OPEN
PRINCIPLES OF DENTAL HYG PRACT

See DHY 170.

Prerequisite: BIO 164, CHM 122. Corequisite: DHY 170

DHY 181 2 2 0 0 0 OPEN
DENTAL HYGIENE I

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 4 0 8 0 0 OPEN
CLINICAL DENTAL HYGIENE I

See DHY 181.

Prerequisite: DHY 170, 171. Corequisite: DHY 181, 164

DHY 211 2 2 0 0 0 OPEN
PERIODONTOLOGY

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

DHY 221 2 2 0 0 0 OPEN
DENTAL MATERIALS

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 1 0 2 0 0 OPEN
DENTAL MATERIALS LAB

Through laboratory experience the student learns techniques in the preparation and utilization of dental materials.

Corequisite: DHY 221

DHY 232 4 4 0 0 0 OPEN
NUTRITION/PREVENTIVE DENTISTRY

Lecture-discussion course relating to 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 1 1 0 0 0 OPEN
NUTRITION/DENTAL COUNSELING

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

COURSE DESCRIPTIONS

DHY 251 3 2 2 0 0 OPEN
COMMUNITY ORAL HEALTH
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 3 2 2 0 0 OPEN
DENTAL HEALTH EDUCATION
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 2 2 0 0 0 OPEN
DENTAL HYGIENE II
A continuation of clinical practices. Further instruction and application in techniques for a complete oral prophylaxis and Phase 1 therapy. Topics include smoking cessation, intraoral photography, sonic scaling and air polishing.
Prerequisite: DHY 181, 182. Corequisite: DHY 282

DHY 282 2 0 0 6 0 OPEN
CLINICAL DENTAL HYGIENE II
See DHY 281.
Prerequisite: DHY 181, 182. Corequisite: DHY 281

DHY 291 2 2 0 0 0 OPEN
DENTAL HYGIENE III
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 5 0 0 15 0 OPEN
CLINICAL DENTAL HYGIENE III
See DHY 291.
Prerequisite: DHY 281, 282. Corequisite: DHY 291

DHY 301 2 2 0 0 0 OPEN
DENTAL HYGIENE IV
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 5 0 0 15 0 OPEN
CLINICAL DENTAL HYGIENE IV
See DHY 301.
Prerequisite: DHY 292, 291. Corequisite: DHY 301

DRA 101 3 3 0 0 0 CORE
INTRODUCTION TO THEATRE
A survey of the elements and techniques of theatre with emphasis on acting, directing and playwriting. Attendance at dramatic production encouraged.

DRA 130 3 3 0 0 0 GENERAL
ACTING I
Training of the body, voice and mind as acting instruments. Course includes acting exercises, scene analysis and performance.

DRA 147 3 3 0 0 0 GENERAL
CREATIVE DRAMA SCHOOL/REC
Elements of improvisational acting. Students will learn approaches for participating in and leading creative drama activities.

DRA 945 2 0 4 0 0 GENERAL
PRACTICUM I
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 3 0 6 0 0 GENERAL
PRACTICUM II
See DRA 945.

DRA 948 4 0 8 0 0 GENERAL
PRACTICUM III
See DRA 945.

DSL 145 5 1 8 0 0 VOC/TECH
BASIC ELECTRICITY
An introduction to the basic electricity and electronic principles that apply to diesel-powered equipment. Systems and components covered include starting, charging, lighting and accessories.

DSL 155 4 1 6 0 0 VOC/TECH
ADVANCED ELECTRICITY
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 330 3 1 4 0 0 VOC/TECH
DIESEL ENGINE TUNE-UP
Information on preventive measures to eliminate failures and diagnose engine problems. Instruction related to tune-up procedures.

DSL 356 6 1 10 0 0 VOC/TECH
DIESEL ENGINES I
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 366 6 1 10 0 0 VOC/TECH
DIESEL ENGINES II
Instruction in diagnosing problems and the nature of repairs needed. Information on preventive measures to eliminate failures.
Prerequisite: DSL 356

DSL 409 5 2 6 0 0 VOC/TECH
DIESEL ELECTRONICS
A study of electronic fundamentals, lab work with electronic components and testing equipment. Computer-controlled diesel engines are used in lab to demonstrate applications of electronics on diesel power that will meet the demands of the future. Experienced individuals may contact the instructor to gain admittance to this course.
Prerequisite: DSL 145

DSL 438 5 1 8 0 0 VOC/TECH
DIESEL FUEL SYSTEMS
The student will be introduced to basic fuel system principles, operational theory and fundamentals of electronic systems of commonly used fuel systems, as well as general repair and diagnostic procedures with exposure to several elecronically controlled engines and their diagnostic tools.
Prerequisite: DSL 366

DSL 546 6 2 8 0 0 VOC/TECH
POWER TRAINS I
Class and lab activities in the design and operation of drivetrain components including clutches, manual transmissions, drive lines, rear axles and wheel bearings.

DSL 555 5 1 8 0 0 VOC/TECH
POWER TRAINS II
Instruction will include the basics of automatic transmissions, power shift transmissions, final drives and hydrostat drives.
Prerequisite: DSL 546, 606

DSL 606 6 1 10 0 0 VOC/TECH
HYDRAULICS AND BRAKES
The study of basic mobile hydraulics and vehicle brake systems. Introduces principles, components, fluid systems and circuits of hydraulic systems. Vehicle braking studies hydraulic and air brake systems.

DSL 733 3 1 4 0 0 VOC/TECH
AIR CONDITIONING
A course on basic air conditioning theory and design. Emphasis will be placed on various system controls and service operations.

DSL 830 5 1 8 0 0 VOC/TECH
OPERATION & MAINTENANCE
Instruction in the proper methods of maintaining all equipment. Safety will be emphasized.

DSL 845 5 1 8 0 0 VOC/TECH
HEAVY EQUIPMENT REPAIR
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, 606, 145

COURSE DESCRIPTIONS

DSL 855 5 1 8 0 0 VOC/TECH
TRUCK REPAIR

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, classroom and field conditions. Experienced individuals may contact the instructor to gain admittance to this course.

Prerequisite: DSL 366, 546, 606, 145

DTM 350 1 1 0 0 0 VOC/TECH
HEALTH FIELD

Roles of dietary personnel in health facilities and state and federal guidelines. Explore managerial aspects within facilities.

DTM 351 1 0 2 0 0 VOC/TECH
FOOD PREPARATION

Basic principles and development of techniques as they apply to the preparation of each food group and the criterion for evaluating product quality. Laboratory experience.

DTM 352 2 2 0 0 0 VOC/TECH
SANITATION/MEAL SERVICE

Methods of efficiently serving safe, pleasing food. An awareness of sanitation will be created for all areas of food service.

DTM 353 1 1 0 0 0 VOC/TECH
NUTRITION LIFE CYCLE

An in-depth study (social, physiological and psychological need) of residents from infancy to geriatric. Explore the therapeutic role of food.

DTM 354 1 1 0 0 0 VOC/TECH
MODIFIED DIETS

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 1 1 0 0 0 VOC/TECH
FOOD PRODUCTION MANAGEMENT

Total production needs, equipment layout, work methods, food storage, food preparation, service, sanitation and use of computers in food service.

DTM 356 2 2 0 0 0 VOC/TECH
FOOD SERVICE MANAGEMENT

The management functions required to organize and maintain an efficient, quality, dietary department are developed.

DTM 361 1 0 0 0 4 VOC/TECH
FOOD PREP FIELD EXPERIENCE

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 1 0 0 0 4 VOC/TECH
SANITATION/MEAL SRVC FIELD EXP

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 1 0 0 0 4 VOC/TECH
NUTRITION LIFE CYCLE FIELD EXP

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 1 0 0 0 4 VOC/TECH
MODIFIED DIET/FIELD EXPERIENCE

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 1 0 0 0 4 VOC/TECH
FOOD PRODUCTION FIELD EXP

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 1 0 0 0 4 VOC/TECH
FOOD SERVICE MGMT FIELD EXP

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 3 3 0 0 0 OPEN
INTRO TO EARLY CHILDHOOD ED

Gives students a historical and philosophical foundation of the field of early childhood education. Includes an overview of assessment and trends that influence best practices. Explores careers in the field. Addresses influences of families and diversity.

ECE 106 1 0 0 0 4 OPEN
CHILD DEV. ASSOCIATE STANDARDS

Develop and prepare for the Infant Toddler, Preschool or Family Child Care Child Development Associate (CDA) assessment and verification visit. Review and compile professional certificates and resources. Develop a professional resource file in accordance with CDA requirements. Practice oral interviewing and test-taking skills. (P/F)

Prerequisites: ECE 103, 133, 243, 343, and 158 or ECE 221, or instructor permission

ECE 130 1 1 0 0 0 OPEN
EMERGENCY CARE

Cardio-pulmonary resuscitation and First Aid according to Iowa DHS requirements for child care providers. Identify health and safety practices for early childhood settings. CPR/First Aid and Universal Precautions certification awarded upon satisfactory completion of assignments. Course may be repeated for a maximum of 3 credits.

ECE 133 3 3 0 0 0 OPEN
CHILD HEALTH, SAFETY & NUTRITION

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 3 3 0 0 0 OPEN
EARLY CHILDHOOD CURRICULUM I

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 3 3 0 0 0 OPEN
EARLY CHILDHOOD CURRICULUM II

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.
Corequisite: ECE 359 or instructor approval

ECE 170 3 3 0 0 0 OPEN
CHILD GROWTH & DEVELOPMENT

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 3 3 0 0 0 OPEN
HOME, SCHOOL & COMM RELATIONS

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 3 3 0 0 0 OPEN
INFANT/TODDLER CARE AND EDUC.

Focuses on care, education and assessment of children from birth to 36 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 3 3 0 0 0 OPEN
EARLY CHILDHOOD GUIDANCE

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 343 or instructor approval

COURSE DESCRIPTIONS

ECE 262 3 0 0 9 0 OPEN
EARLY CHILDHOOD FIELD EXPER

Supervised experience in selected early childhood setting. 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, 133, 159, 170, 243; a grade of C or better in ECE 343 and ECE 359; 2.0 program GPA; or instructor permission. Current CPR/First Aid, Universal Precautions and Mandatory Reporter Certification.

Prerequisite OR Corequisite: ECE 221. Corequisite: ECE 944

ECE 281 2 0 0 0 8 OPEN
PRACTICUM

Placement in a program for young children and/or families. Emphasis is on the development of competencies necessary for employment in a similar setting.

Prerequisite: Accepted into ECE program, 10 ECE credits, 2.0 GPA or instructor approval. Current CPR/First Aid, Universal Precautions, Mandatory Child Abuse Reporter Certification

ECE 290 3 3 0 0 0 OPEN
EARLY CHILDHOOD PROGRAM ADMIN

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 1 0 2 0 0 OPEN
EARLY CHILDHOOD GUIDANCE LAB

Focuses on effective approaches and positive guidance strategies supporting the development of all children. Students observe for and utilize strategies taught in ECE 243.

Corequisite: ECE 243 or instructor approval

ECE 359 1 0 2 0 0 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, and 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 2 0 0 0 10 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, 133, 159, 170, 243; "C" or better in ECE 343 and ECE 359; ECE 343 and ECE 359 instructor recommendations; 2.5 program GPA; or instructor permission. Current CPR/First Aid, Universal Precautions and Mandatory Child Abuse Reporter Certification. Internship application is required the semester prior to enrollment in the course.

Prerequisite OR corequisite: ECE 215, 221, 290

ECE 944 1 1 0 0 0 OPEN
ECE FIELD EXPERIENCE SEMINAR

Emphasis on professionalism, self-reflection and preparation for professional employment. Includes completion of all professional portfolio components.

Corequisite: ECE 262

ECN 120 3 3 0 0 0 CORE
PRINCIPLES OF MACROECONOMICS

This course is an introduction to 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 not a prerequisite for ECN 130

ECN 130 3 3 0 0 0 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 213 3 3 0 0 0 OPEN
INTRO TO EDUCATION

Presents a broad overview of the field of education, including foundations of American education, roles of teachers and students, history and philosophy and curriculum. Students will complete a 40-hour practicum at the elementary, middle or high school level. Recommended for students who plan to major in education.

EDU 218 2 1 0 0 4 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 213

EDU 245 3 3 0 0 0 OPEN
EXCEPTIONAL LEARNER

A survey of exceptional learners in the classroom. History, philosophy, current issues, trends and mainstreaming will be discussed.

EGR 100 1 1 0 0 0 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 2 0 0 0 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 151 2 2 0 0 0 GENERAL
ENGINEERING VISUAL BASIC

This course provides students with a solid foundation in structured programming skills for the solution of engineering problems. Students will analyze problems, design solution algorithms, translate the algorithm to Visual BASIC computer code and present the solutions to the problems.

Prerequisite: MAT 130

EGR 155 2 2 0 0 0 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 2 0 0 0 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 or prior to this course

EGR 166 4 2 4 0 0 OPEN
ENGR GRAPHICS/CONCPTL DESIGN

An integration of conceptual design, engineering graphics and computer-aided design. This course includes orthographic projection applied to three-dimensional geometry and engineering drawing, as well as 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

COURSE DESCRIPTIONS

EGR 180 3 3 0 0 0 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

EGT 400 3 3 0 0 0 ADJUNCT
PLTW–INTRO TO ENGR DESIGN

This course uses a design development process while enriching technical and engineering problem-solving skills; students create and analyze models using specialized computer software (AutoCAD Inventor).

Prerequisite or Corequisite: One year of high school algebra

EGT 410 3 3 0 0 0 ADJUNCT
PLTW–PRINCIPLES OF ENGINEERING

This course explores technology systems and manufacturing processes using the methodology of project-based engineering problem-solving. Learning activities explore a variety of engineering disciplines and address the social and political consequences of technological change.

Prerequisite: 1 year of high school algebra or EGT 400. Prerequisite or Corequisite: high school algebra

EGT 420 3 3 0 0 0 ADJUNCT
PLTW–DIGITAL ELECTRONICS

This course teaches applied logic through work with electronic circuitry, which students also construct and test for functionality.

EGT 450 3 1 4 0 0 VOC/TECH
PLTW–COMPUTER INTEGRATED MANUF

This course enhances computer modeling skills by applying principles of robotics and manufacturing automation to the creation of models of three-dimensional designs.

ELT 093 1 1 0 0 0 COLL PREP
CONCEPTS ELECTRONICS/COMPUTERS

This course is designed for students who need additional practice 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: ELT 108

ELT 106 3 3 0 0 0 VOC/TECH
BASIC MATH FOR ELECTRONICS

Mathematics related to basic electronics. Course includes basic algebra, right triangle trigonometry, scientific notation, with applications to DC and AC circuitry.

ELT 108 4 4 0 0 0 VOC/TECH
MATH—ELECTRONICS & COMPUTERS

Introduction to the mathematical skills needed by electronics/computer technicians.

ELT 123 3 2 2 0 0 VOC/TECH
PROGRAMMABLE 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 131

ELT 125 3 2 2 0 0 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 2 0 0 0 VOC/TECH
INDUSTRIAL ELECTRONICS

The devices and circuits used in thyristor control of machines are presented. Course includes phase control of DC motors, triac control of AC motors and various speed control circuits.

Prerequisite: ELT 131

ELT 131 3 2 2 0 0 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 2 2 0 0 VOC/TECH
MECHANISMS

This introductory course covers linear and angular displacement, velocities, and accelerations of linkages, gear trains, and belt and friction drives. Topics include vectors, simple and complex machines, and toggle and intermittent motion mechanisms.

ELT 147 3 3 0 0 0 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 148 3 0 6 0 0 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 3 0 0 0 VOC/TECH
NEC COMMERCIAL/INDUSTRIAL

The basic principles of the NEC for layout and construction of 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 VOC/TECH
NEC COMMERCIAL/INDUSTRIAL LAB

Utilize the basic principles of the NEC for layout of commercial and industrial wiring systems. Apply code rules, using a hands-on approach for commercial and industrial electrical installations from simplistic to complicated wiring.

ELT 178 2 2 0 0 0 VOC/TECH
ELECTRICAL GROUNDING

The understanding of grounding and eliminating the misconceptions when dealing with NEC requirements for installation.

ELT 181 1 1 0 0 0 VOC/TECH
ADV MATH FOR ELECTRONICS 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 217 3 2 2 0 0 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: ELT 303, 131

ELT 303 3 2 2 0 0 VOC/TECH
PRINCIPLES OF ELECTRICITY

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 VOC/TECH
DIGITAL CIRCUITS

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 VOC/TECH
DIGITAL CIRCUITS LAB

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 multiplexors.

Corequisite: ELT 307

COURSE DESCRIPTIONS

ELT 325 3 3 0 0 0 VOC/TECH
DIGITAL ELECTRONICS

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, counters and microprocessors.

Corequisite: ELT 326

ELT 326 3 0 6 0 0 VOC/TECH
DIGITAL ELECTRONICS LAB

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 347 1 0 2 0 0 VOC/TECH
OCCUPATIONAL SAFETY/LINEMAN

This course is designed to provide the knowledge and skills required to work safely in the field of electrical line work. This course covers specific safety regulations and emphasizes industry safety standards and practices.

ELT 348 3 1 4 0 0 VOC/TECH
BASIC ELECTRICAL RIGGING

This course teaches the skills necessary to perform basic rigging and execute proper signals for guiding machinery operators.

ELT 349 4 2 4 0 0 VOC/TECH
BASIC ELECTRICAL CLIMBING

Students will obtain the knowledge and skills necessary to safely and efficiently climb wooden poles used in power line construction. The course will have classroom instruction and vigorous hands-on instruction.

ELT 368 3 3 0 0 0 VOC/TECH
DC & AC FUNDAMENTALS

An introductory course in DC and AC fundamentals. Subject matter includes Ohm's law, series and parallel circuits and measuring instruments.

ELT 369 3 0 6 0 0 VOC/TECH
DC & AC FUNDAMENTALS LAB

This laboratory will enable the student to analyze basic L-C-R circuitry. Basic test equipment usage will also be presented.

Prerequisite: ELT 368 must be taken concurrently with or prior to this course

ELT 385 4 4 0 0 0 VOC/TECH
ELECTRIC CIRCUIT ANALYSIS I

An analytical introduction to the direct and alternating current fundamentals essential in all phases of electricity and electronics. Topics covered include Ohm's law, Kirchhoff's law, Thevenin-Norton and Superposition theorems, impedance, resonance, series and parallel circuits, resistors, capacitors, inductors, batteries and meters.

Corequisite: ELT 386

ELT 386 2 0 4 0 0 VOC/TECH
ELEC CIRCUIT ANALYSIS I LAB

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 385

ELT 387 3 3 0 0 0 VOC/TECH
ELECTRIC CIRCUIT ANALYSIS II

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 385, 386. Corequisite: ELT 388

ELT 388 2 0 4 0 0 VOC/TECH
ELEC CIRCUIT ANALYSIS II LAB

An analysis of solid-state circuitry. Course 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 385, 386. Corequisite ELT 387

ELT 389 3 1 4 0 0 VOC/TECH
FABRICATION TECHNIQUES

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 470 4 4 0 0 0 VOC/TECH
BUS IMAGING & SECURITY APPLIC.

This course provides students opportunities to analyze imaging systems, which include video monitoring, copying and printing and to analyze security systems as fire alarm and intruder alarms. Equipment includes laser printers, copiers, fax machines, scanners, monitors, cameras, LCD displays and such related accessories as document feeders and sorters.

Prerequisite: ELT 131, 143. Corequisite: ELT 471

ELT 471 3 0 6 0 0 VOC/TECH
BUS IMAGING & SECURITY APP LAB

This course provides students practice in the installation, maintenance and troubleshooting of various security systems as well as experience in troubleshooting, servicing and repairing copiers, laser printers, fax machines, scanners and peripherals.

Prerequisite: ELT 131, ELT 143. Corequisite: ELT 470

ELT 474 3 3 0 0 0 VOC/TECH
COMMUNICATIONS SYSTEMS

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 387, 388. Corequisite: ELT 475

ELT 475 3 0 6 0 0 VOC/TECH
COMMUNICATIONS SYSTEMS LAB

Laboratory experiments in radio, television, satellite and microwave systems, including the construction and alignment of a broadcast radio receiver.

Prerequisite: ELT 387, 388. Corequisite: ELT 474

ELT 478 3 3 0 0 0 VOC/TECH
BASIC IMAGING DEVICES

An analysis of various imaging systems, including laser printers, copiers, fax machines, scanners, and such accessories as document feeders and sorters, monitors, cameras and LCD displays.

Prerequisite: ELT 387, 388. Corequisite: ELT 479

ELT 479 3 0 6 0 0 VOC/TECH
BASIC IMAGING DEVICES LAB

Experience in troubleshooting, service and repair of copiers, laser printers, fax machines, scanners and peripherals, monitors, cameras, LCD displays.

Prerequisite: ELT 387, 388. Corequisite: ELT 478

ELT 482 3 3 0 0 0 VOC/TECH
SECURITY SYSTEMS

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 VOC/TECH
SECURITY SYSTEMS LABVOC/TECH

Installation, maintenance, and troubleshooting of various security systems.

Prerequisite: ELT 781, 782. Corequisite: ELT 482

ELT 484 4 4 0 0 0 VOC/TECH
MEDICAL ELECTRONICS SYSTEMS

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, ICN, CCU central station monitoring systems and respiratory instrumentation. Included will be a self-paced study of medical terminology.

Prerequisite: ELT 131, 143. Corequisite: ELT 485

ELT 485 3 0 6 0 0 VOC/TECH
MEDICAL ELECTRONICS SYSTEM LAB

This course covers the repair, calibration and preventive maintenance of critical care, diagnostic and life support equipment in a hands-on lab environment.

Prerequisite: ELT 781, 782. Corequisite: ELT 484

ELT 611 2 2 0 0 0 VOC/TECH
MICROPROCESSORS

This course covers two major areas of microcomputers and microprocessors. The first is an investigation of the specific architecture of microprocessors and fundamental microcomputer hardware. The second area is software and studies-specific assembly language instructions for common routines and program structures.

Prerequisite: ELT 307, 308. Corequisite: ELT 612

COURSE DESCRIPTIONS

ELT 612 3 0 6 0 0 VOC/TECH
MICROPROCESSORS LAB

Includes experiments that exercise microprocessor instruction sets and microcomputer central processing units, memory and I/O devices. Routines and subroutines are written in assembly language, assembled, downloaded and tested. Students will participate in a minimum of four, two-hour job-shadowing experiences, which may take place outside of regular class time.

Prerequisite: ELT 307, 308. Corequisite: ELT 611

ELT 614 3 1 4 0 0 VOC/TECH
MICROPROC. & MICROCONTROLLERS

This course covers two major areas of microcomputers and microprocessors. The first is an investigation of the specific architecture of microprocessors and fundamental microcomputer hardware. The second area is software and is concerned with the assembly-level and high-level instructions for common routines and program structures. The course includes hands-on practice programming and interfacing microcontroller devices. Students will participate in a minimum of four two-hour job shadowing experiences, which may take place outside of regular class time.

Prerequisite: ELT 325, 326

ELT 643 3 3 0 0 0 VOC/TECH
PROCESS CONTROL INSTRUMENT

A comprehensive study of such process control characteristics as elements, modes and stability, along with detailed knowledge of measurement technique, control mode implementation and final control element functions. In keeping with modern trends, the digital aspects of process control technology are stressed.

Prerequisite: ELT 611, 612. Corequisite: ELT 644

ELT 644 2 0 4 0 0 VOC/TECH
PROCESS CONTROL INSTR LAB

This lab includes experiments on transducers used in process control as well as experiments on proportional, integral and derivative control.

Prerequisite: ELT 611, 612. Corequisite: ELT 643

ELT 652 4 2 4 0 0 VOC/TECH
COMPUTER REPAIR & NETWORKING

This course is designed for the student who is already proficient with computers and electronic circuitry. The course follows the recommendations of CompTIA on the subjects and materials needed to assist the student in learning about computer hardware and the functions needed to pass the A Plus exam. A detailed study and hands-on lab component give students the opportunity to install and troubleshoot computer and networking hardware.

Prerequisite: ELT 387, 331

ELT 721 3 1 4 0 0 VOC/TECH
ROBOTICS

The course provides an introduction to robotic fundamentals. The student will examine parameters of robot operation and program robots for various applications.

ELT 725 2 1 2 0 0 VOC/TECH
INTRO FLEXIBLE MANUFACTURING

This course introduces the student to aspects of a flexible manufacturing cell. Course will familiarize the student with cell software and hardware, and includes labs on cell components.

Prerequisite: ELT 721

ELT 781 2 2 0 0 0 VOC/TECH
ELECTRO-MECHANICAL SYSTEMS

The basic theories, concepts and principles of such electro-mechanical devices as relays, contactors, and DC/AC motors will be covered, along with the basic principles of mechanical relationships: gears, pulleys, belt drives, wheel and axle, inclined plane, screw, wedge and levers. Pneumatic devices such as compressors, motors, valves and actuators are covered, along with basic sensors.

Prerequisite: ELT 387, 388. Corequisite: ELT 782

ELT 782 2 0 4 0 0 VOC/TECH
ELECTRO-MECHANICAL SYSTEMS LAB

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, which may take place outside of regular class time.

Prerequisite: ELT 387, 388. Corequisite: ELT 781

ELT 791 3 3 0 0 0 VOC/TECH
HYDRAULICS & PNEUMATICS

The basic principles of fluid power and the operation and application of fluid power components are introduced. In the lab we will evaluate valves along with linear and rotary actuators. In addition, pneumatic position control servo mechanisms are evaluated.

Corequisite: ELT 792

ELT 792 2 0 4 0 0 VOC/TECH
HYDRAULICS & PNEUMATICS LAB

The basic principles of fluid power and the operation and application of fluid power components are introduced. In the lab we will evaluate valves along with linear and rotary actuators.

Corequisite: ELT 791

ELT 793 3 2 2 0 0 VOC/TECH
ADVANCED FLUID POWER

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 2 2 0 0 0 VOC/TECH
SYSTEMS TROUBLESHOOTING

A study of electronic systems troubleshooting theory, methods and techniques.

Prerequisites: ELT 478, 479, 474, 475, 482, 483. Corequisite: ELT 817

ELT 817 3 0 6 0 0 VOC/TECH
SYSTEMS TROUBLESHOOTING LAB

A hands-on experience troubleshooting and repairing a variety of electronic equipment, including copiers, security monitors and cameras, radio, television and satellite systems.

Prerequisite: ELT 478, 479, 474, 475, 482, 483. Corequisite: ELT 816

ELT 870 3 1 4 0 0 VOC/TECH
ELECTRONICS CAPSTONE PROJECT

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 892 4 2 4 0 0 VOC/TECH
FIELD OPERATIONS/LINEMAN

This course provides the fundamental knowledge for line workers: a) tools, materials and equipment of a typical electric system b) tool identification, use, safety and care c) material identification and use d) safety equipment identification and care e) working with ropes including tying knots and use of hand lines f) machinery identification g) machinery operation use and care h) hazards of line work i) underground electric systems.

ELT 932 3 0 0 0 12 VOC/TECH
INTERNSHIP

A semi-structured experience in the student's chosen field working as an intern with a sponsoring organization. Students have the opportunity to network with professionals and employees in their field. Students 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 area: ELT 474; ELT 475 or 470; ELT 471 or 484; ELT 485.

EMS 105 1 0 2 0 0 VOC/TECH
IA LAW ENFORCEMENT EMERG CARE

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.

COURSE DESCRIPTIONS

EMS 217 6 3 4 0 4 VOC/TECH
EMERGENCY MEDICAL TECHNICIAN

This course is designed to educate students on how to provide basic emergency medical care and transportation for critical and noncritical patients who access the emergency medical system. EMT's possess the basic knowledge and skills necessary to provide patient care and transportation. These skills include but are not limited to airway management, bleeding control, cervical spine stabilization, vehicle extrication techniques and vital sign assessment. EMTs function as part of a comprehensive EMS response, under medical oversight, and perform interventions with the basic-level emergency equipment. This course is the required entry-level EMS certification course designed to prepare students for advanced-level EMS courses.

Prerequisite: High School Diploma or GED, American Red Cross CPR/AED for the Professional Rescuer Card or American Heart Association Healthcare Provider CPR Card, 17 years of age

EMS 460 2 2 0 0 0 VOC/TECH
ROLE OF THE PARAMEDIC

The course covers Module I of the DOT National Standard Curriculum for EMT Paramedics and prepares students for their roles and responsibilities. The lab component includes review of EMT-Basic skills using skills checklists.

Prerequisite: admission to the Paramedic Specialist program

EMS 463 2 2 0 0 0 VOC/TECH
MEDICAL/LEGAL/ETHICAL ISSUES

The course covers Module I of the DOT National Standard Curriculum for EMT Paramedics and prepares students for their roles and responsibilities. Areas of medical, legal and ethical issues are covered, as well as promotion of injury prevention and how it pertains to the paramedic. The lab component includes review of the EMT-Basic skills using skills checklists.

Prerequisite: EMS 460

EMS 467 7 5 4 0 0 VOC/TECH
PRINCIPLE OF PATHOPHYSIOLOGY I

The course covers Module II of the DOT National Standard Curriculum for EMT Paramedics and prepares the students for their roles and responsibilities. General principles of anatomy and physiology, as well as pathophysiology, will be provided in a classroom setting. Human life span development and the role of Public Health in EMS will also be reviewed and discussed.

Prerequisite: EMS 463

EMS 468 7 5 4 0 0 VOC/TECH
PRINCIPLE OF PATHOPHYSIOLOGY II

The course covers Module II of the DOT National Standards Curriculum for EMT Paramedics and prepares students for their roles and responsibilities. General principles of pharmacology and medication administration will be provided in a classroom setting. Advanced airway management and IV therapy provide for physical and field assessment, clinical decision-making, documentation, and the assessment and management of emergencies seen by the EMS provider.

Prerequisite: EMS 467

EMS 470 4 3 2 0 0 VOC/TECH
PATIENT ASSESSMENT

This course covers Module III of the DOT National Standard Curriculum for EMT Paramedics. This course includes history-taking, techniques of physical examination, patient assessment and clinical decision-making. Students will learn to follow an accepted format for dissemination of patient information in verbal form, either in person or over the radio. Documentation of the essential elements of patient assessment, care and transport is covered. The lab component includes skills in history-taking, techniques of physical examination, patient assessment, clinical decision-making and communication.

Prerequisite: EMS 468

EMS 473 7 5 2 0 7 VOC/TECH
MEDICAL EMERGENCIES

This course covers Module IV of the DOT National Standard Curriculum for EMT Paramedics. Content includes the skills and knowledge necessary to assess and manage medical emergencies specifically for pulmonary, cardiac and neurological emergencies. This course includes techniques of physical examination on the medical patient, patient assessment and clinical decision-making. Documentation of the essential elements of patient assessment for the medical patient, care and transport is covered. The lab component includes skills in history-taking, techniques of physical examination, patient assessment, clinical decision-making and communication.

Prerequisite: EMS 470

EMS 476 7 5 2 0 7 VOC/TECH
TRAUMA

This course covers Module IV of the DOT National Standard Curriculum for EMT Paramedics. Students will predict the likelihood of injuries to the trauma patient based on mechanism of injury. Skills and management of soft tissue and burn injuries, as well as head, neck, chest and abdominal injuries are included. The lab component includes assessment and management of the patient with shock, hemorrhage, and spinal cord and musculoskeletal injury using the Paramedic skills checklist.

Prerequisite: EMS 473

EMS 480 6 1 0 0 23 VOC/TECH
SPECIAL CONSIDERATIONS

This course covers Modules V & VI of the DOT National Standard Curriculum for EMT Paramedics. Assessment and management of specific age groups—including neonatal, pediatric and gerontologic patients—is identified. Chronically ill patients—those who have been victims of abuse and culturally diverse patients—are addressed. The lab component will be the assessment and management of special situations, including resuscitation of infants and children. Students will assume the role of team leader while managing common medical emergencies. Paramedic skills checklists will be used to assist in completion of the course.

Prerequisite: EMS 476

EMS 483 4 1 0 0 15 VOC/TECH
OPERATIONS

This course covers Modules VII and VIII of the DOT National Standard Curriculum for EMT Paramedics. Guidelines for safe medical transport, general incident management, rescue and crime scene management will be covered. The lab component will include the principles of triage, rescue operations and hazardous materials incidents. Paramedic skills checklists will be used to assist in completion of the course.

Prerequisite: EMS 480

ENG 060 3 3 0 0 0 COLL PREP
COLLEGE PREPARATORY WRITING I

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 3 3 0 0 0 COLL PREP
COLLEGE PREPARATORY WRITING II

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 3 3 0 0 0 GENERAL
RESOURCES FOR COMPOSITION

This course provides a college-credit composition environment that stresses the resources and reinforces the skills necessary for negotiating college writing.

ENG 105 3 3 0 0 0 CORE
COMPOSITION I

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 3 3 0 0 0 CORE
COMPOSITION II

Expository and persuasive writing developed through critical reading. The course explores structure, style, research and documentation.

Prerequisite: ENG 105

ENG 108 3 3 0 0 0 CORE
COMP II: TECHNICAL WRITING

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

COURSE DESCRIPTIONS

ENG 221 3 3 0 0 0 GENERAL
CREATIVE WRITING

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 3 3 0 0 0 GENERAL
CREATIVE WRITING: POETRY

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 3 3 0 0 0 GENERAL
CREATIVE WRITING: FICTION

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 3 3 0 0 0 GENERAL
PLAYWRITING AND SCREENWRITING

A course devoted to the advanced study and writing of stage-worthy plays and/or marketable screenplays emphasizing appropriate techniques of each dramatic form and an expanded understanding of contemporary practitioners.

ENV 103 1 1 0 0 0 GENERAL
SUSTAINABLE LIVING

This class provides an up-close-and-personal look at the sustainability movement. Develop an understanding of the environment you live in. Learn more about the role you can play in creating a sustainable lifestyle for yourself and your family at home, work and school.

ENV 115 3 3 0 0 0 CORE
ENVIRONMENTAL SCIENCE

This course combines the basic principles of ecology with current environmental issues. Includes energy, land use, pesticides and pollution. Wildlife, fisheries, forestry, and soil and water conservation practices are emphasized. Designed for the non-science major.

ENV 116 1 0 2 0 0 CORE
ENVIRONMENTAL SCIENCE LAB

This lab supplements discussion in ENV 115 Environmental Science. Lab includes laboratory and field work related to environmental science. Emphasis is placed on scientific methodology and investigation.

Prerequisite: Enrollment in or prior completion of ENV 115 or equivalent

ENV 145 4 3 2 0 0 CORE
CONSERVATION BIOLOGY

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, 116

ENV 160 3 2 2 0 0 GENERAL
RESTORING PLANT COMMUNITIES

Introduction to the 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 3 2 2 0 0 COLL PREP
HIGH INTER ESL LISTENING/CONV

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 3 2 2 0 0 COLL PREP
ADV ESL LISTEN/CONVERS SKILLS

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 3 2 2 0 0 COLL PREP
COMMUNICATIVE GRAMMAR FOR ESL

This course provides nonnative 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 3 2 2 0 0 COLL PREP
READ ENGLISH AS A 2ND LANGUAGE

This course is designed for nonnative 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 3 3 0 0 0 COLL PREP
INTRO TO WRITING SKILLS-ESL

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 103 4 4 0 0 0 GENERAL
ADVANCED ACADEMIC ESL GRAMMAR

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 the complex grammatical structures used in authentic academic settings integrated with writing skills. This course addresses the linguistic and instructional needs of nonnative English-speaking students. It may be taken concurrently with carefully selected college courses.

Prerequisite: 84 or above on ESL Test in COMPASS—Grammar Usage

ESL 104 3 3 0 0 0 GENERAL
ADVANCED ACADEMIC ESL WRITING

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 nonnative 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: 84 or above on ESL Test in COMPASS—Grammar Usage

ESL 160 3 3 0 0 0 GENERAL
ESL MULTICULTURAL LITERATURE

This course addresses the academic needs of advanced nonnative English language students by exposing them to engaging traditional and multicultural literary works to further immerse them in a scholarly environment. Through appreciation and interpretation of a culturally diverse range of fiction, poetry, and drama, students relate their immigrant experiences to the literary world while working at an advanced level of academic English.

Prerequisite: 84 or above on Reading ESL COMPASS test

FIN 101 3 3 0 0 0 OPEN
PRINCIPLES OF BANKING

This course surveys banking functions. It provides a comprehensive introduction to the diversified services offered by the banking industry today.

FIN 121 3 3 0 0 0 OPEN
PERSONAL FINANCE

This course emphasizes family financial planning including financial statements, budgeting, taxes, risk management and retirement.

FIN 180 3 3 0 0 0 OPEN
INTRODUCTION TO INVESTMENTS

Provides basic information to familiarize students with various investments: 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.

COURSE DESCRIPTIONS

FIN 214 1 1 0 0 0 OPEN
STOCKS, BONDS AND INVESTMENTS
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.

FIR 124 3 3 0 0 0 OPEN
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 138 3 3 0 0 0 OPEN
PRINCIPLES OF FIRE PREVENTION
This course is a survey of the principles of fire prevention. Students will learn to interpret and apply complex fire prevention regulations. Course covers traditional regulatory aspects and functions associated with fire prevention, the fire code process, plan review, inspections and fire protection systems testing. The investigation process from the fire scene to the courtroom and state and federal agencies involved in fire investigation is also covered. Other topics are the importance of fire prevention records and recordkeeping, personnel and financial management.
Prerequisite: FIR 230, 152, 220

FIR 152 3 3 0 0 0 OPEN
FIRE PROTECTION SYSTEMS
An examination of devices and systems that support the fire service in the detection and suppression of fire.
Prerequisite: FIR 230

FIR 182 3 3 0 0 0 OPEN
HAZARDOUS MATERIALS
This course concentrates on principles of response planning for incidents involving the manufacture, transportation, storage and use of hazardous materials with the objective of minimizing harm to people, property and the environment.
Prerequisite: CHM 122 and FIR 230

FIR 200 3 3 0 0 0 OPEN
OCCU S/H IN EMERGENCY SERVICES
The firefighting 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 OPEN
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 OPEN
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 OPEN
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 OPEN
PROPERTY INSURANCE—FRAUD INVES
Covers principles of property insurance and investigation of incendiary fires with an emphasis on the investigation of insurance fraud fires.

FIR 290 4 0 0 0 16 OPEN
FIRE FIGHTER I CERTIFICATION
This course is a survey of the basic principles of firefighting as they relate to firefighter 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 0 12 OPEN
FIRE FIGHTER II CERTIFICATION
This course is a survey of the basic principles of firefighting as they relate to firefighter 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 CORE
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 CORE
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 CORE
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.
Prerequisite: FLA 142 or permission of instructor

FLA 242 4 4 0 0 0 CORE
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 241 or permission of instructor

FLC 141 4 4 0 0 0 CORE
ELEMENTARY CHINESE I
Development of the basic skills of understanding, speaking, reading and writing Chinese. Grammar analysis, classroom conversational practice and some exploration of the Chinese culture.

FLC 142 4 4 0 0 0 CORE
ELEMENTARY CHINESE II
Continued practice of the four basic skills and grammar analysis. Introduction of short prose selections with conversational emphasis.
Prerequisite: FLC 141 or instructor permission

FLC 241 4 4 0 0 0 CORE
INTERMEDIATE CHINESE I
Review of essential grammatical construction emphasizing major areas of difficulty for English speakers. Use of Chinese cultural and literary materials to develop conversational skills.
Prerequisite: FLC 142 or instructor permission

FLC 242 4 4 0 0 0 CORE
INTERMEDIATE CHINESE II
Continued review of grammatical constructions using Chinese cultural materials. Reading, writing and conversation will be emphasized in the context of cultural issues and current events.
Prerequisite: FLC 241 or instructor permission

FLF 151 5 5 0 0 0 CORE
ELEMENTARY FRENCH I
An introduction to the basic skills in understanding, speaking, reading and writing French. Grammar analysis, classroom conversational practice and some exploration of French culture.

FLF 152 5 5 0 0 0 CORE
ELEMENTARY FRENCH II
Continued practice of the four basic skills and grammar analysis. Introduction of short prose selections with conversational emphasis.
Prerequisite: FLF 151 or instructor permission

COURSE DESCRIPTIONS

FLF 241 4 4 0 0 0 CORE
INTERMEDIATE FRENCH I

Review of essential grammatical constructions emphasizing major areas of difficulty for English speakers. Use of cultural and literary materials to develop conversational skills.

Prerequisite: FLF 152 or permission of instructor

FLF 242 4 4 0 0 0 CORE
INTERMEDIATE FRENCH II

Continued review of grammatical constructions using cultural materials. Reading, writing and conversation will be emphasized in the context of cultural issues and current events.

Prerequisite: FLF 242 or permission of instructor

FLG 141 4 4 0 0 0 CORE
ELEMENTARY GERMAN I

Development of the basic skills of understanding, speaking, reading and writing German. Grammar analysis, classroom conversational practice and some exploration of the German culture.

FLG 142 4 4 0 0 0 CORE
ELEMENTARY GERMAN II

Continued practice of the four basic skills and grammar analysis. Introduction of short prose selections with conversational emphasis.

Prerequisite: FLG 141 or instructor permission

FLG 241 4 4 0 0 0 CORE
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: FLG 142 or instructor permission

FLG 242 4 4 0 0 0 CORE
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 permission.

Prerequisite: FLG 241 or instructor permission

FLI 141 4 4 0 0 0 CORE
ELEMENTARY ITALIAN I

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 CORE
ELEMENTARY ITALIAN II

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 CORE
INTERMEDIATE ITALIAN I

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 CORE
INTERMEDIATE ITALIAN II

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

FLJ 141 4 4 0 0 0 CORE
ELEMENTARY JAPANESE I

Development of the basic skills of understanding, speaking, reading and writing Japanese. Grammar analysis, classroom conversational practice and some exploration of the Japanese culture.

FLJ 142 4 4 0 0 0 CORE
ELEMENTARY JAPANESE II

Continued practice of the four basic skills and grammar analysis. Introduction of short prose selections with conversational emphasis.

Prerequisite: FLJ 141 or instructor permission

FLJ 241 4 4 0 0 0 CORE
INTERMEDIATE JAPANESE I

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: FLJ 142 or instructor permission

FLJ 242 4 4 0 0 0 CORE
INTERMEDIATE JAPANESE II

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: FLJ 241 or instructor permission

FLS 151 5 5 0 0 0 CORE
ELEMENTARY SPANISH I

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.

FLS 152 5 5 0 0 0 CORE
ELEMENTARY SPANISH II

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. 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 CORE
SPANISH FOR HERITAGE SPKRS I

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 CORE
INTERMEDIATE SPANISH I

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 CORE
INTERMEDIATE SPANISH II

Having studied most of the grammar in previous courses, time will be spent reviewing the more difficult and troublesome concepts including a continuation of the study of the subjunctive mood. Comprehensible input now includes more extensive readings in Spanish literature, newspapers, websites or other print, as well as visual media. While serving to increase vocabulary and knowledge of grammar, they also serve as a source of cultural information.

Prerequisite: FLS 241 or instructor's permission

FLS 281 4 4 0 0 0 CORE
SPANISH FOR HERITAGE SPKRS II

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

COURSE DESCRIPTIONS

GEO 111 3 3 0 0 0 CORE
INTRO TO GEOGRAPHY

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 CORE
REG GEOG OF THE NONWEST WORLD

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 CORE
REGIONAL GEOG OF THE DEV WORLD

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 GENERAL
JAPAN: THE CHANGING TRADITION

Focuses on the 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.

GLS 200 3 3 0 0 0 GENERAL
COUNTRY STUDY

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.

GLS 210 3 3 0 0 0 GENERAL
INTERNATIONAL YEAR SEMINAR

The International Year Seminar is a team-taught, interdisciplinary course focusing on the designated country and includes a survey of many of the elements of culture: history, politics, economics and ethnicities, as well as the products of that culture including language, art, architecture, literature, film, performing arts, cuisine and music. This course is repeatable up to 6 credits.

Prerequisite: A 3.5 GPA or higher, with a minimum of 12 hours or instructor approval

GLS 220 3 3 0 0 0 GENERAL
THE MIDDLE EAST AND ISLAM

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.

GLS 230 3 3 0 0 0 GENERAL
LATIN AMERICA

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.

GLS 235 3 3 0 0 0 GENERAL
INTRO TO INTERNATIONAL STUDIES

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.

GRD 301 3 2 2 0 0 VOC/TECH
INTRO TO DESKTOP PUBLISHING

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

GRD 401 3 2 2 0 0 VOC/TECH
GRAPHIC DESIGN ORIENTATION

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, 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

GRD 403 3 2 2 0 0 VOC/TECH
COMMUNICATION DESIGN I

Learn fundamental design elements and principles. Explore how to ignite your creative spark! Study color theory and learn how to follow the design process to visually communicate an idea or message to a target audience.

Prerequisite: GRD 415 and GRD 459

GRD 404 3 2 2 0 0 VOC/TECH
TYPOGRAPHY II

Advanced exploration in the application and theory of typographic principles. Students strengthen skills in systems, typographically expressive layouts and using typographic relationships by creating a dynamic grid 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 VOC/TECH
TYPOGRAPHY I

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 415, GRD 459

GRD 410 3 2 2 0 0 VOC/TECH
ILLUSTRATION I

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.

GRD 411 3 2 2 0 0 VOC/TECH
COMMUNICATION DESIGN II

Use the 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 403

GRD 414 3 2 2 0 0 VOC/TECH
ILLUSTRATION II

Unleash your creativity with a complete digital art studio: Corel Painter software and a pressure-sensitive graphics tablet. Unlimited undos 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 VOC/TECH
INDESIGN I

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 the fundamentals, basic commands and procedures used to create professional documents.

GRD 419 2 0 4 0 0 VOC/TECH
LETTERING AND SIGN ART

The study of traditional letter forms, typography, hand lettering skills and design principles for the production of posters, signs, logos and other graphic images.

COURSE DESCRIPTIONS

GRD 421 3 3 0 0 0 VOC/TECH
INTERNSHIP PREPARATION

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 right materials: a resume, cover letter and portfolio. This course will identify real-world workplace behavior and expectations.

GRD 424 3 1 0 0 8 VOC/TECH
GRAPHIC DESIGN INTERNSHIP

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.

Prerequisite: GRD 421

GRD 426 3 2 2 0 0 VOC/TECH
COMMUNICATION DESIGN III

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 VOC/TECH
INDESIGN II

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 437 3 2 2 0 0 VOC/TECH
COMMUNICATION DESIGN IV

Blend creativity and technology with advanced level problem-solving and research strategies to create effective multichannel design solutions.

Prerequisite: GRD 426, 430, 471

GRD 448 3 2 2 0 0 VOC/TECH
AIRBRUSH I

The airbrush is a versatile tool-making it easy to paint images for graphic design illustration. In this beginning class you will learn the skills needed to paint airbrush illustrations. This will include proper care for your equipment, drawing and painting skills like freehand, masking and stencil techniques while using a dual action airbrush.

GRD 450 3 2 2 0 0 VOC/TECH
AIRBRUSH II

Continue your study of the airbrush as a tool used to create illustrations for graphic design. In this intermediate class you will build on skills learned in Airbrush I by adding advanced techniques in painting and rendering. This class will include learning how to paint projects like portraits in black, white and color, rendering vehicles and rendering fur or hair on mammals.

Prerequisite: GRD 448

GRD 452 3 2 2 0 0 VOC/TECH
AIRBRUSH III

Create custom automotive illustrations as you continue your study of the airbrush. In this advanced class you will build on skills learned in Airbrush I and II. This class will add techniques of painting and rendering on metal surfaces. You will learn how to paint special effects such as flames, fire and graphics.

Prerequisite: GRD 450

GRD 459 3 2 2 0 0 VOC/TECH
ILLUSTRATOR

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.

GRD 462 3 1 4 0 0 VOC/TECH
COMPUTER GRAPHICS II

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 VOC/TECH
PHOTOSHOP

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.

GRD 464 3 2 2 0 0 VOC/TECH
DIGITAL ARTISTRY

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 level methods to create stellar artwork that will leave others saying "WOW!"

Prerequisite: GRD 459, 463

GRD 470 3 2 2 0 0 VOC/TECH
INTERACTIVE MEDIA I

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 up and running on the web.

Prerequisite: GRD 463 or instructor permission

GRD 471 3 2 2 0 0 VOC/TECH
INTERACTIVE MEDIA II

Interactive Media II aligns with the Adobe Digital Design: Foundations of Web Design curriculum and is the second of two semesters. A personal capstone project is created, allowing students to refine key communication skills in design, communication, project management and web technology using Adobe Flash, Dreamweaver and Fireworks.

Prerequisite: GRD 470

GRD 473 3 2 2 0 0 VOC/TECH
MOTION GRAPHICS AND SPL EFFECT

Learn how to develop and utilize animation, motion tweens, timeline effects, masking, movie clips, action script essentials, sound, video, buttons, bitmaps, filters and blend modes. Develop a project that applies the course content to enhance usability and value in a digital environment.

Prerequisites: WDV 101, 261, 470

GRD 480 3 2 2 0 0 VOC/TECH
VIDEO PRODUCTION I

Students will learn the proper use of cameras, lighting, lenses, sound and technology to create shots and digital video clips. Students will also learn the fundamentals of editing. A personal digital camera is required for this course; students will also be trained to operate professional-grade cameras.

GRD 481 3 2 2 0 0 VOC/TECH
VIDEO PRODUCTION II

Learn to implement elements and principles of digital video production. Explore how to start from a basic concept to develop and produce short video segments for use in websites or other digital media. Emphasis will be placed on getting the concept from a raw idea to production using industry-standard software to produce and edit content.

Prerequisite: GRD 480

GRD 482 3 2 2 0 0 VOC/TECH
VIDEO PRODUCTION III

Examine the use of effective video techniques, wardrobe, acting, backgrounds and props. Instruction includes application of effective plots and plot structure to fit the message being communicated. Lab activities will emphasize getting the concept from a raw idea to production using industry standard procedures and practices in production activities.

Prerequisite: GRD 481

COURSE DESCRIPTIONS

GRT 400 4 2 4 0 0 0 VOC/TECH
INTRO TO PRINTING METHODS

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 403 2 0 4 0 0 0 VOC/TECH
PRODUCTION METHODS

In this continuation of Introduction to Printing Methods, students will learn production methods of multicolor, multipanel products for screen, offset and digital printing.

GRT 404 2 2 0 0 0 0 VOC/TECH
INTRO TO VISUAL COMMUNICATIONS

Immerse yourself in the dynamic Visual Communications industry. Students will explore various industry fields and career opportunities, orient themselves with the Macintosh computer and Adobe applications environments, learn the basics of color as it applies to graphics projects, and gain knowledge in the legal issues specific to the visual communications industry.

GRT 409 3 3 0 0 0 0 VOC/TECH
PROJECT PLANNING & MANAGEMENT

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, 403 or instructor approval

GRT 415 4 2 4 0 0 0 VOC/TECH
DIGITAL IMAGING I

Students will learn digital image capture, including use of a professional-grade digital camera. Students will then use Adobe Photoshop to adjust 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 420 4 2 4 0 0 0 VOC/TECH
ADVANCED PRINTING METHODS

A specialization course in offset lithography. The student will do advanced work in multicolor printing. This class will also cover all bindery operation including folding, cutting and stitching.

Prerequisites: GRT 400, 403

GRT 424 4 2 4 0 0 0 VOC/TECH
DIGITAL IMAGING II

This course is an advanced digital imaging course for students pursuing a digital publishing emphasis in the Graphic Technologies program or the Digital Publishing certificate. Students will work primarily in Adobe Photoshop to develop advanced digital imaging skills for print and web. Color management and digital image correction will be emphasized.

Prerequisite: GRD 463

GRT 426 4 2 4 0 0 0 VOC/TECH
DIGITAL PUBLISHING III

This course is an advanced desktop publishing course for students pursuing a digital publishing emphasis in the Graphic Technologies program or the Digital Publishing certificate. Students will work primarily in Adobe InDesign to develop advanced skills in layout, text formatting and digital production for print and web.

Prerequisite: GRD 415, 430

GRT 427 4 2 4 0 0 0 VOC/TECH
SPECIALTY PRINTING METHODS

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 430 3 2 2 0 0 0 VOC/TECH
EMERGING TECHNOLOGIES

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 multichannel marketing.

Prerequisite: Completion of terms 1, 2 and 3 of the Graphic Technologies program or instructor approval

GRT 453 4 2 4 0 0 0 VOC/TECH
PRINTING METHODS CAPSTONE

This is the final course for students pursuing an emphasis in printing technologies in the Graphic Technologies AAS degree program. Students work collaboratively to produce a capstone project, utilizing their skills developed in previous courses. In conjunction, students enter completed projects in a statewide professional competition and prepare both hard-copy and digital portfolios.

Prerequisite: Completion of the Visual Communications diploma and Term 4 of the Graphic Technologies program

GRT 455 4 2 4 0 0 0 VOC/TECH
DIGITAL PUBLISHING CAPSTONE

This is the final course for students pursuing an emphasis in digital publishing in the Graphic Technologies AAS degree program. Students work collaboratively to produce a capstone project, utilizing their skills developed in previous courses. In conjunction, students enter completed projects in a statewide professional competition and prepare both hard-copy and digital portfolios.

Prerequisite: Completion of the Visual Communications diploma and Term 4 of the Graphic Technologies program

GRT 932 3-4 1 0 0 8-12 VOC/TECH
INTERNSHIP

On-the-job training for Graphic Technologies students. Included is a weekly seminar for the exchange of information review and evaluation.

Prerequisite: Completion of the Visual Communications diploma and Term 4 of the Graphic Technologies program

HCM 100 2 2 0 0 0 0 VOC/TECH
SANITATION & SAFETY

Principles and methods of sanitation safety and equipment. Equipment selection and facilities planning. Also includes preventive maintenance.

HCM 104 1 0 2 0 0 VOC/TECH
SANITATION & EQUIPMENT LAB

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 0 VOC/TECH
BAKING (LAB)

This course offers instruction in 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.

Prerequisite: HCM 143, 144 or instructor permission

HCM 124 2 0 4 0 0 0 VOC/TECH
ADV BAKING/BUFFET DECORATING

Advanced principles and procedures of producing baked goods, decorative work and display pieces.

Prerequisite: HCM 110, 270

HCM 143 3 3 0 0 0 0 VOC/TECH
FOOD PREPARATION I

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 0 VOC/TECH
FOOD PREPARATION I LAB

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 0 VOC/TECH
FOOD PREPARATION II

The study of the principles and procedures of quantity food production as they apply to salads, soups, vegetables, entrees and desserts. Emphasis on organization and recipe standardization.

Prerequisite: HCM 143, 144

HCM 153 2 0 4 0 0 0 VOC/TECH
FOOD PREPARATION II LAB

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

COURSE DESCRIPTIONS

HCM 167 3 0 6 0 0 VOC/TECH
CULINARY SKILLS DEVELOPMENT
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 VOC/TECH
ADVANCED CULINARY CUISINE
Discussion of the more intricate and difficult cooking principles and techniques of classical cuisine, along with planning for advanced culinary cuisine.
Prerequisite: HCM 167. Corequisite: HCM 169

HCM 169 4 0 8 0 0 VOC/TECH
CULINARY CUISINE LAB
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 VOC/TECH
INTERNATIONAL CUISINE (LAB)
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

HCM 173 2 2 0 0 0 VOC/TECH
INTERNATIONAL CUISINE
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 3 0 6 0 0 VOC/TECH
INTERNATIONAL CUISINE LAB II
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 2 0 4 0 0 VOC/TECH
DINING ROOM SERVICE
A dining room service course in an actual restaurant experience with emphasis on using sound management techniques and quality customer service.

HCM 210 2 2 0 0 0 VOC/TECH
DINING MANAGEMENT
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 2 2 0 0 0 VOC/TECH
NUTRITION
An overview of nutrition-related topics including the psychology of eating and evaluation of food intake.

HCM 240 2 2 0 0 0 VOC/TECH
MENU PLANNING & DESIGN
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 2 2 0 0 0 VOC/TECH
PURCHASING
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 2 0 4 0 0 VOC/TECH
GARDE MANGER
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 2 2 0 0 0 VOC/TECH
BEVERAGE MANAGEMENT
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 2 2 0 0 0 VOC/TECH
INTRO TO HOSPITALITY INDUSTRY
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 510 3 0 0 0 12 VOC/TECH
WORK EXPERIENCE
An approved program of experience in one of the many hospitality areas: restaurant, hospital, club, school food service, hotel or motel. (P/F)

HCM 550 3 3 0 0 0 VOC/TECH
FOOD AND WINE SEMINAR
This introductory course involves flavor profiles of both food and wine with a focus on culinary principles. This course is not for Culinary Arts/ Hospitality Careers majors.

HCM 600 2 2 0 0 0 VOC/TECH
INTRO TO LODGING OPERATIONS
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 604 5 0 0 0 20 VOC/TECH
HOTEL SERVICE INTERNSHIP
An approved program of work experience in one of the many hotel/motel properties in the area.
Prerequisite: HCM 320. Corequisite: HCM 600

HCM 605 2 2 0 0 0 VOC/TECH
HOTEL ADMINISTRATION
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 5 2 6 0 0 VOC/TECH
RESIDENTIAL HEATING & AC
Residential heating and cooling basics. Study of installation and service procedures through class and lab practices.
Prerequisite: HCR 307

HCR 256 5 2 6 0 0 VOC/TECH
APPLIED HEATING & AC
The application of heating and air conditioning units as related to residential systems and controls. This course covers application, installation and troubleshooting of heating, air conditioning and heat pump units. This course covers Manual "J" residential heat loss/gain calculations and equipment selection.
Prerequisite: HCR 253

HCR 260 3 1 4 0 0 VOC/TECH
HVAC TRADE SKILLS I
This course covers all types of soldering and brazing used in the heating, air conditioning refrigeration industry.

HCR 270 5 2 6 0 0 VOC/TECH
ADVANCED HEATING & AC
This course covers installation, advanced troubleshooting, maintaining and repairing of geo-thermal heat pumps, gas, fuel oil and electric heating systems.
Prerequisite: HCR 256

HCR 290 5 2 6 0 0 VOC/TECH
COMMERCIAL HVAC/REFRIGERATION
Course covers basic commercial refrigeration systems, components and their use, applications, methods of installation, maintenance, diagnosis and repairs.
Prerequisite: HCR 270, 506

HCR 307 5 2 6 0 0 VOC/TECH
FUNDAMENTALS OF REFRIGERATION
This course covers the principles of refrigeration, domestic systems and equipment.

HCR 404 5 2 6 0 0 VOC/TECH
ELECTRICITY
A study of basic electricity principles: Ohm's law, series and parallel circuits as applied to HVAC and refrigeration. Course also includes hands-on practice with training boards in the lab.

COURSE DESCRIPTIONS

HCR 440 5 2 6 0 0 VOC/TECH
ELECTRICAL CONTROLS & CIRCUITS

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 3 2 2 0 0 VOC/TECH
AIR DISTRIBUTION

Involves the study of fans, blowers and dampers, the design of duct systems for proper air delivery and final system balancing. Includes lab practice.

Prerequisite: HCR 256

HCR 515 3 1 4 0 0 VOC/TECH
SHEET METAL FABRICATION

This course covers all types of sheet metal fabrications pertaining to the HVAC profession.

Prerequisite: HCR 260

HCR 717 3 2 2 0 0 VOC/TECH
BLUEPRINT READING

A study of blueprint reading related to the HVAC/R trade. Drafting symbols and terminology will be covered, along with the skills needed to make simple scaled drawings.

HCR 803 5 2 6 0 0 VOC/TECH
ENVIRONMENTAL CONTROLS

This course offers a basic understanding of building environmental and energy management systems, along with computerized (DDC), pneumatic and electro-mechanical controls.

Prerequisite: HCR 307, 440, 506. Corequisite: HCR 290

HCR 840 2 1 2 0 0 VOC/TECH
COMPUTER LOAD CALCULATIONS

Course is designed to deliver instruction in the area of heating/cooling load calculations, air flow and air supply/return layout. Extensive use of computers and CAD systems will be incorporated to enhance student productivity.

Prerequisite: HCR 506

HCR 932 4 0 0 0 16 VOC/TECH
INTERNSHIP

On-the-job training for Heating, Air Conditioning, Refrigeration program students.

Prerequisite: HCR 253, 440 and 515. Students must have a 2.0 grade point average or better in the HACR Technology program and a valid driver's license.

HIS 112 4 4 0 0 0 CORE
WEST CIV: ANCIENT TO EARLY MOD

The student surveys the great civilizations from Greece and Rome, through the rise of Christianity, to Europe in the Middle Ages, the Renaissance and Reformation, the modern state, the new science and the secular outlook, parliamentary government in England and political absolutism in France and Eastern Europe.

HIS 113 4 4 0 0 0 CORE
WEST CIV: EARLY MODERN TO PRES

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 150 4 4 0 0 0 CORE
U.S. HISTORY TO 1877

A survey of main themes of American history from 1492 to 1877 with emphasis on the political, social, economic, religious and intellectual aspects of the presettlement, Colonial, Revolutionary, Antebellum Civil War and Reconstruction eras.

HIS 153 4 4 0 0 0 CORE
U.S. HISTORY SINCE 1877

A survey of main themes of American history from 1877 to the present with emphasis on political, social, economic, religious and intellectual aspects of the Gilded Age, the Progressive Era, WWI, the Roaring Twenties, the Great Depression, WWII and post-WWII Era.

HIS 201 3 3 0 0 0 GENERAL
IOWA HISTORY

A broad survey of Iowa history from Indian cultures and pioneer farming through modern agriculture, gradual social changes and long-term political trends.

HIS 216 4 4 0 0 0 ADJUNCT
HISTORY OF MODERN RUSSIA

Students survey the history of Russia from the reign of Nicholas (II) Romanov through the presidency of Dmitry Medvedev. Students will study political change from absolutist to parliamentary, the rise of the Communist Party, the struggle for control of the Communist Party, the harsh rule of Stalin, the impact of WWII, post-WWII international influence of the Soviet Union, Soviet Union's involvement with Iowa, downfall of the Soviet Union and the rise of post-Communist Party Russia.

HIS 249 3 2 2 0 0 GENERAL
STUDY ABROAD: BRIT LIFE & CULTURE

This course is a survey of British Life and Culture, limited to students in the London Study Abroad Program. Taught by various professional guest lecturers, this course examines various historical, geographic, political, economic and social contexts. Students will compare and contrast conditions and lifestyles of different time periods while undertaking related visits in London and throughout Britain. Course assignments, determined by the DMACC faculty member, will focus on major historical themes and ideas as expressed in the history and culture of Great Britain. Students may not receive credit for both HIS 249 and HUM 249.

HIS 257 3 3 0 0 0 CORE
AFRICAN-AMERICAN HISTORY

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 3 3 0 0 0 GENERAL
THE CIVIL WAR

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.

HIS 280 3 3 0 0 0 GENERAL
FAMILY HISTORY RESEARCH

The student will learn to use various resources and methods in researching, specifically, family history and genealogy. These would include, but not be limited to, census records, various legal documents, obituaries, cemetery lists, family Bibles, diaries, city directories, local histories, immigration records, military records, photographs, etc.

HIT 120 1 1 0 0 0 VOC/TECH
PHARMACOLOGY FOR HIT

This course provides an introduction to common medication, medication therapies and drug effects relevant to the subject of health information technology. Students will learn the basics of electronic prescribing (e-prescribing), the role of health information technology in drug safety and the current pharmacology environment in the U.S.

HIT 125 2 1 2 0 0 VOC/TECH
ESSENTIALS OF HEALTH RECORDS

This course familiarizes students with the origin, uses, content and format of health records, including both paper and electronic health records. It covers required standards for health records, organization of records and analysis of health record data. The role of health information management professionals is also introduced.

HIT 162 2 2 0 0 0 VOC/TECH
DATA SECURITY FOR HEALTH IT

This course provides knowledge of current data security issues in the healthcare environment. A high-level emphasis is placed on identifying vulnerabilities and protection schemes. Additionally, the confidentiality, integrity and availability of protected health information will be discussed.

Prerequisite: BCA 113

HIT 290 3 2 2 0 0 VOC/TECH
REIMBURSEMENT METHODS

This introduction to health insurance and reimbursement studies payment systems for all types of healthcare systems and managed care. Changing trends in the reimbursement of healthcare services are reviewed. Topics include prospective payment systems, charge master maintenance, DRGs, APCs, ASC Groups, RBRVs, third party payers, EOB, Quality Improvement Organizations, managed care/capitation and compliance. Students practice completing claim forms for a variety of medical scenarios and learn the importance of accurate coding and medical necessity to ensure proper reimbursement.

Prerequisites: All first year HIT courses (HIT 120, 125, 162, 360, 450, 520)

COURSE DESCRIPTIONS

HIT 315 2 2 0 0 0 VOC/TECH
ELECTRONIC APP FOR HEALTH DATA

This course provides an overview of health informatics and explores the impact of information technology on the healthcare industry. Students will use electronic spreadsheet and database applications to analyze and format data for presentations and decision-making. A variety of electronic applications are reviewed in a computer lab and/or field trip setting.

Prerequisite: HIT 125

HIT 339 2 2 0 0 0 VOC/TECH
QUALITY MANAGEMENT

This course provides a basic understanding of the principles of clinical quality measurement, TQM/CQI, effective management practices and evidence-based medicine. It covers the tools of healthcare quality management and the organizational context in which management practices are applied. Students will learn how systems can be used to improve organizational performance.

Prerequisite: Completion of all first year HIT courses (HIT 125, 450, 162, 120, 360 and 520) or instructor approval.

HIT 360 3 3 0 0 0 VOC/TECH
INTRODUCTION TO HIT

This course covers the basics of health information technology (HIT) and electronic health information exchange (HIE). Current and emerging e-health applications will be discussed, including electronic health records (EHRs), registries, clinical decision support tools, etc. Other topics include current federal and state e-health initiatives, the clinical value of health information technology and the potential impact on the healthcare system.

HIT 390 1 1 0 0 0 VOC/TECH
INTRO HIT PROJECT MANAGEMENT

This course will provide an overview of project management in the health information technology field. Students will gain an understanding of tools and techniques that result in the ability to create and follow a project management plan.

HIT 420 2 2 0 0 0 VOC/TECH
LEGAL ASPECTS OF HEALTH INFO

This course focuses on the legal aspects of health information and health records, including access and use of both paper and electronic information. Topics covered include confidentiality, release of health information, liability issues, patient rights, fraud and abuse and ethics. Students will study federal and Iowa-specific laws and regulations related to protected health information.

Prerequisites: Completion of all first-year HIT courses (HIT 120, 125, 162, 360, 450 and 520) or instructor's approval

HIT 430 3 2 2 0 0 VOC/TECH
QUALITY IMPROVEMENT

This course covers outcomes-based quality improvement methodologies for healthcare organizations. Students learn how to measure customer satisfaction, implement quality management programs, and apply best practices and standards. It also covers patient safety and how to create a culture of safety in the organization.

Prerequisite: HIT 360

HIT 450 2 2 0 0 0 VOC/TECH
HEALTH STATISTICS

This course covers the collection, analysis, verification and display of health statistics. Students will learn uses for health statistics, basic statistical principles, commonly computed rates, vital health statistics, uniform reporting requirements and effective data display.

HIT 520 2 0 0 0 8 VOC/TECH
INTERNSHIP I

This course is a supervised 120-hour professional practice experience that introduces the student to basic functions in a health information technology setting. The student will observe daily operations and apply knowledge and skills learned in the classroom as applicable. Students will be required to meet objectives, submit a written report of the experience and undergo a job performance evaluation. Site to be arranged by the instructor.

Prerequisites: HIT 120, 125, HSC 120, HIT 360, 390, 450 or instructor approval

HIT 521 4 0 0 0 16 VOC/TECH
INTERNSHIP II

This course is a supervised 240-hour professional practice experience designed to further develop and build upon the experiences of Internship I, at the same or a different organization. The student will observe daily operations and apply knowledge and skills learned in the classroom as applicable. Students will be required to meet objectives, submit a written report of the experience and undergo a job performance evaluation. Site to be arranged by the instructor.

Prerequisite: HIT 520, 315 and 162

HON 101 1 1 0 0 0 GENERAL
INTRODUCTION TO HONORS

This seminar provides an introduction into the DMACC Honors Program, including an introduction to personal and team leadership and to the electronic portfolio that students will maintain while in the program. Students will map two years of study at DMACC and either make contact with an advisor at a 4-year college or university for transfer at the end of the degree program or make contact with a future employer to join the workforce after graduation.
Prerequisite: Acceptance into DMACC Honors Program

HON 150 1 1 0 0 0 GENERAL
HONORS SERVICE LEARNING

This seminar provides an opportunity for students to learn about their roles as servant-leaders by planning, executing and assessing a service learning project.

Prerequisite or Corequisite: HON 101

HON 201 1 1 0 0 0 GENERAL
HONORS LEADERSHIP

This seminar provides an extensive examination of leadership vision, skills and strategies and allows students to carry out and assess a personal leadership project.

Prerequisite or Corequisite: HON 101

HON 250 1 1 0 0 0 GENERAL
HONORS CAPSTONE

This seminar provides an opportunity for students to reflect on their experiences in leadership and service learning, as well as showcase their work in DMACC honors courses. Students will create an electronic portfolio of their honors work in the Honors Program.

Prerequisite: HON 101

HSC 102 1 1 0 0 0 VOC/TECH
EMERGENCY CARE

Learn to perform care for medical emergencies: fractures, burns, resuscitation, basic CPR (cardio-pulmonary resuscitation, American Heart Level II Standards) Certification.

HSC 105 1 1 0 0 0 VOC/TECH
SURVEY OF HEALTHCAREERS

This course introduces both the variety and requirements for healthcare careers. Basic core knowledge and professional expectations common to all healthcareers are explored. Workplace safety and an overview of the health system and current trends are also covered.

HSC 109 3 3 0 0 0 VOC/TECH
INTRO TO HEALTHCAREERS

Students will discover the many options available, including roles and responsibilities in healthcareer options. This course is designed to provide the student with the information necessary to make their healthcareer choice.

HSC 120 3 3 0 0 0 VOC/TECH
MEDICAL TERMINOLOGY I

Builds a medical vocabulary through an understanding of anatomic roots for words denoting body structures, prefixes, suffixes and body functions.

HSC 121 3 3 0 0 0 VOC/TECH
MEDICAL TERMINOLOGY II

Continues to build a medical language vocabulary by studying the musculoskeletal, endocrine, nervous and integumentary systems.

Prerequisite: HSC 120 with a grade of C- or better

HSC 159 3 3 0 0 0 VOC/TECH
ESL PREP FOR HEALTHCARE EDUC.

This course is designed for the non-native-English-speaking student who plans to enter a healthcare-focused educational program. Students will learn career-specific professional and colloquial English to improve the receiving and sending of messages in healthcare courses, the educational practicum setting, and in the professional clinical setting. Speaking, writing and reading skills will be integrated. The course content is designed to help the student better understand cultural implications when learning about and providing healthcare in the United States to a diverse population.

Prerequisite: A minimum score of 94 in all areas of the ESL COMPASS Test; BIO 733 or instructor permission

COURSE DESCRIPTIONS

HSC 172 3 2 0 4 0 VOC/TECH
NURSE AIDE

Entry level skills to seek employment in Iowa skilled facilities. Meets OBRA87 standards.

Prerequisite: Criminal/Abuse background check; Immunization form as required by clinical site; Flu vaccine—October through April. See the DMACC website for more information

HSC 182 3 2 0 3 0 VOC/TECH
ADVANCED NURSE AIDE

A continuation of the Nurse Aide course, providing additional skills and clinical to work in hospital.

Prerequisite: HSC 172 or a State-approved 75-hour nurse aide class; Criminal/Abuse background check; Physical and Immunization form as required by clinical site; Flu vaccine—October through April; CPR certification. See the DMACC website for more information

HSC 183 1 1 0 0 0 VOC/TECH
CCDI-DEMENTIA ILLNESS TRAINING

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's patient and the importance of appropriate communication. Explanation of the stages of Alzheimer's disease and appropriate interventions will be introduced.

HSC 231 2 1 0 0 4 VOC/TECH
MEDICAL SCIENCE OBSERVATION I

Supervised experience in a medical healthcare agency. Enables students to learn about 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 2 1 0 0 4 VOC/TECH
MEDICAL SCIENCE OBSERVATION II

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 3 3 0 0 0 VOC/TECH
HUMAN NUTRITION

Understanding and implementing present-day knowledge of nutrition, along with the use of food for health and satisfaction of the individual and family.

HSC 281 5 4 0 3 0 VOC/TECH
LIMITED RADIOLOGY

IBN#22 State-required course for people employed in a clinic to take chest and extremities, sinus or spinal x-rays.

HSV 109 3 3 0 0 0 GENERAL
INTRO TO HUMAN SERVICES

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.

HSV 130 3 3 0 0 0 OPEN
INTERVIEWING/INTERPER RELATION

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.

HSV 133 3 3 0 0 0 OPEN
CONFLICT RESOLUTION

This course is designed to study the history, components and process of conflict resolution and to examine the implications for the use of conflict resolution within the human services, psychology and social work fields. This course will provide students with the opportunity to develop conflict resolution skills as well as to examine their own comfort with conflict and how conflict is presented in the media. The course will also focus on the application of mediation in terms of social justice issues, in particular on child welfare, juvenile problems and restorative justice.

HSV 135 3 3 0 0 0 OPEN
WOMEN'S ISSUES

This course explores selected concerns that women are likely to bring into a counseling situation. Topics include sex roles, gender and socialization, and their impact on women's lives.

HSV 185 3 3 0 0 0 OPEN
DISCRIMINATION AND DIVERSITY

This course will address theoretical and historical perspectives on racism, sexism and other forms of discrimination; applications to social work, culturally competent practice, change strategies, and intercultural communication strategies. Students will explore and process their own personal prejudices and biases in class. Students will learn skills to increase cultural competency and work effectively with persons from diverse backgrounds.

HSV 220 3 3 0 0 0 OPEN
INTRO TO COUNSELING THEORIES

Introduction to major counseling theories including psychoanalysis, gestalt, existential, family systems, reality therapy, behavioral therapy, and person-centered therapy. Applications in mental health and social services settings are considered.

HSV 228 3 3 0 0 0 OPEN
GROUP COUNSELING TECHNIQUES

A study of group processes, functions and leadership and how this affects the work of the human services professional. This course focuses on developing knowledge and skills related to types of groups, stages of group development, facilitation appropriate to each type of group and stage, as well as knowledge and skills related to potential problem areas within groups that may face a human services professional.

HSV 230 3 3 0 0 0 OPEN
COMMUNITY ORGANIZATION

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

HSV 255 3 3 0 0 0 OPEN
ADDICTIVE DISEASE CONCEPTS

A historical and theoretical background to current concepts of addiction. A variety of addictive behaviors are examined with special focus on psychoactive drug dependency.

HSV 286 3 3 0 0 0 OPEN
INTERVENTION THEORIES/PRAC I

Study of several management and planning theories and practices used to assess client needs, establish goals, identify resources and make appropriate referrals. Community resources are explored. Only offered Fall and Spring semesters.

Prerequisite: HSV 109, 130

HSV 288 3 3 0 0 0 OPEN
INTERVENTION THEORIES/PRAC II

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: HSV 130, 286 (with minimum grade of C). Corequisite: HSV 802

HSV 802 3 0 0 0 13 OPEN
INTERNSHIP

Supervised experience in a human services agency enables students to apply their skills and knowledge by working directly with clients. Offered Spring and Summer terms only.

Prerequisite: HSV 130, 286. Corequisite: HSV288

HSV 811 3 0 0 0 12 OPEN
PRACT: CHEM DEPEND COUNSEL I

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

HSV 812 3 0 0 0 12 OPEN
PRACT: CHEM DEPEND COUNSEL II

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

COURSE DESCRIPTIONS

HUM 116 3 3 0 0 0 CORE
ENCOUNTERS IN HUMANITIES
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 3 2 2 0 0 CORE
INTRODUCTION TO FILM
An introduction to the conventions, scope, purposes and techniques of films. Includes viewing and writing about a variety of films.

HUM 121 3 2 2 0 0 CORE
AMERICA IN THE MOVIES
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.

HUM 249 3 2 2 0 0 GENERAL
STUDY ABROAD: BRIT LIFE & CULTURE
This course is a survey of British life and culture, limited to students in the London Study Abroad Program. Taught by various professional guest lecturers, this course examines various aspects of the social fabric, including some of the main institutions, the geographic and political context, and the arts. Students will compare and contrast conditions and lifestyles of different time periods while undertaking related visits in London and throughout Britain. Course assignments, determined by the DMACC faculty member, will focus on major humanities themes and ideas as expressed in art and culture. Students may not receive credit for both HUM 249 and HIS 249.

IND 124 2 2 0 0 0 VOC/TECH
CONTROL SYSTEMS OVERVIEW
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 4 3 2 0 0 VOC/TECH
PUMP OVERHAUL AND REPAIR
Overview of internal parts, principles of operation and maintenance of positive displacement and centrifugal pumps.

IND 146 3 2 2 0 0 VOC/TECH
MECH POWER TRANSMISSION I
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 4 3 2 0 0 VOC/TECH
MECHANICAL POWER TRANS II
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

INF 110 3 3 0 0 0 VOC/TECH
FUNDAMENTAL INFORMATICS
Students explore the core principles of informatics and will gain a strong understanding of the changing role of today's informatics professional through current examples and informatics references. No matter what their major, students can use the principles learned in this course to function more effectively as workers, managers, decision-makers and organizational leaders applying today's technology.

INF 130 3 3 0 0 0 VOC/TECH
SOCIAL INFORMATICS
Introduction to key social research perspectives and literatures on the use of information and communication technologies. Topics include information ethics, relevant legal frameworks and popular and controversial uses of technology. Outlines research methodologies for social informatics.

INF 220 3 3 0 0 0 VOC/TECH
HUMAN-COMPUTER INTERACTION
The analysis of human factors and the design of computer application interfaces. A survey of current Human Computer Interaction designs with an eye toward what future technologies will allow. The course will emphasize learning HCI based on understanding implementation and testing of interfaces.
Prerequisites: INF 110 and CIS 125

INF 230 3 3 0 0 0 VOC/TECH
ORGANIZATION INFORMATICS
Examines the various needs, uses and consequences of information in organizational contexts. Topics include organizational types and characteristics, functional areas and business processes, information-based products and services, the use of and redefining the role of information technology, the changing character of work life and organizational practices, sociotechnical structures, and the rise and transformation of global information-based industries.
Prerequisite: INF 110, 130

INF 310 3 3 0 0 0 VOC/TECH
INFORMATICS SECURITY
This course will enable students to evaluate and conceptualize an area of specialization to consider the topics from their perspective of security. Vulnerabilities that combine standard hardware and software configurations will be examined because they illuminate both security and computer networks. Operating systems and file systems are examined from the perspective of access control, permissions and availability of system services.
Prerequisite: INF 110

INF 320 3 3 0 0 0 VOC/TECH
LEGAL INFORMATICS ISSUES
This course examines that set of ethical and legal problems most tightly bound to the issues of information control. The interaction and technology changes, but the core issues have remained: privacy, intellectual property, Internet law, concepts of jurisdiction, speech anonymity versus accountability and ethical decision-making in the network environment.
Prerequisites: INF 110 and INF 130

INT 124 3 3 0 0 0 VOC/TECH
INTERIOR DESIGN ANALYSIS
Emphasizes the acquisition of knowledge and experience needed to create pleasing and effective interior design. 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 3 3 0 0 0 VOC/TECH
INTERIOR DESIGN PLANNING
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

ITR 101 3 3 0 0 0 OPEN
INTRO INTERPRET & TRANSLATION
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.

ITR 102 3 3 0 0 0 OPEN
TOOLS INTERPRET & TRANSLATE
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

ITR 103 3 3 0 0 0 OPEN
FUNDAMENTALS OF INTERPRETATION
Study and practice of the basic theory and techniques of language interpretation, applied to general topics of current events. The modes of interpretation: sight translation, consecutive interpretation, simultaneous. Introduction to lexicography and vocabulary development.
Prerequisite: ITR 101, 102 or instructor permission

COURSE DESCRIPTIONS

ITR 104 3 3 0 0 0 OPEN
FUNDAMENTALS OF TRANSLATION

Study and practice of the basic theory and techniques of language translation applied to general topics of current events. Translation as product, translation as process, cultural problems in translation, denotative vs. connotative meanings, formal properties of texts, language variety and glossary development.

Prerequisites: ITR 101 and a functional proficiency in English and a second language or instructor permission

ITR 109 3 3 0 0 0 OPEN
INTERP/TRANS ETHICS I

Introduction to basic professional ethics as applied to interpretation and translation, including exploration of prior attitudes, frameworks for intellectual and ethical maturity, conflict resolution, core values, ethical decision-making and business practices. Case studies are used to develop a sense of professional ethics.

Prerequisite: Complete three required ITR courses with a minimum grade of "C"

ITR 120 1 1 0 0 0 OPEN
ETHICS FOR THE INTERP/TRANS

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

ITR 209 3 3 0 0 0 OPEN
INTERP/TRANS ETHICS II

In-depth analysis and application of interpreter and translator codes of ethics including accuracy, representation of qualifications, avoidance of conflicts of interest, professional demeanor, confidentiality, maintaining a proper role, competency, reporting ethical violations, professional development, disciplinary procedures and cultural advocacy. Model scenarios are used for developing and applying ethical judgments.

Prerequisite: ITR 109

ITR 211 3 3 0 0 0 OPEN
BUSINESS TERM & SIGHT TRANS

Identification of the origins of business terminology. Advanced sight translation training focusing on business documents. Lexicographical training in locating, understanding and using common terminology in business contexts. Intensive practice in sight translating selected business documents: applications, business correspondence, resumes and contracts.

Prerequisite: Complete the ITR required courses with a minimum grade of "C" in each course

Prerequisite or Corequisite: BUS 102 or instructor permission

ITR 213 3 3 0 0 0 OPEN
BUSINESS INTERPRETATION I

Theory and practice of consecutive interpretation as applied to common business situations. Advanced consecutive interpretation skills building: listening/prediction, analysis, note-taking, recall, positioning, situational control and interpreting. Intensive practice in consecutive interpretation in the following business situations: interviews, small group activities, lectures and negotiations.

Corequisite: ITR 211

ITR 214 3 3 0 0 0 OPEN
BUSINESS INTERPRETATION II

Theory and practice of simultaneous interpretation as applied to business conference interpretation. Advanced simultaneous interpretation skills building: listening/prediction, shadowing and decalage, note-taking, positioning, situational control, equipment use and interpreting. Intensive practice in simultaneous conference interpretation in the following business areas: finance, agriculture, insurance and biotechnology.

Prerequisite: ITR 213 or instructor permission

ITR 217 3 3 0 0 0 OPEN
BUSINESS TRANSLATION

Advanced written translation training focusing on business documents. Advanced lexicographical training in business terminology. Intensive practice in translating the following types of business documents: correspondence, financial statements, web pages and promotional materials.

Prerequisite: ITR 211 or instructor permission

ITR 231 3 3 0 0 0 OPEN
EDUCATION TERM & SIGHT TRANS

Identification of the origins of education terminology. Advanced sight translation training focusing on education documents. Lexicographical training in locating, understanding and using common education terminology in K–12 school contexts. Intensive practice in sight translating selected education documents: enrollment intake forms, notes and letters between school personnel and parents, grade/conference reports and student transcripts and Individual Education Plans (IEPs).

Prerequisite: Complete the ITR required courses with a minimum grade of "C" in each course.

Prerequisite or Corequisite: EDU 213 or instructor permission

ITR 233 3 3 0 0 0 OPEN
EDUCATION INTERPRETATION I

Theory and practice of consecutive interpretation as applied to common education situations. Advanced consecutive interpretation skills building: listening/prediction, analysis, note-taking, recall, positioning, situational control and interpreting. Intensive practice in consecutive interpretation in the following education situations: parent-teacher conferences, informational sessions, IEP meetings and disciplinary interventions.

Corequisite: ITR 231

ITR 234 3 3 0 0 0 OPEN
EDUCATION INTERPRETATION II

Theory and practice of simultaneous interpretation as applied to education interpretation. Advanced simultaneous interpretation skills building: listening/prediction, shadowing and decalage, note-taking, positioning, situational control, equipment use and interpreting. Intensive practice in simultaneous conference interpretation in the following education areas: curriculum and instruction, educational leadership and counseling, educational psychology and special education.

Prerequisite: ITR 233 or instructor permission

ITR 237 3 3 0 0 0 OPEN
EDUCATION TRANSLATION

Advanced written translation training focusing on education documents. Advanced lexicographical training in education terminology. Intensive practice in translating the following types of education documents: letters to parents, forms, school web pages and individual education plans (IEPs).

Prerequisite: ITR 231 or instructor permission

ITR 251 3 3 0 0 0 OPEN
HUM SERV TERM & SIGHT TRANS

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 documents: applications/financial affidavits, release of information forms, informational materials and notice of decision letters.

Prerequisite: Complete the ITR required courses with a minimum grade of "C" in each course.

Prerequisite or Corequisite: HSV 109 or instructor permission

ITR 253 3 3 0 0 0 OPEN
HUM SERV INTERPRETATION I

Theory and practice of consecutive interpretation as applied to common human service situations. Advanced consecutive interpretation skills building: listening/prediction, analysis, note-taking, recall, positioning, situational control and interpreting. Intensive practice in consecutive interpretation in the following human services situations: intake interviews, informational sessions, therapy sessions and interventions.

Corequisite: ITR 251

COURSE DESCRIPTIONS

ITR 254 3 3 0 0 0 OPEN
HUM SERV INTERPRETATION II

Theory and practice of simultaneous interpretation as applied to human services interpreting. Advanced simultaneous interpretation skills building: listening/prediction, shadowing and decalage, note-taking, positioning, situational control, equipment use and interpreting. Intensive practice in simultaneous interpretation situations (informational meetings, family team meetings, group therapy sessions and administrative hearings) in the following human services areas: Title XIX and related programs, child abuse interventions, substance abuse treatment and workforce development.

Prerequisite: ITR 253 or instructor permission

ITR 257 3 3 0 0 0 OPEN
HUM SERV TRANSLATION

Advanced written translation training focusing on human services documents. Advanced lexicographical training in human services terminology. Intensive practice in translating the following types of human services documents: correspondence to clients, forms, agency web pages and family team plans.

Prerequisite: ITR 251 or instructor permission

ITR 271 3 3 0 0 0 OPEN
HEALTHCARE TERM & SIGHT TRANS

Identification of the origins of healthcare terminology. Advanced sight translation training focusing on healthcare documents. Lexicographical training in locating, understanding and using frequently used legal terminology in healthcare environments. Intensive practice in sight translating the following types of healthcare documents: consents for treatment, advanced directives, beneficiary notifications and instructions for taking medication.

Prerequisite: Complete the ITR required courses with a minimum grade of "C" in each course.

Prerequisite or Corequisite: BIO 156 or instructor permission

ITR 273 3 3 0 0 0 OPEN
HEALTHCARE INTERPRETATION I

Theory and practice of consecutive interpretation as applied to common healthcare situations. Advanced consecutive interpretation skills building: listening/prediction, analysis, note-taking, recall, positioning, situational control and interpreting. Intensive practice in consecutive interpretation in the following healthcare situations: admitting interviews, well-baby visits, informational sessions and standard doctor visits.

Corequisite: ITR 271

ITR 274 3 3 0 0 0 OPEN
HEALTHCARE INTERPRETATION II

Theory and practice of simultaneous interpretation as applied to health care. Advanced simultaneous interpretation skills building: listening/prediction, shadowing and decalage, note-taking, positioning, situational control, equipment use and interpreting. Intensive practice in simultaneous interpretation situations (informational meetings, emergency room interventions, operating room procedures, mental heatlh consultations/interventions) in the following healthcare areas: infectious disease prevention/control, cardiovascular events, labor/childbirth and mental health.

Prerequisite: ITR 273 or instructor permission

ITR 277 3 3 0 0 0 OPEN
HEALTHCARE TRANSLATION

Advanced written translation training focusing on healthcare documents. Advanced lexicographical training in healthcare terminology. Intensive practice in translating the following types of healthcare documents: discharge information, degrees and diplomas, living wills and patient educational materials.

Prerequisite: ITR 271 or instructor permission

ITR 291 3 3 0 0 0 OPEN
JUDICIARY TERM & SIGHT TRANS

Identification of the origins of judiciary terminology. Advanced sight translation training focusing on court/law enforcement documents. Lexicographical training in locating, understanding and using frequently used legal terminology in judicial proceedings. Intensive practice in sight translating the following types of judicial documents: trial information and indictments, waivers of detention hearings, plea agreements and presentencing reports.

Prerequisite: Complete the ITR required courses with a minimum grade of "C" in each course.

Prerequisite or Corequisite: CRJ 130 or instructor permission

ITR 293 3 3 0 0 0 OPEN
JUDICIARY INTERPRETATION I

Theory and practice of consecutive interpretation as applied to common judiciary situations. Advanced consecutive interpretation skills building: listening/prediction, analysis, note-taking, recall, positioning, situational control and interpreting. Intensive practice in consecutive interpretation in the following judiciary situations: attorney-client interviews, proffer interviews, depositions and witness testimony.

Corequisite: ITR 291

ITR 294 3 3 0 0 0 OPEN
JUDICIARY INTERPRETATION II

Theory and practice of simultaneous interpretation as applied to judiciary interpretation. Advanced simultaneous interpretation skills building: listening/prediction, shadowing and decalage, note-taking, positioning, situational control, equipment use and interpreting. Intensive practice in simultaneous interpretation situations in the following judiciary areas: initial appearances, bail/detention hearings, change of plea hearings and sentencing hearings.

Prerequisite: ITR 293 or instructor permission

ITR 297 3 3 0 0 0 OPEN
JUDICIARY TRANSLATION

Advanced written translation training focusing on judiciary documents. Advanced lexicographical training in judiciary terminology. Intensive practice in translating the following types of judiciary documents: birth certificates, degrees and diplomas, plea agreements and wills.

Prerequisite or Corequisite: ITR 291 or instructor permission

ITR 811 3 2 0 3 0 OPEN
BUSINESS I/T INTERNSHIP

Application of the knowledge, skills and attitudes gained in the classroom by interning under qualified/certified interpreters and translators in a variety of business environments. Interns develop professional resumes, cover letters and portfolios. After securing an internship position, interns will shadow their mentors and then move into actual translation/translation assignments in appropriate monitored situations. (P/F)

Prerequisite: Minimum of C in all ITR courses.
Corequisite: ITR 209

ITR 831 3 2 0 3 0 OPEN
EDUCATION I/T INTERNSHIP

Application of the knowledge, skills and attitudes gained in the classroom by interning under qualified/certified interpreters and translators in a variety of education environments. Interns develop professional resumes, cover letters and portfolios. After securing an internship position, interns will shadow their mentors and then move into actual translation/translation assignments in appropriate monitored situations. (P/F)

Prerequisite: Minimum of C in all ITR courses.
Corequisite: ITR 209

ITR 851 3 2 0 3 0 OPEN
HUM SERV I/T INTERNSHIP

Application of the knowledge, skills and attitudes gained in the classroom by interning under qualified/certified interpreters and translators in a variety of human services environments. Interns develop professional resumes, cover letters and portfolios. After securing an internship position, interns will shadow their mentor and then move into actual translation/translation assignments in appropriate monitored situations. (P/F)

Prerequisite: Minimum of "C" in all ITR courses.
Corequisite: ITR 209

COURSE DESCRIPTIONS

ITR 871 3 2 0 3 0 OPEN
HEALTHCARE I/T INTERNSHIP

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 develop professional resumes, cover letters and portfolios. After securing an internship position, interns will shadow their mentors and then move into actual translation/translation assignments in appropriate monitored situations.

(P/F) Prerequisite: Minimum of C in all ITR courses. Corequisite: ITR 209

ITR 891 3 2 0 3 0 OPEN
JUDICIARY I/T INTERNSHIP

Application of the knowledge, skills and attitudes gained in the classroom by interning under qualified/certified interpreters and translators in a variety of judiciary environments. Interns develop professional resumes, cover letters and portfolios. After securing an internship position, interns will shadow their mentors and then move into actual translation/translation assignments in appropriate monitored situations. (P/F)

Prerequisite: Minimum of C in all ITR courses. Corequisite: ITR 209

ITR 910 3 3 0 0 0 OPEN
EMPHASIS SEMINAR

A survey of specialized fields of judiciary 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 111 or 115, bilingual or instructor permission

JOU 110 3 3 0 0 0 OPEN
INTRO TO MASS MEDIA

An introduction to mass communication in a global marketplace. Emphasizes print and electronic media, advertising and public relations, ethics and new technology.

JOU 121 3 3 0 0 0 OPEN
BASIC REPORTING PRINCIPLES

Designed to provide students with experiences in gathering, organizing and writing news stories.

JOU 125 3 1 4 0 0 OPEN
NEWSPAPER PRODUCTION

Special work in journalism. Students will produce a DMACC newspaper on one of the campuses and will gain experience in writing, copyediting, layout and design. May be repeated for three additional semesters.

JOU 163 3 3 0 0 0 GENERAL
NEWS MEDIA AND POLITICS

This course will examine the role the news media plays in politics. Focus will be on the relationship among the voting public, the mass media, policy makers and elected officials. The current or most recent election cycle will be assessed. This course is designed for both political science and journalism students. Students may not receive credit for both POL 163 and JOU 163.

JOU 165 3 3 0 0 0 OPEN
PRINCIPLES OF ADVERTISING

Course explores advertising as a tool and socio-economic force.

LIT 101 3 3 0 0 0 CORE
INTRO TO LITERATURE

Introduction to the study and appreciation of poetry, fiction and drama. Basic 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.

LIT 105 3 3 0 0 0 GENERAL
CHILDREN'S LITERATURE

Study historical and sociocultural contexts surrounding children's literature, examine current trends and issues in the field, analyze and evaluate children's literature, and develop an awareness and appreciation for the variety of literature available.

LIT 110 3 3 0 0 0 CORE
AMER LITERATURE TO MID 1800S

In-depth study of works of selected major writers (including Native American) particularly from Puritan times to 1865. Basic critical approaches are emphasized.

LIT 111 3 3 0 0 0 CORE
AMER LITERATURE SINCE MID 1800

Examines American literature from the mid-1800s through contemporary America. Emphasizes major literary works and their social and cultural contexts.

LIT 130 3 3 0 0 0 CORE
AFRICAN-AMERICAN LITERATURE

Introduction to the study and appreciation of literature written by African-American writers. A broad range of Black American authors will be presented.

LIT 142 3 3 0 0 0 CORE
MAJOR BRITISH WRITERS

Introduction to the study and appreciation of major British writers particularly from the post-Renaissance through the contemporary period. Basic critical approaches are emphasized.

LIT 166 3 3 0 0 0 CORE
SCIENCE FICTION

A survey of speculative fiction from Frankenstein to 21st-century literature. Examines major influential works in their literary, social and cultural contexts. Critical analysis is emphasized.

LIT 180 3 3 0 0 0 GENERAL
MYTHOLOGY

An introduction to world mythology. The course explores Classical, Nordic, Eastern, African and American/British myths.

LIT 185 3 3 0 0 0 CORE
CONTEMPORARY LITERATURE

Introduction to the study and appreciation of significant contemporary writers and literary movements since 1945. The relationship of current literature to society and basic critical approaches are emphasized.

LIT 188 3 3 0 0 0 CORE
DETECTIVE FICTION

Introduction to the study and appreciation of detective fiction. A literary investigation of the components of detective fiction and basic critical approaches are emphasized.

LIT 190 3 3 0 0 0 CORE
WOMEN WRITERS

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 193 3 3 0 0 0 CORE
HUMOR IN LITERATURE

Introduction to the study and appreciation of humor as literary genre. An investigation of origins, types, techniques and purposes of humor and basic critical approaches are emphasized.

MAP 110 2 1 2 0 0 VOC/TECH
MEDICAL OFFICE MANAGEMENT I

Course emphasizes administrative responsibilities. Students will use critical thinking skills to incorporate cognitive knowledge in the performance of psychomotor and affective domains including written communications, records management, mail regulations, patient accounts, bookkeeping, banking and payroll. In addition, this course includes computer skills in word processing, medical reports and business correspondence; professional applications of email and internet research, introduction to computerized medical office and HIPAA requirements.

MAP 118 4 3 2 0 0 VOC/TECH
MEDICAL OFFICE MANAGEMENT II

Study of health insurance, HMOs, Workers' Compensation, Medicare, Tri-care and Medicaid. Students will use critical thinking skills to incorporate cognitive knowledge in the performance of psychomotor and affective domains including insurance filing, CPT, ICD and HCPCS coding, posting of charges/payments both manually and with computer applications, telephone techniques, fax machine, appointment scheduling and chart audits. Students keep financial records and utilize both EMR and traditional charts to manage patient records. Psychomotor skills include inventory control, purchasing, quality control, quality improvement and management of facility, equipment and supplies. Students utilize policy, procedure and safety manuals.

Prerequisite: Grade of C or better in MAP 110

COURSE DESCRIPTIONS

MAP 129 1 0 2 0 0 VOC/TECH
MEDICAL TERMINOLOGY

Basic prefixes, suffixes and root words related to all body systems are studied. Spelling, pronunciation and definitions are included.

MAP 141 3 3 0 0 0 VOC/TECH
MEDICAL INSURANCE

This course provides a practical approach in 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 with a "C-" or better

MAP 150 3 2 2 0 0 VOC/TECH
ADV. MEDICAL BILLING/CODING

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 with a grade of "C-" or better

MAP 225 4 3 2 0 0 VOC/TECH
MED LAB PROCEDURES I

Introduction to the medical laboratory. Students will use critical thinking skills to incorporate cognitive knowledge in the performance of psychomotor and affective domains during practice of giving patient instructions, obtaining specimens, following ethical guidelines, performing routine urinalysis, immunology testing, microbiologic testing and quality control procedures. Adhering to standard precautions, disposing of biohazardous materials, performing routine maintenance of clinical equipment (microscope and centrifuge) and using methods of quality control are also covered. Includes study of OSHA, CLIA, MSDS sheets, warning labels, the metric system and laboratory personnel.

Corequisite: MAP 347

MAP 228 3 2 2 0 0 VOC/TECH
MED LAB PROCEDURES II

Students will use critical thinking skills to incorporate cognitive knowledge in the performance of psychomotor and affective domains during skill development in venipuncture, capillary puncture, hematology testing, blood chemistry analysis, EKG acquisition, patient education activities, compliance with OSHA, CLIA and quality control requirements including use and routine maintenance of standard laboratory equipment.

Prerequisite: Grade of "C" or better in MAP 225.
Corequisite: MAP 348

MAP 250 2 2 0 0 0 VOC/TECH
DIAGNOSTIC RADIOGRAPHY I

Course includes radiological principles and encourages the use of critical thinking skills to incorporate cognitive knowledge in the performance of psychomotor and affective domains during practice in the areas of film evaluation, processing techniques, positioning of patients and radiation protection of patients and workers. Introduction to digital radiography concepts. This course with MAP 252 meets the requirements for students to take the State of Iowa exam to become a "Limited Diagnostic Radiographer" in the areas of chest and extremities.

Prerequisite: MAP 225

MAP 252 2 2 0 0 0 VOC/TECH
DIAGNOSTIC RADIOGRAPHY II

Continuation of Diagnostic Radiography I. Course emphasizes the use of critical thinking skills to incorporate cognitive knowledge in the performance of taking patient films under direct supervision in the physician's office. Includes evaluation of films exposed by the student. Incorporates state-approved component on pediatric radiography.

Prerequisite: Grade of "C" of better in MAP 250
Corequisite: MAP 624

MAP 347 3 2 2 0 0 VOC/TECH
MEDICAL OFFICE PROCEDURES I

Introduction to medical office clinical skills. Students will use critical thinking skills to incorporate cognitive knowledge in the performance of psychomotor and affective domains during practice of patient communication, obtaining vitals, measurements, vision, hearing, pulmonary function testing, patient preparation, assisting physician, patient histories, documentation, medical and surgical asepsis, sterilization techniques, minor surgical procedures, compliance: OSHA, HIPAA and ADA. Patient education will include wellness, stress reduction, preventive medicine and treatment compliance with instructions according to patient needs.

Corequisite: MAP 225

MAP 348 3 2 2 0 0 VOC/TECH
MEDICAL OFFICE PROCEDURES II

Students will use critical thinking skills to incorporate cognitive knowledge in the performance of psychomotor and affective domains during practice of giving patient instructions according to their needs, including instruction for health maintenance and disease prevention, patient education, preparing and maintaining treatment areas, assisting with minor surgical procedures, wound care, hemoccult testing, Holter monitor, scheduling procedures, using insurance referral information, administering oral and parenteral (excluding IV) medications and vaccines. Procedures for emergency preparedness.

Prerequisite: Grade "C" or better in MAP 347,
Corequisite: MAP 228

MAP 423 3 3 0 0 0 VOC/TECH
PROFESSIONAL DEVELOPMENT

General competencies including professional behavior, responsibilities of the certified medical assistant in identifying and responding to issues of confidentiality as governed by HIPAA, serving as a patient advocate, performing within legal and ethical boundaries, and demonstrating knowledge of federal and state healthcare regulations. Students will incorporate critical thinking skills based on knowledge of medical specialties, basic first-aid principles, medical law and ethics. Competencies include the ability to recognize and respond to verbal and nonverbal communication and to respect individual diversity.

MAP 532 3 3 0 0 0 VOC/TECH
HUMAN BODY—HEALTH & DISEASE

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 with a "C-" or better

MAP 544 4 4 0 0 0 VOC/TECH
HUMAN BODY—HEALTH & DISEASE I

Students will incorporate critical thinking skills based on knowledge of course competencies to identify human anatomy and physiology, including the interrelationship of organ systems and homeostasis in the healthy body. Also covered will be common pathology, diagnostic aids and treatment options, including pharmacology related to each body system. Study of the interaction that occurs between systems and changes to the structure and function that occur across the life span as well as patient education procedures. Safety procedures will be reviewed with each unit. Internet research will be used for a variety of health topics. Units studied are structural organization, disease process and integumentary, skeletal, muscular, blood and circulatory. Remaining systems studied in MAP 554.

MAP 554 4 4 0 0 0 VOC/TECH
HUMAN BODY—HEALTH & DISEASE II

Students will incorporate critical thinking skills based on knowledge of course competencies to identify human anatomy and physiology, including interrelationship of organ systems and homeostasis in the healthy body. Also covered will be common pathology, diagnostic aids and treatment options, including pharmacology related to each body system. Study of the interaction that occurs between systems and changes to the structure and function that occur across the life span as well as patient education procedures. Safety procedures will be reviewed with each unit. Internet research will be used for a variety of health topics. Units studied: lymphatic, respiratory, digestive, nutrition, nervous, sensory, endocrine, urinary, reproductive, common childhood diseases and end-of-life care.

Prerequisite: Grade of C or better in MAP 544

COURSE DESCRIPTIONS

MAP 603 1 1 0 0 0 VOC/TECH
EMPLOYMENT SEMINAR

Students identify job opportunities, update resumes, compose cover letters and complete paper and online employment applications. Mock interviewing, guest speakers and application processes assist students in securing employment. Mandatory reporter training is also included.

Corequisite: MAP 624.

MAP 606 1 0 2 0 0 VOC/TECH
PROFESSIONAL DEVELOPMENT III

Course provides an opportunity for students to discuss situations that arise in the practicum experience. Weekly time sheets and activity reports are reviewed by the practicum coordinator to ensure that the student has adequate opportunity to utilize cognitive knowledge in the application of psychomotor and affective skills while working in all areas of the clinic. Oral reports are given by the students to incorporate critical thinking skills. Students are made aware of a wide variety of community services available to patients.

Corequisite: MAP 624

MAP 624 5 0 0 0 21 VOC/TECH
PRACTICUM

This course provides the student a supervised practicum in an ambulatory healthcare setting. A minimum of 280 hours is obtained. Onsite supervision is provided by an individual who has knowledge of the medical assistant profession. Students will not receive compensation/payment, monetary or otherwise, from the practicum site. The practicum experience allows the student to demonstrate critical thinking by incorporating cognitive knowledge in the performance of psychomotor and affective domain skills in the administrative, clinical and laboratory areas.

Prerequisite: Satisfactory completion of all courses in first two terms, Corequisite: MAP 252

MAP 803 3 0 0 0 12 VOC/TECH
INTERNSHIP—MEDICAL OFFICE SPEC

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 121with a "C-" or better and MAP 532 with a "C-" or better and MTR 121 with a "C-" or better and ADM 215 with a "C-" or better

MAT 034 3 3 0 0 0 COLL PREP
ARITHMETIC

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 053 4 4 0 0 0 COLL PREP
PRE-ALGEBRA

A review of arithmetic and an introduction to algebra. This is a college preparatory course designed to strengthen arithmetic skills and introduce basic concepts of algebra in preparation for MAT 063. College preparatory courses cannot be used to fulfill degree requirements.

MAT 063 4 4 0 0 0 COLL PREP
ELEMENTARY ALGEBRA

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 064 4 4 0 0 0 COLL PREP
COLLEGE PREP MATH

This is a college preparatory course for students with no algebra background or for students who need to review. It is designed to prepare students for enrollment in MAT 110 (Math for Liberal Arts) or MAT 157 (Statistics). This course includes math study skills, arithmetic skills, problem-solving, algebra and geometry. This class is not recommended for science, math or engineering majors. College preparatory courses cannot be used to fulfill degree requirements.

MAT 073 4 4 0 0 0 COLL PREP
ELEMENTARY ALGEBRA II

A review of elementary algebra along with 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 MAT 063

MAT 093 1 1 0 0 0 COLL PREP
MATH STUDY SKILLS

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 110 3 3 0 0 0 CORE
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: one year of H.S. Algebra or MAT 063

MAT 114 3 2 2 0 0 CORE
ELEMENTARY EDUCATORS MATH I

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 3 2 2 0 0 CORE
ELEMENTARY EDUCATORS MATH II

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 4 4 0 0 0 GENERAL
COLLEGE ALGEBRA

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 H.S. Algebra or MAT 073

MAT 129 5 5 0 0 0 CORE
PRECALCULUS

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 3 3 0 0 0 CORE
TRIGONOMETRY

Circular functions and their inverses, trigonometric identities, trigonometric equations, solving triangles and graphing.

Prerequisite: Two years H.S. Algebra, department permission or MAT 073

MAT 141 4 4 0 0 0 CORE
FINITE MATH

A general education course in practical mathematics for those 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

COURSE DESCRIPTIONS

MAT 148 4 4 0 0 0 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 4 4 0 0 0 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 2 2 0 0 0 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 4 3 2 0 0 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 4 4 0 0 0 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 5 5 0 0 0 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 217 5 5 0 0 0 CORE
CALCULUS II

Continuation of Calculus I. Topics include applications of integration, integration techniques, L'Hopital'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 4 4 0 0 0 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's theorem, multivariable functions, partial derivatives, directional derivatives and gradients, optimization of multivariable functions.

Prerequisite: MAT 217 or equivalent

MAT 227 4 4 0 0 0 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 772 3 3 0 0 0 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 3 3 0 0 0 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 or instructor permission

MDT 110 3 3 0 0 0 VOC/TECH
ANDROID APP DEVELOPMENT I

An initial course in developing applications for Android platforms. Explore the Android framework and the foundational components of Android applications. Utilize the Android development environment to create applications implementing common user interface features and functionality.

MDT 210 3 3 0 0 0 VOC/TECH
ANDROID APP DEVELOPMENT II

A second course in developing applications for Android platforms. Introduce features to enhance and extend the functionality of Android applications. Investigate best practices for mobile application development. Detail the distribution process to publish applications in the marketplace.

Prerequisite: MDT 110 or instructor permission

MFG 105 3 2 2 0 0 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 2 0 4 0 0 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 3 1 4 0 0 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 1 1 0 0 0 VOC/TECH
GEOMETRIC DIMENSION/TOLERANCE

A basic course explaining the GD & T system and the symbols used within it.

MFG 152 1 1 0 0 0 VOC/TECH
REL WELD BLUEPRINT—MFG TECH

Basic skills will be developed in reading welding blueprints with emphasis on welding symbols.

MFG 171 2 0 4 0 0 VOC/TECH
MANUFACTURING WELDING I

Basic skills will be developed in welding beads and buildup surfacing in the flat position, welding with oxy-acetylene equipment, and an introduction to GMAC welding.

MFG 172 3 0 6 0 0 VOC/TECH
RELATED WELDING—INDUST MAINT

A related welding course for industrial maintenance technicians. Topics include the theory and operation of welding equipment, related safety issues, metallurgy and related properties.

MFG 200 3 3 0 0 0 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, along with the social, environmental, ethical and regulatory pressures of today. Overview of physical safety, protection, and chemical, biological and mechanical hazards.

MFG 250 1 1 0 0 0 VOC/TECH
ENGINE LATHE THEORY

An introductory level course explaining the theory of the basic operation and care of an engine lathe.

Corequisite: MFG 251

MFG 251 2 0 4 0 0 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

COURSE DESCRIPTIONS

MFG 252 2 2 0 0 0 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 3 0 6 0 0 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 1 1 0 0 0 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 2 0 4 0 0 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 the safe operation and care of a milling machine in a lab environment.

Corequisite: MFG 260

MFG 270 1 1 0 0 0 VOC/TECH
GRINDERS THEORY

Theoretical explanation of procedures in surface grinding.

Corequisite: MFG 271

MFG 271 3 0 6 0 0 VOC/TECH
GRINDERS LAB

During this course, students will become familiar with basic setups as well as the safe operation and care of a surface grinder in a lab environment.

Corequisite: MFG 270

MFG 273 2 2 0 0 0 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 the safe operation and care of milling machines.

Prerequisite: MFG 260. Corequisite: MFG 274

MFG 274 3 0 6 0 0 VOC/TECH
MILL OPERATIONS LAB 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 the safe operation and care of milling machines.

Prerequisite: MFG 261. Corequisite: MFG 273

MFG 276 1 0 2 0 0 VOC/TECH
HAND & BENCH MACHINE TOOLS

Machine shop procedures including shop safety, hand tools, layout and tool grinding. Operations on drill presses, pedestal grinders and sawing machines.

MFG 290 1 1 0 0 0 VOC/TECH
HEAT TREATMENTS

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.

MFG 330 1 1 0 0 0 VOC/TECH
CNC MILL OPERATIONS THEORY

An introductory-level course explaining the theory behind the basic operation and programming of a CNC vertical machining center.

Corequisite: MFG 331

MFG 331 2 1 2 0 0 VOC/TECH
CNC MILL OPERATIONS LAB

An introductory-level course for programming and operating a CNC milling center in a lab environment.

Corequisite: MFG 330

MFG 340 1 0 2 0 0 VOC/TECH
BASIC LATHE OPERATION

Course covers setup and operation of the metal lathe, including lathe parts, materials and safety procedures.

MFG 341 1 0 2 0 0 VOC/TECH
VERTICAL MILL OPERATION

Vertical mill operation is explained and reinforced with practical experience using vertical milling machines.

MFG 350 1 1 0 0 0 VOC/TECH
CNC LATHE OPERATIONS THEORY

An introductory-level course explaining the theory behind the basic operation and programming of a CNC lathe.

Corequisite: MFG 351

MFG 351 2 1 2 0 0 VOC/TECH
CNC LATHE OPERATIONS LAB

An introductory-level course for programming and operating a CNC lathe in a lab environment.

Corequisite: MFG 350

MFG 381 3 2 2 0 0 VOC/TECH
EDM FUNDAMENTALS

Operation of both conventional and wire EDM machines. Construction of EDM electrodes.

MFG 402 4 4 0 0 0 VOC/TECH
BASIC DIEMAKING THEORY

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

MFG 403 6 0 12 0 0 VOC/TECH
BASIC DIEMAKING LAB

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

MFG 411 3 1 4 0 0 VOC/TECH
PROGRESSIVE DIE DESIGN

Hands-on drafting experience in the design, drawing, and detailing of a progressive die using computer-aided design (CAD).

Prerequisite: CAD 184. Corequisite: MFG 412

MFG 412 4 4 0 0 0 VOC/TECH
ADVANCED DIEMAKING THEORY

Complex diemaking procedures, including CAM actuated dies and exposure to cost estimating and quoting.

Prerequisite: MFG 402

MFG 413 6 0 12 0 0 VOC/TECH
ADVANCED DIEMAKING LAB

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

MFG 452 3 2 2 0 0 VOC/TECH
MOLDMAKING

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, 403

MFG 502 3 3 0 0 0 VOC/TECH
INTRO STATISTICAL PROCESS CNTL

Introduction to the concepts of variability and statistical process control. The student will develop the ability to utilize the basic SPC tools, monitor and interpret charts, and exercise statistical methods for continuous improvement.

MFG 510 3 3 0 0 0 VOC/TECH
PRACTICES—CONTINUOUS IMPROVE

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

MFG 512 3 3 0 0 0 VOC/TECH
INTRO QUALITY CONTROL MGMT.

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

COURSE DESCRIPTIONS

MFG 521 1 1 0 0 0 VOC/TECH
MEASURING DEVICES—SPC

An introduction to quality-control measuring devices, their use and application of data in Statistical Process Control.

MFG 522 3 3 0 0 0 VOC/TECH
APPL OF STATISTICAL METHODS

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

MFG 523 2 2 0 0 0 VOC/TECH
CONTROLLING MFG BUSINESS COSTS

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.

MFG 524 3 3 0 0 0 VOC/TECH
PM & DIAGNOSING MECH/ELEC SYS

Provides understanding in the concepts and methods of preventive maintenance. Includes the development of a maintenance and documentation system. Provides fundamental troubleshooting methods and concepts.

MFG 818 5 0 0 0 20 VOC/TECH
IMT INTERNSHIP

Supervised work experience with employer based upon an 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

MFG 932 4 0 0 0 16 VOC/TECH
INTERNSHIP

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

MGT 101 3 3 0 0 0 GENERAL
PRINCIPLES OF MANAGEMENT

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.

MGT 115 3 3 0 0 0 OPEN
ADMINISTRATIVE MANAGEMENT

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.

MGT 128 3 3 0 0 0 VOC/TECH
ORGANIZATIONAL BEHAVIOR

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.

MGT 130 3 3 0 0 0 OPEN
PRINCIPLES OF SUPERVISION

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, subordinates and the practice of sound personnel techniques.

MGT 145 3 3 0 0 0 OPEN
HUMAN RELATIONS IN BUSINESS

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.

MGT 147 3 3 0 0 0 VOC/TECH
LEADERSHIP DEVELOPMENT

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.

MGT 164 3 3 0 0 0 VOC/TECH
TOTAL QUALITY MANAGEMENT

The basis of this course is to provide 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.

MGT 170 3 3 0 0 0 VOC/TECH
HUMAN RESOURCE MANAGEMENT

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.

MGT 194 2 2 0 0 0 VOC/TECH
RELATIONSHIP STRATEGIES IN BUS

Includes the awareness of communication styles and how to manage successful interpersonal and organizational relationships.

MGT 248 3 3 0 0 0 VOC/TECH
SYSTEMS & INFORMATION MGMT.

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.

MGT 800 4 0 0 0 16 VOC/TECH
BUSINESS INTERNSHIP I

One semester of successful on-the-job training with a cooperating employer. Emphasis must be specific to career goals. Work experience focus includes marketing, advertising, management, fashion, visual merchandising, selling, interior design or human resource management as determined by the program of study.

(P/F) Corequisite: MGT 802

MGT 802 2 1 2 0 0 VOC/TECH
BUS. INTERNSHIP SEMINAR I

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

MGT 805 4 0 0 0 16 VOC/TECH
BUSINESS INTERNSHIP II

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

MGT 807 1 1 0 0 0 VOC/TECH
BUS. INTERNSHIP SEMINAR II

Students are exposed to areas of sales promotion through guest speakers, visual aids and discussion of business.

Corequisite: MGT 805

MKT 110 3 3 0 0 0 GENERAL
PRINCIPLES OF MARKETING

Marketing effectively and efficiently results in better customer loyalty, higher share of customers, relief from margin erosion, and higher customer satisfaction. Explore strategies used to get, keep and grow customers. Theoretical concepts blend with real-world applications in the areas of planning, decision-making, consumer behavior, ethics, product, price, distribution, promotion, service and international marketing.

MKT 115 3 3 0 0 0 OPEN
BUSINESS-TO-BUSINESS MARKETING

Presents functional methods of business-to-business marketing. Examines all forms of wholesaler service and manufacturer type marketing activities

MKT 120 3 3 0 0 0 VOC/TECH
E-MARKETING

Study of the Internet as a marketing tool. Investigation of the relevant issues and uses of Web-based marketing including influence on such traditional market mix topics as product, place, price and promotion. Focus will be on the use of technology rather than the technology itself.

COURSE DESCRIPTIONS

MKT 140 3 3 0 0 0 OPEN
SELLING

Emphasizes the "consultative style" of personal selling. Covers the importance of establishing good relationships, finding prospect needs, providing a solution to these needs, and closing a high percentage of sales interviews.

MKT 141 3 3 0 0 0 VOC/TECH
ADVANCED SELLING STRATEGIES

Explores strategies related to working effectively with high-level decision-makers. Focuses on the individual adding value to the transaction to become the supplier of choice. Examines sales automation in depth.

Prerequisite: MKT 140

MKT 145 3 3 0 0 0 OPEN
SALES MANAGEMENT

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.

MKT 150 3 3 0 0 0 OPEN
PRINCIPLES OF ADVERTISING

Provides a broad overview and hands-on application of advertising and promotion. Topics include advertising objectives and strategies, appropriate media selection and creative development for effectively reaching a target market with a promotional message.

MKT 160 3 3 0 0 0 VOC/TECH
PRINCIPLES OF RETAILING

Examines the retail business environment including an overview of retail businesses and trends, career opportunities, retail strategies, merchandising, human resources, supply chain management and customer service.

MKT 165 3 3 0 0 0 VOC/TECH
RETAIL MANAGEMENT II

A problem-solving approach to the operating principles and methods in the retail field. Management decision-making is emphasized.

Prerequisite: MKT 160

MKT 182 3 3 0 0 0 VOC/TECH
CUSTOMER RELATIONSHIP MGMT

Customer Relationship Management provides an overview of a business process used by more thanover half of all retail organizations. This course outlines the steps in the process, the technology and marketing components included, and the fundamental benefits to a business with an effective CRM program.

Prerequisite: MKT 160

MKT 184 3 3 0 0 0 VOC/TECH
CUSTOMER SERVICE

Designed to make students aware of the value and reliance that a company places on its Customer Service Representatives. Emphasis 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.

MKT 199 3 3 0 0 0 VOC/TECH
SPORTS/ENTERTAINMENT MKTG.

Exploration of the essentials of effective sports/entertainment marketing. Topics include application of the marketing principles in the sports/entertainment area, licensing issues, sponsorships and endorsements, stadium and arena marketing, broadcasting and media considerations, public policy and the unique challenges for sports/entertainment, specific products (concerts, special events, concessions, football, basketball, baseball, motor sports, etc.).

MLT 115 3 2 2 0 0 OPEN
CLINICAL LAB FUNDAMENTALS

A course designed to acquaint the student with the field of laboratory medicine. Basic lab math, testing methods and quality control are presented. This course also incorporates an introduction to blood collection and the study of common blood cells and blood cell disorders.

Prerequisite: Acceptance into the Medical Laboratory Technology program

MLT 120 3 2 2 0 0 OPEN
URINALYSIS

This course includes the study of urine formation and the methodology of determining the physical, chemical and microscopic properties of urine in normal and abnormal states. Basic lab skills, safety and quality control in urinalysis are presented.

Prerequisite: Acceptance into the Medical Laboratory Technology program.

MLT 180 1 0 0 0 4 OPEN
CLINICAL LAB PRACTICUM I

Students report to a local hospital to join the phlebotomy team to practice patient approach and to draw blood specimens.

Prerequisite: MLT 115

MLT 232 5 3 4 0 0 OPEN
ADV. HEMATOLOGY & COAGULATION

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 8 6 4 0 0 OPEN
CLINICAL CHEMISTRY

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 6 4 4 0 0 OPEN
CLINICAL MICROBIOLOGY

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 732 or equivalent; CHM 122 or equivalent and CHM 132 or equivalent

MLT 261 5 3 4 0 0 OPEN
IMMUNOHEMATOLOGY

Principles of immunohematology with the practices of blood banking are presented. ABO grouping, Rh typing and transfusion testing procedures are performed. Blood group antigens and antibodies are studied.

Prerequisite: Grade of C or better in MLT 232; MLT 270 must be taken prior to or concurrently & Serology must be taken prior to or concurrently with MLT 261. Successful completion of the following courses: BIO 164 or equivalent; BIO 732 or equivalent; CHM 132 or equivalent

MLT 270 2 1 2 0 0 OPEN
IMMUNOLOGY & SEROLOGY

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 12 0 0 0 48 OPEN
CLINICAL LAB PRACTICUM II

Students rotate through the various departments (Hematology, Chemistry, Microbiology, Blood Bank and Urinalysis) 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 2 2 0 0 0 OPEN
CLINICAL SEMINAR AND REVIEW

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

COURSE DESCRIPTIONS

MLW 440 3 2 2 0 0 VOC/TECH
BLUEPRINT READING AND LAYOUT

An introduction to blueprint reading and layout and the application of this knowledge with the use of specific tools.

MLW 441 3 2 2 0 0 VOC/TECH
MATERIAL IDENTIFICATION/USAGE

An introduction to the materials used in making architectural millwork products.

MLW 442 3 2 2 0 0 VOC/TECH
INTRODUCTION TO PORTABLE TOOLS

An introduction to the safe use and proper care and selection of power tools.

MLW 443 4 2 4 0 0 VOC/TECH
STATIONARY EQUIPMENT

The purpose of this course is to train the student in the identification, operation and the maintenance of stationary equipment.

MLW 444 3 2 2 0 0 VOC/TECH
ADVANCED EQUIPMENT TECHNIQUES

This course gives the student the opportunity to become proficient on the following equipment and associated software: CNC router operation and programming; Point-to-Point Machine Center operation and programming; Molder operation including template making, setup and maintenance; Beam saw programming, operation and maintenance; Edgebander operation programming and maintenance.

Prerequisite: MLW 440, 441, 442 and 443

MLW 445 3 2 2 0 0 VOC/TECH
MILLIMETER CABINET TECH

This course is an introduction to the rationale of cabinet-making and millwork.

Prerequisite: MLW 440, 441, 442, 443

MLW 446 4 2 4 0 0 VOC/TECH
MILLWORK TECHNIQUES

An introduction to the initial steps of applying various millwork techniques to projects.

Prerequisite: MLW 440, 441, 442, 443

MLW 447 3 2 2 0 0 VOC/TECH
INTRODUCTION TO APPLICATION

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 5 1 8 0 0 VOC/TECH
ADV MILLWORK APPLICATION I

This course will combine the skills learned from the previous courses to begin producing completed projects.

Prerequisite: MLW 444, 445, 446, 447

MLW 449 5 1 8 0 0 VOC/TECH
ADV MILLWORK APPLICATION II

This course will combine the students' previous courses to produce a completed project from beginning to installation.

Prerequisite: MLW 448

MOR 215 3 3 0 0 0 VOC/TECH
FUNERAL LAW I

A survey of the basic principles of business law as they relate to funeral service. Especially stressed are the bodies of law and the judicial system found in the United States including contracts, sales, bailment (including carriers), commercial paper, agency, employment and business organization.

Prerequisite: Admission to the Mortuary Science or Pre-Mortuary Science program

MOR 300 2 1 2 0 0 VOC/TECH
INTRODUCTION: FUNERAL SERVICE

Students will trace the history of funeral service from ancient times with an emphasis on the development of funeral practices in the United States, including current practices in funeral service and contemporary issues affecting funeral service.

Prerequisite: Admission to the Mortuary Science program

MOR 310 3 3 0 0 0 VOC/TECH
PATHOLOGY FOR MORTUARY SCIENCE

Students will be introduced to the study of the cause, course and effects of diseases upon the human body, with emphasis on ways in which tissue changes affect the embalming process. Pathologic conditions that require special treatment and terminology associated with the causes of death.

Prerequisite: Admission to the Mortuary Science program

MOR 315 3 3 0 0 0 VOC/TECH
FUNERAL LAW II

Deals with the statutory laws and practices pertaining to funeral services. The student will study the laws that govern the funeral director, the embalmer and their legal responsibilities to the consumer.

Prerequisite: Admission to the Mortuary Science program.

MOR 320 3 3 0 0 0 VOC/TECH
THANATOLOGY

Designed to acquaint the student with an overview of psychology in funeral service as applied to death, grief and mourning. Students will be taught specific counseling procedures used when counseling the bereaved family. Pre-need and after-care services will be explored.

Prerequisite: Admission to the Mortuary Science program

MOR 325 3 2 2 0 0 VOC/TECH
FUNERAL DIRECTING

Surveys the principles related to funeral directing: customs, religious and nonreligious ceremonies, human relations, relations with clergy and the professional behavior required of funeral directors. In addition, this course will give the student an understanding of the principles of the operations of a funeral home, including funeral services forms and vital statistics.

Prerequisite: Admission to the Mortuary Science program

MOR 330 3 3 0 0 0 VOC/TECH
FUNERAL MERCHANDISING

This course is designed to give the student an understanding of the various products available through funeral homes and competing industries. Topics of study will include merchandising, casket, urn and vault construction.

Prerequisite: Admission to the Mortuary Science program

MOR 335 3 3 0 0 0 VOC/TECH
EMBALMING I

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 733 or 164

MOR 336 1 0 2 0 0 VOC/TECH
EMBALMING I CLINICAL

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 733 and Admission to the Mortuary Science program. Corequisite: MOR 335

MOR 340 3 3 0 0 0 VOC/TECH
EMBALMING II

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 VOC/TECH
EMBALMING II CLINICAL

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 VOC/TECH
RESTORATIVE ART

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

COURSE DESCRIPTIONS

MOR 346 1 0 2 0 0 VOC/TECH
RESTORATIVE ART LAB

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 VOC/TECH
FUNERAL HOME OPERATIONS

This course is designed to give the student an understanding of the principles of funeral home operations. 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 the 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 360 2 2 0 0 0 VOC/TECH
THANATOCHEMISTRY

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 precautions related to the potentially harmful chemicals 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 VOC/TECH
SURVEY OF INFECTIOUS DISEASES

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 390 2 2 0 0 0 VOC/TECH
PROFESSIONAL REVIEW

Students will study the professional standards and ethics to which funeral directors adhere. Students will also be exposed to test-taking strategies for the National Board Exam and discover the licensure process for funeral directors.

Prerequisite: Completion of all Mortuary Science courses, required general education courses, business core courses and consent of program chair. Corequisite: MOR 941

MOR 941 4 0 0 12 0 VOC/TECH
PRACTICUM

Students will be assigned to a college-approved funeral home to learn procedures and policies and perform duties directly relating to the practice of funeral service as assigned by the preceptor, licensed funeral home staff and faculty members.

Prerequisite: Completion of all Mortuary Science courses, required general education courses and business core courses and consent of the program chairperson. Corequisite: MOR 390

MTR 120 3 2 2 0 0 VOC/TECH
MEDICAL TRANSCRIPTION I

Designed to prepare the student to transcribe from physician dictation. The course covers the various medical specialties and introduces the student to a variety of formats for medical materials.

Prerequisite: ADM 157 with a C- or better. Corequisite: HSC 120 and BCA 133

MTR 121 3 2 2 0 0 VOC/TECH
MEDICAL TRANSCRIPTION II

This course is a continuation of Medical Transcription I.

Prerequisite: MTR 120 with a grade of C- or better

MTR 122 3 2 2 0 0 VOC/TECH
MEDICAL TRANSCRIPTION III

A continuation of Medical Transcription II. Concentrates on transcription of case histories and physicals, discharge summaries and operative reports with a variety of dictating styles.

Prerequisite: MTR 121 with a C- or better

MUA 101 1 0 2 0 0 GENERAL
APPLIED VOICE

This course is for individual instruction in singing. Students receive weekly half-hour lessons during the Fall and Spring semesters and longer lessons during the shorter Summer semester. Students are accepted at all levels of experience. Students will study tone production, breath control, diction, literature, stage presence and general musicianship. When registering, students pay the cost of one DMACC credit plus a music lesson fee. There is no limit on the number of times a student may register for this course. However, only the most recent four semesters' credits may be used as elective credit when applying for a DMACC degree.

MUA 120 1 0 2 0 0 GENERAL
APPLIED PIANO

This course is for individual instruction in playing piano. Students receive weekly half-hour lessons during the Fall and Spring semesters and longer lessons during the shorter Summer semester. Students will study all aspects of piano technique, literature, stage presence and general musicianship. Students are accepted at all levels of experience. When registering, students pay the cost of one DMACC credit plus a music lesson fee. There is no limit on the number of times a student may register for this course. However, only the most recent four semesters' credits may be used as elective credit when applying for a DMACC degree.

MUA 147 1 0 2 0 0 GENERAL
APPLIED INSTRUMENTAL

This course is for individual instruction in brass, woodwind, string, percussion instruments and in guitar. There is a separate course section for each instrument area; students must be sure to register in the section that is designated for the instrument they want to study. Students may register for more than one section, but a Drop/Add slip that is signed by the instructor must be used when registering for more than one section. Students receive weekly half-hour lessons during the Fall and Spring semesters and longer lessons during the shorter Summer semester. Students are accepted at all levels of experience. Students will study all aspects of technique, breath control (when applicable), literature, stage presence and general musicianship. When registering, students pay the cost of one DMACC credit plus a music lesson fee. There is no limit on the number of times a student may register for this course. However, only the most recent four semesters' credits may be used as elective credit when applying for a DMACC degree.

MUS 100 3 3 0 0 0 CORE
MUSIC APPRECIATION

A survey of the development of western arts 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 CORE
MUSIC FUNDAMENTALS

This course introduces students to the elements of music as they are taught in music classes from preschool through middle school. Basic information regarding the teaching of music and an introduction to using a piano as a teaching aid are included. This course includes a significant amount of student participation both in teaching music concepts to classmates and in being students who are being taught by classmates.

MUS 106 4 3 2 0 0 GENERAL
MATERIALS OF MUSIC I

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 GENERAL
MATERIALS OF MUSIC II

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

COURSE DESCRIPTIONS

MUS 143 3 3 0 0 0 GENERAL
CONCERT CHOIR

Concert choir is open to all students; however, it is expected that those who register for this course will be able to learn the choral part to which they are assigned and to sing it correctly when singing with the whole choir. At the start of the student's first enrollment in this course, he/she must sing alone during an interview with the conductor. The goals of the interview are: 1. to start becoming acquainted; 2. to allow the conductor to hear the student's voice; 3. to allow the student and conductor to agree on the voice part to which the student will be assigned. The choir sings a wide variety of choral literature, chosen to expand the student's choral music background. Performances serve as the midterm and final exams. Registration in Concert Choir may be repeated indefinitely, but only the most recent 12 credits apply toward a DMACC degree.

MUS 202 3 3 0 0 0 CORE
WORLD MUSIC

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.

MUS 275 3 3 0 0 0 GENERAL
CHAMBER ENSEMBLE

This choral ensemble is open by audition to all DMACC students. Students who want to sing in this ensemble must arrange an audition time with the choral conductor at the start of the semester. Registration in Chamber Ensemble may be repeated indefinitely, but only the most recent 12 credits apply toward a DMACC degree. The Chamber Ensemble performs a variety of choral music, which is generally more difficult than the music performed by the Concert Choir. Prior choral performance experience is recommended, but not required for participation. Singers are required to sing in two performances per semester, which serve as the midterm and final exams.

Prerequisite: Audition with the conductor

NET 123 4 2 4 0 0 VOC/TECH
COMPUTER HARDWARE BASICS

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 3 3 0 0 0 VOC/TECH
MICROPROCESSOR INTERFACING

A study of microprocessor/microcomputer interface methods. It includes parallel interfacing using the 8255 PPI and serial interfacing using UART and USARTs. Digital-to-Analog and Analog-to-Digital converters are also examined.

Prerequisite: ELT 611, 612. Corequisite: NET 125

NET 125 4 0 8 0 0 VOC/TECH
MICROPROCESSOR INTERFACING LAB

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 2 2 0 0 0 VOC/TECH
NETWORKING TECH—MAINFRAME

To provide a technical level of understanding in the areas of mainframe networking connectivity, data communication concepts and protocol communication concepts.

NET 127 2 2 0 0 0 VOC/TECH
SERVICE & SUPPORT

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 488

NET 128 4 4 0 0 0 VOC/TECH
NETWORK COMPATIBILITY PRODUCTS

Concepts of the software and hardware used to link various computers and operating systems.

Prerequisite: NET 443, 444. Corequisite: NET 129

NET 129 2 0 4 0 0 VOC/TECH
NETWORK COMPATIBILITY PROD LAB

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 4 3 2 0 0 VOC/TECH
MICROSOFT DESKTOP OPERATE SYS

This course covers the current Microsoft curriculum for the Microsoft Windows desktop operating system. For detailed information, contact the Advanced Technology Center or www.dmacc.edu (ITNA program).

NET 144 3 2 2 0 0 VOC/TECH
DIGITAL & COMPUTER ELECTRONICS

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 3 0 6 0 0 VOC/TECH
DIGITAL & COMPUTER ELECT. LAB

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 166 3 2 2 0 0 VOC/TECH
APPLIED COMPUTER SECURITY

Basic concepts of practical computer and internet security: passwords, firewalls, antivirus software, malware, social networking, surfing the internet, phishing and wireless networks. This class is intended for students with little or no background in information technology or security. Basic knowledge of word processing required.

NET 213 4 2 4 0 0 VOC/TECH
CISCO NETWORKING

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 4 2 4 0 0 VOC/TECH
CISCO ROUTERS

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 233 4 2 4 0 0 VOC/TECH
CISCO SWITCHES

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 243 4 2 4 0 0 VOC/TECH
CISCO WIDE AREA NETWORKS (WAN)

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 233

NET 324 4 3 2 0 0 VOC/TECH
WINDOWS NETWORK MANAGEMENT

This course is designed to meet the requirements of MCSE test #70-218. It covers the basic, entry-level Windows networking materials and skills.

Prerequisite: NET 123

NET 333 3 3 0 0 0 VOC/TECH
IMP WINDOWS NETWORK INFRAS

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 3 2 2 0 0 VOC/TECH
WINDOWS DIRECTORY SERVICE

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

COURSE DESCRIPTIONS

NET 365 3 3 0 0 0 VOC/TECH
DESIGN MS ACTIVE DIR & NETWORK

This course covers the current curriculum for designing MS active directory services and network infrastructure.

Prerequisite: NET 333, NET 343, NET 664

NET 376 3 3 0 0 0 VOC/TECH
DESIGNING SECURITY FOR MS NET

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 333, 343, 664

NET 402 3 2 2 0 0 VOC/TECH
LINUX NETWORK ADMINISTRATION

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 3 2 2 0 0 VOC/TECH
LINUX SYSTEM ADMINISTRATION

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 422 3 2 2 0 0 VOC/TECH
LINUX SYSTEM PROGRAMMING

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 432 3 2 2 0 0 VOC/TECH
LINUX SYSTEM SECURITY

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 434 3 2 2 0 0 VOC/TECH
LINUX SYSTEMS & CERTIFICATION

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 3 2 2 0 0 VOC/TECH
LINUX PROGRAMMING FOR ADMIN

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 3 2 2 0 0 VOC/TECH
LINUX NETWORK PROGRAMMING

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 2 2 0 0 0 VOC/TECH
UNIX OPERATING SYSTEM

Concepts of the UNIX operating system commands. Use of shells, shell scripts, facilities and management commands.

Corequisite: NET 444

NET 444 1 0 2 0 0 VOC/TECH
UNIX OPERATING SYSTEM LAB

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 4 3 2 0 0 VOC/TECH
NETPLUS CERTIFICATION

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 2 2 0 0 0 VOC/TECH
NETWARE 4.X ADMINISTRATION

Course covers the knowledge and skills needed to perform Netware 4.x network administration or system management tasks effectively.

NET 512 3 2 2 0 0 VOC/TECH
LINUX ENTERPRISE ADMIN I

Provides knowledge and skills to perform competently in the role of Network Administrator or System Manager for NetWare 5.

Prerequisite: NET 213, 223

NET 521 2 2 0 0 0 VOC/TECH
NOVELL SYSTEM ADMINISTRATION

Work as a design team using a case company. Create a design document for Intranet Ware and create an implementation schedule.

Prerequisite: NET 512, 532

NET 532 3 2 2 0 0 VOC/TECH
LINUX ENTERPRISE ADMIN. II

Provides advanced administration skills to design, configure and administer a complex NetWare 5 network.

Prerequisite: NET 213, 223

NET 541 2 2 0 0 0 VOC/TECH
NOVELL SYSTEM PROGRAMMING

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 612 3 3 0 0 0 VOC/TECH
FUND OF NETWORK SECURITY

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: BCA113 or instructor approval

NET 623 4 4 0 0 0 VOC/TECH
NETWORK APPLICATIONS

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 2 0 4 0 0 VOC/TECH
NETWORK APPLICATIONS LAB

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 4 3 2 0 0 VOC/TECH
MICROSOFT EXCHANGE SERVER

This course covers the current Microsoft Curriculum in the Microsoft Exchange Server Series.

NET 664 5 2 6 0 0 VOC/TECH
MS WINDOWS PROF/SERVER

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 223, 628, 623

COURSE DESCRIPTIONS

NET 680 3 3 0 0 0 VOC/TECH
TCP/IP FOR NETWORKING

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 1 0 2 0 0 VOC/TECH
TCP/IP FOR NETWORKING LAB

Hands-on command manipulation of a TCP/IP network. Also includes installation and management.

Corequisite: NET 680. Prerequisite: NET 443, 444

NET 711 3 3 0 0 0 VOC/TECH
SQL DATABASE

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 333, 664, 343

NET 715 3 3 0 0 0 VOC/TECH
DATABASE SECURITY & AUDITING

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 303

NET 730 3 2 2 0 0 VOC/TECH
COMPUTER FORENSICS & INV.

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 forensics tools to uncover violations of company policy, embezzlement, email harassment, leaks of proprietary information, and criminal activity.

Prerequisite: NET 612

NET 932 3 0 0 0 12 VOC/TECH
INTERNSHIP

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 2 1 2 0 0 VOC/TECH
OPHTHALMIC PRETESTING

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, i.e., case history, visual acuity, color vision, pupil evaluation, depth perception, and the specialized testing procedures of keratometry and blood pressure measurement.

OPT 112 3 2 2 0 0 VOC/TECH
OPHTHALMIC SPECIALTY TESTING

This course provides the student experience and knowledge in the areas of special vision care procedures: subjective refraction, tonometry (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 are medications commonly prescribed for systemic conditions. Patient instruction and assistance are emphasized in laboratory sessions.

Prerequisite: OPT 110, 120, 123

OPT 120 3 2 2 0 0 VOC/TECH
BASIC OPTICAL CONCEPTS/OPTICS

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 2 2 0 0 0 VOC/TECH
OCULAR ANATOMY AND PHYSIOLOGY

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 2 1 2 0 0 VOC/TECH
OPHTHALMIC DISPENSING I

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.

OPT 132 2 1 2 0 0 VOC/TECH
OPHTHALMIC DISPENSING II

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, 120

OPT 140 3 2 2 0 0 VOC/TECH
CONTACT LENSES

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, 110, 123

OPT 803 1 0 0 3 0 VOC/TECH
PRECLINICAL

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: 110, 120

OPT 818 8 0 0 0 32 VOC/TECH
CLINICAL EXTERNSHIP

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 1 0 2 0 0 OPEN
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 1 0 2 0 0 OPEN
BADMINTON I

Introduction to basic skills (serve, clear, drop, drive and smash) and basic knowledge of game play.

PEA 117 1 0 2 0 0 OPEN
BOWLING I

Beginning skills only.

PEA 134 1 0 2 0 0 OPEN
GOLF I

Beginning skills only.

PEA 144 2 1 2 0 0 OPEN
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 1 0 2 0 0 OPEN
PHYSICAL FITNESS I

Various exercises and activities to improve physical fitness.

PEA 164 1 0 2 0 0 OPEN
SWIMMING I

Recreational swimming at Heartland Health Center. Some swimming experience expected.

PEA 174 1 0 2 0 0 OPEN
TENNIS I

Introduction to basic skills (forehand, backhand, service, and volley) and basic knowledge of game play.

COURSE DESCRIPTIONS

PEA 176 1 0 2 0 0 OPEN
VOLLEYBALL I
Beginning skills only.

PEA 184 3 1 4 0 0 OPEN
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 1 0 2 0 0 OPEN
WEIGHT TRAINING I
Introduction to basics of weight training. Emphasizes increasing physical capacity, i.e., increased muscular strength and power.

PEA 234 1 0 2 0 0 OPEN
GOLF II
Expansion of basic golf skills.
Prerequisite: PEA 134 or equivalent skill

PEA 248 2 1 2 0 0 GENERAL
ADV. STRENGTH & CONDITIONING
This course is designed to teach students advanced strength and conditioning techniques. The course will use basic principles from the National Strength and Conditioning Association. The main emphasis will be on assessment and development of training programs.
Prerequisite: PEA 187 or instructor permission

PEA 284 1 0 2 0 0 OPEN
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 1 1 0 0 0 OPEN
COACHING ETHICS, TECH & THEORY
Course covers techniques and theory of coaching, sports physiology, preparation for competition and issues in coaching.

PEC 122 1 1 0 0 0 OPEN
INTRO ANAT & PHYS FOR COACHING
This course is an introduction to basic anatomy and physiology. It provides a working framework for the potential coach to learn how to design and implement effective training programs for athletes on the basis of sport anatomy and physiology. It includes basic terms, energy system analysis, muscular fitness assessment and development of actual program design.

PEC 161 3 3 0 0 0 OPEN
SPORTS OFFICIATING
Study of the rules and officials' mechanics for high school football, basketball and baseball. Provides guidelines for students to become licensed officials in Iowa for these sports.

PEC 190 1 1 0 0 0 OPEN
SPORTS PSYCHOLOGY FOR COACHES
This course is an introduction course to basic sports psychology. This course will aid athletes, coaches and active individuals by providing goal-setting, motivation, stress management and self-confidence techniques.

PEC 191 1 1 0 0 0 OPEN
CURRENT ISSUES IN COACHING
This course will examine current issues facing our coaches. The class will look at case studies, news media and real-life scenarios in our state.

PEC 215 1 1 0 0 0 OPEN
SPORT MECHANICS FOR COACHES
This course creates an understanding of the fundamentals of sport mechanics to help potential coaches better observe, analyze and correct sport technique for increased and safer performance. Students will learn the natural forces, concepts and theories that serve as the basis for biomechanics. Knowledge gained from the course will be applied to observe athletes performing skills and make corrections accordingly.

PEH 102 3 3 0 0 0 OPEN
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 2 2 0 0 0 VOC/TECH
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 3 3 0 0 0 OPEN
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 2 2 0 0 0 GENERAL
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 3 3 0 0 0 OPEN
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 3 3 0 0 0 VOC/TECH
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 2 2 0 0 0 VOC/TECH
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 3 3 0 0 0 OPEN
PRINCIPLES—SPORTS MANAGEMENT
The foundation and principles of sports management. Theory, ethics and practice of management are discussed in relation to the fitness and sport industries.

PEH 262 3 3 0 0 0 OPEN
WELLNESS PROG/PLANNING/ORGANIZE
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 2 1 2 0 0 OPEN
LEADERSHIP TECH FITNESS PROG
Development of exercise leadership skills for a variety of activities. Includes planning and promotion as well as 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 2 0 0 0 8 OPEN
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 2 1 2 0 0 OPEN
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 OPEN
VARSITY BASEBALL

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 121 1 0 2 0 0 OPEN
VARSITY BASKETBALL, MEN

Provides experience and instruction in men's basketball. 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 122 1 0 2 0 0 OPEN
VARSITY BASKETBALL, WOMEN

Provides experience and instruction in women's basketball. 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 130 1 0 2 0 0 OPEN
VARSITY CROSS COUNTRY

Provides experience and instruction in cross country. 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 140 1 0 2 0 0 OPEN
VARSITY GOLF

Provides experience and instruction in golf. Course is designed for the varsity athlete in terms of conditioning, practice, game preparation and weight training. Limit of one 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 160 1 0 2 0 0 OPEN
VARSITY SOFTBALL

Provides experience and instruction in women's softball. 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 section 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 OPEN
VARSITY VOLLEYBALL

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

PEV 190 1 0 2 0 0 OPEN
VARSITY SPIRIT SQUAD

For men and women desiring to be basketball cheerleaders for varsity basketball season.

PHB 113 3 2 2 0 0 VOC/TECH
PRINCIPLES OF PHLEBOTOMY

An orientation course designed to give students a thorough background in blood collection, including demonstrations of and practice performing venipuncture and skin puncture techniques. This course is required for students who wish to obtain certification in Phlebotomy. Students must also enroll in the Phlebotomy Clinical course (PHB 280).

Corequisite: PHB 280

PHB 280 2 0 0 3 5 VOC/TECH
PHLEBOTOMY

Students report to a local hospital to practice patient approach and collect blood specimens from hospital patients. The 120-hour clinical includes both supervised experience and independent clinical learning experiences. Students MUST also take PHB 113.

PHI 101 3 3 0 0 0 CORE
INTRODUCTION TO PHILOSOPHY

Exploration of basic questions in epistemology, metaphysics and ethics. Emphasis on western philosophy tradition.

PHI 105 3 3 0 0 0 CORE
INTRODUCTION TO ETHICS

Comparative study of different traditional moral theories. Application of moral theories to different contemporary moral problems.

PHI 110 3 3 0 0 0 CORE
INTRODUCTION TO LOGIC

Learn to recognize and construct good arguments. Study of deduction including categorical and truth functional arguments. Study of induction. Examination of informal fallacies.

PHR 100 2 2 0 0 0 VOC/TECH
PHARM TECHNICIAN ORIENTATION

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 VOC/TECH
PHARMACY OPERATIONS I

This course simulates daily activities in the pharmaceutical practice settings. 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 102 3 3 0 0 0 VOC/TECH
PHARMACY OPERATIONS I

This course emphasizes the expanded responsibilities of pharmacy technicians. Topics include insurance processing, inventory control, investigational drugs, clinical pharmacy technician activities, chart reviews, quality assurance, herbal medication, robotics/automation, immunizations, managed care pharmacy, home care pharmacy, long term care, home monitoring units, patient compliance, physical assessment monitoring, technician organization membership and medical/surgical supplies.

Prerequisite: PHR 101 or permission of program chairperson

PHR 123 3 3 0 0 0 VOC/TECH
PHARMACOLOGY I

This course provides the practical knowledge of pharmacology, including pharmaceutical nomenclature and classification, mechanisms of drug actions, interactions, indications and contraindications, side effects, and methods of administering therapeutic agents primarily in the nervous, endocrine, skeletal, muscular, cardiovascular, respiratory and gastrointestinal systems.

Corequisite: BIO 733

PHR 124 3 3 0 0 0 VOC/TECH
PHARMACOLOGY II

This course provides the 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 135 3 3 0 0 0 VOC/TECH
PHRM CALC & COMPOUNDING

Pharmaceutical calculations and compounding will include reading, interpreting and solving calculation problems encountered in the preparation and distribution of drugs. Specific compounding topics include medication and parenteral administration: the facilities, equipment, and supplies used in admixture preparation, techniques utilized in parenteral product compounding, parenteral medication incompatibilities and quality assurance.

COURSE DESCRIPTIONS

PHR 140 1 1 0 0 0 VOC/TECH
PHARMACY LAW

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 801 2 0 0 0 8 VOC/TECH
PHARM TECHNICIAN INTERNSHIP I

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

PHR 802 3 1 0 0 8 VOC/TECH
PHARM TECHNICIAN INTERNSHIP II

This course provides an advanced-level internship rotation in a pharmacy setting, e.g., community hospitals, medical centers, intravenous home healthcare facilities, drug information centers 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

PHS 152 4 3 2 0 0 CORE
ASTRONOMY

The student is introduced to a scientific overview of stars, planets, galaxies, 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.

PHS 166 4 3 2 0 0 CORE
METEOROLOGY, WEATHER & CLIMATE

This course offers students an introduction to meteorology. Topics covered include the earth-atmosphere energy balance, temperature, humidity, clouds, precipitation, air masses, fronts, weather forecasting, severe weather and global climate change. Lecture and laboratory included.

PHY 106 4 3 2 0 0 CORE
SURVEY OF PHYSICS

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 0 CORE
GENERAL PHYSICS I

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 130 or H.S. equivalent.

PHY 161 5 4 2 0 0 CORE
GENERAL PHYSICS II

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 0 CORE
CLASSICAL PHYSICS I

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 0 CORE
CLASSICAL PHYSICS II

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 0 VOC/TECH
TECHNICAL PHYSICS

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 772 or equivalent

PNN 151 4 2 4 0 0 OPEN
FUNDAMENTALS OF NURSING

Introduces the concepts of health assessment, safety, critical thinking, pharmacology, teaching/learning and communication. Associated skills are performed in the laboratory setting.

PNN 152 4 2 2 3 0 OPEN
NURSING PRACTICE I

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: PNN 151, 153

PNN 153 2 2 0 0 0 OPEN
SUCCESS IN NURSING

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.

PNN 351 1 1 0 0 0 OPEN
PRACTICAL NURSING ROLES

Examines leadership roles and responsibilities of the Licensed Practical Nurse and individual readiness to practice nursing.

Prerequisite: PNN 151, 152, 153, PSY 121, BIO 734

PNN 605 5 3 0 6 0 OPEN
NURSING PRACTICE II

Theory and practicum in caring for clients across the life span with predictable health needs involving sexuality, reproduction, health promotion, illness prevention, pediatric etiologies, older adult etiologies, self concept, loss and end-of-life care.

Prerequisite: PNN 151, 152, 153, PSY 121, BIO 734

PNN 606 5 3 0 6 0 OPEN
NURSING PRACTICE III

Theory and practicum in caring for clients with predictable health needs involving comfort, circulation, oxygenation, nutrition, endocrine, urinary and bowel elimination alterations.

Prerequisite: PNN 151, 152, 153, PSY 121, BIO 734

POL 111 3 3 0 0 0 CORE
AMERICAN NATIONAL GOVERNMENT

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.

POL 112 3 3 0 0 0 CORE
AMER STATE & LOCAL GOVERNMENT

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.

POL 121 3 3 0 0 0 CORE
INTERNATIONAL RELATIONS

The international system is examined from perspectives of the United States, Russia and China. Emphasis is placed upon ideology, national interest, the use of power, international law and organization.

POL 125 3 3 0 0 0 CORE
COMPARATIVE GOV'T & POLITICS

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.

POL 129 3 3 0 0 0 GENERAL
POLITICS OF TERRORISM

An interactive course analyzing the philosophy and methodology of prominent extremist groups in the USA 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.

POL 163 3 3 0 0 0 GENERAL
NEWS MEDIA AND POLITICS

This course will examine the role the news media plays in politics. Focus will be on the relationship among the voting public, the mass media, policy makers and elected officials. The current or most recent election cycle will be assessed. This course is designed for both political science and journalism students. Students may not receive course credit for both POL 163 and JOU 163.

COURSE DESCRIPTIONS

POL 171 3 3 0 0 0 CORE
INTRO TO PUBLIC ADMINISTRATION
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 103 3 3 0 0 0 OPEN
INTRODUCTION TO LAW
A general introduction to the American legal system including case briefing, court structure, and civil, criminal and administrative procedure. An examination of ethical and professional practice standards applicable to the legal profession. Understanding of the roles of the judge, jury, attorney and legal assistant.

PRL 112 3 3 0 0 0 OPEN
LEGAL RESEARCH & WRITING I
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 0 OPEN
LEGAL RESEARCH & WRITING II
Advanced application of principles of legal research. Preparation of interoffice memorandums and demand letters. Out-of-state and federal law.
Prerequisite: PRL 103, 112

PRL 114 3 3 0 0 0 OPEN
ADV LEGAL RESEARCH & WRITING
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 118 1 1 0 0 0 OPEN
COMPUTERIZED LEGAL RESEARCH
Introduction to computer-assisted legal research. Training in legal research search strategies using both the Lexis and Westlaw systems.
Prerequisites: PRL 103, 112 and 113

PRL 125 3 3 0 0 0 OPEN
EVIDENCE: THEORY & PRACTICE
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

PRL 131 3 3 0 0 0 OPEN
TORTS & LITIGATION I
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

PRL 132 3 3 0 0 0 OPEN
TORTS & LITIGATION II
A continuation of Torts & Litigation I. Areas of concentration will be premise liability, family torts, defamation, governmental immunity, malpractice, and wrongful death. Advanced trial practice includes drafting of pleadings and discovery documents.
Prerequisite: PRL 131

PRL 137 3 3 0 0 0 OPEN
DEBTOR/CREDITOR LAW
Procedures in nonbankruptcy debt collection. Fundamentals of bankruptcy law and bankruptcy procedure. Examination of alternatives to formal bankruptcy proceedings.
Prerequisite: PRL 103, 112 or instructor permission

PRL 141 3 3 0 0 0 OPEN
BUSINESS & CORPORATE LAW I
A study of the fundamentals of the law of contracts, the uniform commercial code and the rights of creditors in transactions.

PRL 142 3 3 0 0 0 OPEN
BUSINESS & CORPORATE LAW II
Continuation of Business & 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

PRL 151 3 3 0 0 0 OPEN
REAL ESTATE LAW
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

PRL 161 3 3 0 0 0 OPEN
FAMILY LAW
The legal aspects of the family relationship. The rights and duties of the parties in marriage, annulment, divorce, child custody and adoption. The course will emphasize the use of domestic law forms.
Prerequisite: PRL 103, 112 or instructor permission

PRL 167 3 3 0 0 0 OPEN
PROBATE PROCEDURE
A study of wills including validity requirements, modification and revocation. Formation of trusts and the characteristics and requirements of each type. Laws of testate and intestate succession. Forms and procedures for probating an estate.
Prerequisite: PRL 103, 112 or instructor permission

PRL 169 3 3 0 0 0 OPEN
WILLS/ESTATE PLANNING/TAXATION
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

PRL 171 3 3 0 0 0 OPEN
ADMINISTRATIVE PRACTICE
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

PRL 182 3 3 0 0 0 OPEN
MEDIATION
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 and/or instructor permission

PRL 280 4 1 0 0 15 OPEN
LEGAL INTERNSHIP & ETHICS
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

PSY 102 3 3 0 0 0 GENERAL
HUMAN AND WORK RELATIONS
Emphasizes an awareness of the factors inherent in human relationships and psychological adjustment patterns of individuals and groups. Effort is made to develop the techniques of interpersonal relations and coping.

PSY 111 3 3 0 0 0 CORE
INTRODUCTION TO PSYCHOLOGY
A survey of psychology including theoretical and experimental findings and applications from areas such as neurobiology, learning, memory, personality, social, abnormal and therapy.

PSY 121 3 3 0 0 0 CORE
DEVELOPMENTAL PSYCHOLOGY
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.

PSY 140 3 3 0 0 0 GENERAL
EXPLORING MENTAL HEALTH
Explores the basic causes, manifestations and treatment of common psychological disorders. The course introduces mental illness along a continuum from functional to dysfunctional.

COURSE DESCRIPTIONS

PSY 172 3 3 0 0 0 GENERAL
STRESS & STRESS MANAGEMENT

This course provides basic instruction in understanding stress reactions, their causes and effects and the theory and application of stress management techniques. Includes theories of stress and stress reduction, physiological/psychological reactions to stress, measurement of stress reactions, and application of stress reduction.

PSY 241 3 3 0 0 0 CORE
ABNORMAL PSYCHOLOGY

An introduction to the study of abnormal behavior, with emphasis on anxiety, depression, schizophrenia and personality disorders. The course includes understanding the personal dynamics of mental disorders and biopsychosocial factors involved in assessment, etiology and treatment. Recommend PSY 111 be taken prior to this course.

PSY 251 3 3 0 0 0 CORE
SOCIAL PSYCHOLOGY

This course surveys selected topics in social psychology, including social perception, social influence, attraction, altruism, aggression, persuasion, attitude formation, group processes, and applications of research to everyday situations.

PSY 261 3 3 0 0 0 CORE
HUMAN SEXUALITY

This course provides students with definitive and precise information about the nature of human sexuality and gender roles. An interdisciplinary approach will be used to present a more comprehensive view, stressing the biological, social, and psychological aspects of sexuality and gender roles.

PSY 281 3 3 0 0 0 GENERAL
EDUCATIONAL PSYCHOLOGY

The principles of psychology applied to classroom teaching, with emphasis on such topics as development, learning, motivation, evaluation, adjustment, and educational techniques and innovations.

PSY 291 3 3 0 0 0 GENERAL
PRIN. OF BEHAVIOR MODIFICATION

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.

RCP 100 3 3 0 0 0 OPEN
INTRO TO RESPIRATORY CARE

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: BIO 733 or 164

RCP 240 4 3 2 0 0 OPEN
RESPIRATORY THERAPEUTICS

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

RCP 250 4 3 2 0 0 OPEN
CARDIO/PULMONARY THERAPEUTICS

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

RCP 360 5 5 0 0 0 OPEN
CARDIO/PULMONARY RENAL PATHOPH

An in-depth study of the normal functioning of the cardiovascular, pulmonary and renal systems emphasizing their interactions. 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 BIO 734 must be taken concurrently with or prior to this course.

RCP 400 3 3 0 0 0 OPEN
RESP THERAPY PHARMACOLOGY

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 OPEN
CARDIO/PULMONARY DIAGNOSTICS

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 with emphasis on therapeutics, and principles of polysomnography will be learned.

Prerequisite: BIO 734 or 164, RCP 360, 400

RCP 500 5 4 2 0 0 OPEN
ADVANCED RESPIRATORY THERAPY

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: BIO 734 or 164, RCP 360

RCP 601 4 3 2 0 0 VOC/TECH
NEONATAL/PED RESP THERAPY

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: BIO 734 or 164, RCP 360

RCP 700 4 2 0 8 0 OPEN
RESP THERAPY PRACTICUM I

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 will be introduced as well.

Prerequisite: RCP 250. Corequisite: RCP 360, 400

RCP 705 5 2 0 11 0 OPEN
RESP THERAPY PRACTICUM II

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 OPEN
RESP THERAPY PRACTICUM III

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. ECG and other cardiac diagnostic tests will be observed.

Prerequisite: RCP 601, 705

RCP 715 7 2 0 16 0 OPEN
RESP THERAPY PRACTICUM IV

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 introduced.

Prerequisite: RCP 500, 710, 410 must be taken concurrently with or prior to this course

COURSE DESCRIPTIONS

RCP 720 5 2 0 11 0 OPEN
RESP THERAPY PRACTICUM V

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 OPEN
RESP THERAPY MGMT & ETHICS

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 COLL PREP
COLLEGE PREPARATORY READING I

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 COLL PREP
COLLEGE PREPARATORY READING II

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 GENERAL
SPEED READING

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 81 or higher on the Reading section or instructor permission based on alternative test

REL 101 3 3 0 0 0 CORE
SURVEY OF WORLD RELIGIONS

Study of major living religions, their commonalities and contrasts. How these religions enrich human lives.

RRO 101 2 2 0 0 0 VOC/TECH
RAILCAR SAFETY

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 OPEN
THE COLLEGE EXPERIENCE

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 OPEN
STUDY STRATEGIES

Provides students with study/reading strategies for independent learning and academic success. An examination of college policies and procedures is also included.

SDV 130 1 1 0 0 0 GENERAL
CAREER EXPLORATION

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 157 1 1 0 0 0 VOC/TECH
BUILDING A PROFESSIONAL PORTFO

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 GENERAL
ELECTRONIC PORTFOLIO DEV

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 1 1 0 0 0 GENERAL
TRANSFER PLANNING

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 1 1 0 0 0 GENERAL
LIBRARY INSTRUCTION

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.

SDV 172 1 1 0 0 0 GENERAL
INTERNET RESEARCH TECHNIQUES

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

SDV 197 1 0 0 3 0 GENERAL
SAC EXPERIENCE

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

SDV 212 1 1 0 0 0 VOC/TECH
COOP CAREER SEMINAR

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 or 223 or 224 or 225 or 226 or 227.

SDV 222 1 0 0 0 4 VOC/TECH
COOP CAREER EXPERIENCE I

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) Corequisite: SDV 212

SDV 223 2 0 0 0 8 VOC/TECH
COOP CAREER EXPERIENCE II

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) Corequisite: SDV212

SDV 224 3 0 0 0 12 VOC/TECH
COOP CAREER EXPERIENCE III

See SDV 223.

(P/F) Corequisite: SDV 212

SDV 225 4 0 0 0 16 VOC/TECH
COOP CAREER EXPERIENCE IV

See SDV 223.

(P/F) Corequisite: SDV 212

SDV 226 5 0 0 0 20 VOC/TECH
COOP CAREER EXPERIENCE V

See SDV 223.

(P/F) Corequisite: SDV 212

SDV 227 6 0 0 0 24 VOC/TECH
COOP CAREER EXPERIENCE VI

See SDV 223.

(P/F) Corequisite: SDV 212

COURSE DESCRIPTIONS

SDV 288 3 3 0 0 0 GENERAL
LEADERSHIP DEVELOPMENT STUDIES

This course provides emerging and existing leaders the opportunity to explore the concept of leadership and to develop and improve their leadership skills. Students will gain a basic understanding of the concept of leadership theory while developing a personal philosophy of leadership, an awareness of the moral and ethical responsibilities of leadership and an awareness of their own ability and style of leadership.

SOC 110 3 3 0 0 0 CORE
INTRODUCTION TO SOCIOLOGY

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.

SOC 115 3 3 0 0 0 CORE
SOCIAL PROBLEMS

An analysis of the nature, dimensions, causes and characteristics of selected social problems of major interest. Consideration is given to theories, research and programs for prevention and treatment.

SOC 120 3 3 0 0 0 CORE
MARRIAGE & FAMILY

This course analyzes the sociological, physical, psychological, legal and economic aspects of the American family. Included are investigations of courtship and marriage relationships, preparation for marriage, family, parenthood, interpersonal relationships, and marital adjustment.

SOC 165 3 3 0 0 0 GENERAL
GROUP DYNAMICS

The study of group behavior, including leadership, interaction, team-building, decision-making, cooperation, cohesion, power, problem-solving, and conflict between and within groups.

SOC 200 3 3 0 0 0 CORE
MINORITY GROUP RELATIONS

This course is the study of the relations between racial, ethnic and gender categories. Focus on stereotypes, prejudices, discrimination and exploitation. Major emphasis on group relations in the United States. SOC 110 is recommended.

SOC 225 4 4 0 0 0 OPEN
SOCIAL GERONTOLOGY/APPL

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.

SOC 226 2 2 0 0 0 OPEN
ISSUES IN AGING

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.

SOC 230 3 3 0 0 0 GENERAL
JUVENILE DELINQUENCY

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

SOC 240 3 3 0 0 0 GENERAL
CRIMINOLOGY

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

SOC 282 3 3 0 0 0 GENERAL
ENVIRONMENTAL SOCIOLOGY

This course examines the relationships between society and the natural environment. It focuses on 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.

SPC 101 3 3 0 0 0 CORE
FUND OF ORAL COMMUNICATION

Explores the fundamentals of oral communication through the study and practice of interpersonal and small group communication and the composition and delivery of short speeches.

SPC 120 3 3 0 0 0 GENERAL
INTERCULTURAL COMMUNICATION

An introduction to theories and implications of intercultural communication as applied to the workplace and interpersonal relationships. Topics and activities are directed toward improving skills in intercultural competence.

SPC 126 3 3 0 0 0 CORE
INTERPERSONAL & SMALL GRP COMM

An introduction to interpersonal and group communication theories and their application in relationship development, conflict resolution, group problem-solving and group presentations.

SPC 170 3 3 0 0 0 GENERAL
PROFESSIONAL COMMUNICATION

Communication theory applied to organizational settings in such forms as interviewing, group work, conflict resolution, and public, impromptu and ceremonial speaking. Topics: organizational perspectives, leadership, power, intercultural diversity, nonverbal communication and perception.

Prerequisite: SPC 101 or 126 or permission of instructor

SRV 110 3 3 0 0 0 VOC/TECH
SURVEY DRAFTING

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

SRV 120 5 4 2 0 0 VOC/TECH
US PUBLIC LANDS SURVEY SYSTEM

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, 169

SRV 210 1 1 0 0 0 VOC/TECH
SAFETY IN THE WORK ENVIRONMENT

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.

SRV 215 2 2 0 0 0 VOC/TECH
INTRO TO LAND INFORMATION SYS

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 LIS software will be included.

SRV 220 3 1 4 0 0 VOC/TECH
BOUNDARY SURVEYING

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 169

SRV 225 2 2 0 0 0 VOC/TECH
SURVEYING ETHICS

Introduction to ethical and business issues involved in the surveying profession. Case studies and problems included.

SRV 230 3 3 0 0 0 VOC/TECH
LAND SUBDIVISION

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 169

COURSE DESCRIPTIONS

SRV 235 5 4 2 0 0 VOC/TECH
INTRODUCTION TO GEODESY

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 169

SRV 240 4 4 0 0 0 VOC/TECH
BOUNDARY LAW

This is an in-depth course dealing with evidence and procedures used in 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 169

SRV 305 5 0 0 0 20 VOC/TECH
FIELD COOP

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. Same content as CET 305. Credit will not be granted for both SRV 305 and CET 305.

SUR 130 2 2 0 0 0 VOC/TECH
INTRO TO SURGICAL TECHNOLOGY

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 VOC/TECH
FUNDAMENTALS OF SURGICAL 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 VOC/TECH
MED TERMINOLOGY FOR SURG 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 VOC/TECH
SURG PROCEDURES/TECHNIQUES I

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, otorhinolaryngologic, plastic and reconstructive, urologic and orthopedics.

SUR 202 3 3 0 0 0 VOC/TECH
SURG PROCEDURES/TECHNIQUES II

This class will compare and discuss surgical procedures and emergency cases. Specialty areas include 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 specialty 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 VOC/TECH
PHARMACOLOGY FOR THE SURG 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 identified. The student will also learn basic anesthesia concepts to function more effectively as a surgical team member.

SUR 805 5 0 0 15 0 VOC/TECH
CLINICAL PRACTICUM I

This course will develop the skills needed to work as a surgical technologist. This includes instruction with a preceptor on preoperative, intraoperative and postoperative surgical case management at the clinical facility. The student will scrub on a variety of surgical cases.

Prerequisite: SUR 130 and SUR 140 with a grade of C or better, BIO 733

SUR 810 5 0 0 15 0 VOC/TECH
CLINICAL PRACTICUM II

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 VOC/TECH
BASIC ELECTRICITY/ELECTRONIC I

For beginners to solve basic electronic problems involving voltage, resistance and power. The 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 VOC/TECH
BASIC ELECTRICITY/ELECTRON. II

For those who have an understanding of volts, ohms, amps and series parallel circuits. Topics include the difference between alternating current (AC) and direct current (DC), the AC generator, analysis of 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 VOC/TECH
ELECTRONIC CIRCUITS

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 VOC/TECH
SEMICONDUCTOR DEVICES

N-type, P-type, PN junctions, diodes, zener diodes, transistors, bipolar characteristics, field effects, thyristors, integrated circuits and opto-electronics. Should have knowledge in AC/DC electronics.

TEL 210 3 3 0 0 0 VOC/TECH
TELECOMMUNICATIONS I

Provides an overview of telecommunications and covers basic telecommunications circuits, equipment and diagnostic procedures for lines, basic key systems, and an understanding of the telecommunications industry.

Corequisite: TEL 213

TEL 213 3 0 6 0 0 VOC/TECH
INTRODUCTION TO TELEPHONY LAB

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 VOC/TECH
TELECOMMUNICATIONS II

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 VOC/TECH
TELECOM OUTSIDE PLANT

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

COURSE DESCRIPTIONS

TEL 223 3 0 6 0 0 VOC/TECH
TELECOM TRANSPORT LAB

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 213. Corequisite: TEL 220

TEL 230 4 4 0 0 0 VOC/TECH
ADVANCED TOPICS IN TELECOM

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 VOC/TECH
DATA COMMUNICATIONS

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, 213

TEL 233 3 0 6 0 0 VOC/TECH
ADVANCED TOPICS IN TELECOM LAB

Provides hands-on learning experience with broadband fiber circuits, digital multiplex systems and high speed transport devices. System configuration and diagnostics are also presented.

Prerequisite: TEL 220, 223. Corequisite: TEL 230

TEL 240 3 3 0 0 0 VOC/TECH
TELECOMMUNICATIONS MANAGEMENT

Telecom management course covers 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 3 0 6 0 0 VOC/TECH
INTERNETWORKING LAB

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. Voiceover IP, ATM, xDSL, ISDN and other technologies are used and implemented in the lab setting.

Prerequisite: TEL 230, 233. Corequisite: TEL 240

VIN 101 4 3 2 0 0 VOC/TECH
INTRO TO STARTING A VINEYARD

Introduction to selecting and preparing successful vineyard sites, economics of vineyards, and cultural practices for nonbearing vineyards.

VIN 102 4 3 2 0 0 VOC/TECH
INTRO TO BEARING VINEYARDS

Introduction to management of bearing vineyards: cultural practices, fertility and economics.

VIN 103 4 3 2 0 0 VOC/TECH
INTRO TO VINEYARD PEST MGMT

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 104 3 2 2 0 0 VOC/TECH
VIT. FOR WINE PRODUCTION

This course is an introduction to the grape and wine industry in short-season regions and worldwide. It investigates grape origins and growth habit, the vineyard factors that can impact wine quality, the process of fruit development, terrior, and grower-winery relations. Prior to taking this course, students should have a basic understanding of grape production.

VIN 121 2 2 0 0 0 VOC/TECH
PRE-PLANT DECISIONS

This course is an introduction to selecting and preparing successful vineyard sites, cultivar selection and trellis installation.

VIN 122 2 2 0 0 0 VOC/TECH
PLANTING AND EARLY CARE

This course is an introduction to vineyard training systems, economics of vineyards and cultural practices for non-bearing vineyards. Prior to taking this course, students should have a basic understanding of vineyard site selection, grape cultivars and trellis installation.

VIN 123 2 2 0 0 0 VOC/TECH
PRUNING AND CANOPY MANAGEMENT

This course is an introduction to pruning and the canopy management of bearing vineyards. Prior to taking this course, students should have a basic understanding of vineyard establishment leading up to the years of vineyard fruit production.

VIN 124 2 2 0 0 0 VOC/TECH
CROP MANAGEMENT

This course is an introduction to vineyard crop management, fertilization, harvest issues and the sale of grapes. Prior to taking this course, students should have a basic understanding of vineyard establishment leading up to the years of vineyard fruit production and an understanding of the pruning and canopy management of bearing vineyards.

VIN 125 2 2 0 0 0 VOC/TECH
PEST IDENTIFICATION

This course is an introduction to the identification of vineyard pests, the factors that affect successful infections and methods of vineyard scouting. This course will help prepare students to take the test for a commercial pesticide applicator's license. Prior to taking this course, students should have a basic understanding of vineyard establishment and the management of mature vineyards.

VIN 126 2 2 0 0 0 VOC/TECH
PEST MANAGEMENT

This course is an introduction to the different methods of controlling vineyard pests, the different products available for pest control, developing a pest control program, proper pesticide application, safety concerns, and the rules and regulations involved with pesticide application. This course will help prepare students to take the test for a commercial pesticide applicator's license. Prior to taking this course, students should have a basic understanding of vineyard establishment, management of mature vineyards and the life cycles of vineyard pests.

VIN 149 4 3 2 0 0 VOC/TECH
GRAPE AND WINE SCIENCE

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 3 3 0 0 0 VOC/TECH
INTRODUCTION TO WINE

This course presents introductory information on wine appreciation, focusing on sensory analysis, production, classification and culture of wine.

VIN 151 4 3 2 0 0 VOC/TECH
CELLAR TECH. AND OPERATIONS

This course presents winery technology and provides practical instruction on grape processing equipment.

Prerequisite: VIN 150 or Industry Experience

VIN 152 4 3 2 0 0 VOC/TECH
INTRO TO WINE SCIENCE

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 153 1 1 0 0 0 VOC/TECH
INTRO. TO WINE REGIONS

This course presents introductory information on wine regions.

Prerequisite or corequisite: VIN 150

VIN 175 2 1 2 0 0 VOC/TECH
WINE SERVICE OPERATIONS

Students will investigate the role of a wine program in a restaurant context and implement wine service principles for formal dining experiences.

Prerequisite: VIN 150 or instructor permission

VIN 185 2 2 0 0 0 VOC/TECH
INTRODUCTORY SOMMELIER PREP.

This course relates information required to assist students who are pursuing the Introductory Sommelier accreditation.

Prerequisite: VIN 150 or instructor permission

VIN 189 2 1 2 0 0 VOC/TECH
WINE MICROBIOLOGY

This course examines beneficial and spoilage unicellular organisms specifically related to wine production.

Prerequisite: BIO 187

COURSE DESCRIPTIONS

VIN 190 4 3 2 0 0 VOC/TECH
WINE SCIENCE

This course focuses on principles of enology and wine laboratory analysis, focusing on the most common evaluation methods utilized in a successful winery quality control program.

Prerequisite: CHM 122 and VIN 149

VIN 201 4 3 2 0 0 VOC/TECH
VITICULTURAL SCIENCE

Advanced concepts in the science of viticulture.

Prerequisite: VIN 149 or instructor permission

VIN 202 4 3 2 0 0 VOC/TECH
VINE HEALTH

Advanced concepts in the identification, life cycles, management and control of vineyard pests.

Prerequisite: VIN 201 or instructor permission

VIN 203 4 3 2 0 0 VOC/TECH
VINEYARD ESTABLISHMENT

Advanced concepts in vineyard establishment.

Prerequisite: VIN 201 or instructor permission

VIN 204 4 3 2 0 0 VOC/TECH
ENGINEERING IN AGRI

A study of engineering principles that relate to agricultural industries.

Prerequisite: Instructor permission

VIN 248 1 0 2 0 0 VOC/TECH
HORT/BOTANY LAB

Laboratory exercises designed to introduce the principles of botany.

Corequisite: AGH 221 or instructor permission

VIN 249 4 3 2 0 0 VOC/TECH
PLANT PHYSIOLOGY

A study of how plants function and interact with the environment.

Prerequisite: AGH 221 or instructor permission

VIN 250 3 3 0 0 0 VOC/TECH
WINE REGIONS OF THE WORLD

This course will investigate the grape varieties and wine styles produced throughout the world.

Prerequisite: VIN 150 or instructor permission

VIN 275 4 4 0 0 0 VOC/TECH
SENSORY SCIENCE

This course presents applied information on wine sensory analysis to help students recognize personal sensory biases and evaluate wine types and styles critically and scientifically.

Prerequisite: MAT 157 and VIN 150 or instructor permission

VIN 290 4 3 2 0 0 VOC/TECH
COMMERCIAL WINE PROD

This course presents applied enology and industry topics related to the production of commercial grade wines.

VIN 295 2 2 0 0 0 VOC/TECH
CERTIFIED SOMMELIER PREP.

This course relates information designed to assist students who are pursuing the Certified Sommelier accreditation.

Prerequisite: VIN 150 or instructor permission

VIN 920 3 0 0 0 14 VOC/TECH
FIELD EXPERIENCE

This course provides viticulture work experience. The student will maintain employment at a vineyard working in the production of grapes and gain experience/ proficiency conducting vineyard operations.

Prerequisite: VIN 150 or instructor permission

VIN 932 3 0 0 0 14 VOC/TECH
INTERNSHIP IN ENOLOGY

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

WAT 210 4 3 2 0 0 VOC/TECH
WASTEWATER TREATMENT: INDUS

Students will learn about industrial wastewaters and the need for industrial plant operators. They will be informed on sources of industrial wastewaters and their impacts on the environment. They will also be given instruction on sampling, monitoring of treatment processes, receiving waters, working safely and maintenance of industrial wastewater treatment plants.

WAT 300 3 2 2 0 0 VOC/TECH
WATER ANALYSIS

In this course students are introduced to basic water laboratory procedures. Students will learn about chemical names and formulas, laboratory equipment, laboratory safety and regulatory sampling. They will also perform laboratory tests and procedures for alkalinity, chlorine residual, chlorine demand, coliform, hardness, jar test, pH, temperature and turbidity.

WAT 304 4 3 2 0 0 VOC/TECH
WATER TREATMENT I

This course explores the fundamentals of water treatment and basic operational procedures. Students learn regulatory monitoring concerns, sediment control, how to operate and maintain sedimentation, coagulation, flocculation, fluoridation and disinfection. Students are also taught iron and manganese removal and filtration processes.

WAT 305 4 3 2 0 0 VOC/TECH
WATER DISTRIBUTION SYSTEMS

This course will provide students with theory and a practical understanding of the operation and maintenance of water distribution systems. Covers the role of a water distribution system operator, storage facilities, distribution system facilities, and the operation and maintenance of these facilities. Students will also learn about water quality, disinfection, safety and administrative responsibilities.

WAT 306 4 3 2 0 0 VOC/TECH
WASTEWATER COLLECTION SYSTEMS

In this course students will learn the duties for the operation and maintenance of wastewater collection systems. Course information will include inspection, cleaning, testing, repair and safety procedures of collection systems. Students will also be taught about lift stations, equipment maintenance, sewer renewal, administrative duties and systems organization.

WAT 307 4 3 2 0 0 VOC/TECH
WASTEWATER TREATMENT I

This course explores the fundamentals of wastewater treatment and basic operational procedures. Students learn the duties of a treatment plant operator, why we treat wastes and the operations of wastewater treatment facilities. Students are also taught preliminary treatment, sedimentation and flotation, trickling filters, rotating biological contactors, activated sludge, waste treatment ponds, disinfection and chlorination.

WAT 308 3 2 2 0 0 VOC/TECH
WASTEWATER ANALYSIS

During this course students will perform wastewater laboratory procedures and chemistry. They will study vocabulary, equipment, techniques, hazards, hygiene and accident prevention. They will also learn correct sampling and testing techniques.

WAT 311 4 3 2 0 0 VOC/TECH
WASTEWATER TREATMENT II

Students in this course will be trained to safely operate and maintain conventional activated sludge plants. They will learn about sludge digestion, handling of solids and the reclamation and reuse of effluent discharge. Information on computer applications, correct laboratory procedures and chemistry for operators will also be taught. Students will be able to analyze and present data, keep records and write reports, and learn administrative duties in treatment plants.
Prerequisite: WAT 307

WAT 312 4 3 2 0 0 VOC/TECH
WATER TREATMENT II

In this course students will be trained in the practical aspects of operating and maintaining water treatment plants, including safe practices and procedures. Information on drinking water regulations, iron and manganese control, fluoridation, softening, trihalomethanes, demineralization, handling and disposal of process wastes, maintenance, instrumentation and advanced laboratory procedures will be covered. Administrative procedures will also be explained, including budgeting, setting rates, recordkeeping, personnel administration, public relations and emergency planning.

Prerequisite: WAT 304

WAT 932 3 0 0 0 12 VOC/TECH
INTERNSHIP

Students will gain practical experience through on-the-job training at an instructor-approved water or wastewater facility.

Prerequisite: Instructor permission

COURSE DESCRIPTIONS

WDV 101 3 2 2 0 0 VOC/TECH
INTRO HTML AND CSS

Introduces current standards of HTML, XHTML and CSS. Students will code HTML and CSS web pages, test them in browser and publish them to a web server. Page layouts will use various CSS techniques. Tables and forms will be used as well. A current version of Dreamweaver will be used to build more complex pages.

WDV 131 3 2 2 0 0 VOC/TECH
INTRO PHOTOSHOP AND FIREWORKS

This course introduces students to the use of digital imagery for websites and other electronic media. Students learn to use Adobe Photoshop and Fireworks to create, modify and enhance images, and create exciting graphics for digital media use.

WDV 151 3 2 2 0 0 VOC/TECH
INTRO WEB DESIGN

This course introduces design principles and concepts as they relate to web design. Students will complete basic design projects, focusing on the main principles of design, color theory and basic typography.

WDV 221 3 2 2 0 0 VOC/TECH
INTRO JAVASCRIPT

Introduces the student to the concepts of the Javascript programming language and its related logic structures within an Internet browser. Will discuss the concepts of Dynamic HTML, which is the interaction of Javascript, Cascading Style Sheets (CSS), HTML and the Document Object Model. Students will create dynamic forms, change content, and perform client-side, user-driven activities within a web page application.

Prerequisite: WDV 101 or CIS 204 or instructor permission

WDV 245 3 2 2 0 0 VOC/TECH
CONTENT MANAGEMENT SYSTEMS I

This hands-on course teaches how to plan, design and produce complete, commercially oriented website applications using professional Open Source database-driven web content management software. Using an industry-standard web development server, students will learn to install, modify and maintain CMS software such as WordPress and Joomla. Site themes or "skins" will be created and modified using Dreamweaver.

Prerequisite: WDV 101 or CIS 204 or instructor permission

WDV 261 3 2 2 0 0 VOC/TECH
INTRO FLASH

Provides an introduction to a current version of Adobe Flash software. Students will explore the Flash program and will become familiar with the layout and interface. Students will learn how to draw, import, layout, modify and animate content within Flash.

WDV 321 3 3 0 0 0 VOC/TECH
ADVANCED JAVASCRIPT

Use Javascript to implement client-side form data validation, browser capability and motion as well as other dynamic content changes. Create dynamic cross-browser compatible, user-driven presentation and content with Javascript and CSS.

Prerequisite: WDV 221 or instructor permission

WDV 331 3 2 2 0 0 VOC/TECH
DREAMWEAVER APPLICATIONS

Introduces the advanced features of a current version of Dreamweaver. This will include site management tools, creation and use of templates for layout control, implementation of Sprys as well as other features. A website application will be built using Dreamweaver's built-in database connectivity to provide server-side content delivery.

Prerequisite: WDV 221 or instructor permission

WDV 341 3 3 0 0 0 VOC/TECH
INTRO PHP

This course will introduce PHP as a server-side scripting language. It will introduce the MySQL database and the SQL language for use with PHP. Students will embed PHP and SQL code into HTML pages and publish them to a PHP-enabled server. Students will create a web application that will allow for user login pages, as well as add, delete and update database content to web pages.

Prerequisite: WDV 101 or CIS 204 or instructor permission

WDV 351 3 3 0 0 0 VOC/TECH
WEBSITE APPLICATION COMPONENTS

Students will learn how to implement a variety of third-party components into a website application. This includes, but is not limited to, videos, audios, RSS feeds, forums, blogs, bulletin boards, widgets, E-commerce components, XML, CGI scripts and form-handling components.

Prerequisite: WDV 221 or instructor permission

WDV 441 3 3 0 0 0 VOC/TECH
ADVANCED PHP

Expands the use of PHP, MySQL and SQL to create a functional Content Management System (CMS). Will include advanced functionality such as shopping carts, search, payment processing, reporting, AJAX, etc.

Prerequisite: WDV 341 or instructor permission

WDV 445 3 3 0 0 0 VOC/TECH
CONTENT MANAGEMENT SYSTEMS II

Hands-on course uses industry standard Open Source content management system (CMS) software to build and deploy commercially oriented websites on an Internet server. Software could include Joomla, Drupal, Wordpress or other currently available software.

Prerequisite: WDV 245 or instructor permission

WDV 490 3 3 0 0 0 VOC/TECH
WEBSITE APPLICATIONS SEMINAR

Students will build, update or modify new or existing commercially oriented website applications. Projects will include project planning, time estimating, group projects, version control and commercial web host interfaces.

Prerequisite: Instructor permission

WDV 495 3 3 0 0 0 VOC/TECH
EMERGING TECHNOLOGIES SEMINAR

Explore the constant changes that occur rapidly in this field. Examine and discuss how current and future technologies may affect current website applications and future development. Recommended for those with a strong diverse background, interest and/or experience with website applications. Prerequisite: Instructor permission

WDV 521 3 3 0 0 0 VOC/TECH
INTRO AJAX

Student will plan and develop advanced client-side applications. Ajax and related frameworks will be introduced and used to create rich Internet applications. Applications will communicate with server applications using Ajax technologies including Javascript, XML and SOAP.

Prerequisite: WDV 321 or instructor permission

WDV 541 3 3 0 0 0 VOC/TECH
PHP SEMINAR

Explore the continuing changes and updates with PHP. Examine and discuss how current and future PHP technologies may affect current website applications and future development. Recommended for those with a strong diverse background, interest and/or experience with PHP and website applications.

Prerequisite: WDV 441 or instructor permission

WDV 932 3 0 0 0 12 VOC/TECH
WEB DEVELOPMENT INTERNSHIP

Work-related opportunities provide significant experience for web developers. Students who are working or have an opportunity to work in a position that primarily uses web development knowledge and skills may use this course. Students are expected to find their own internship opportunity.

Prerequisite: Instructor permission

WEL 111 3 3 0 0 0 VOC/TECH
WELDING BLUEPRINT READING

The basic skills needed to read shop drawings (including welding symbols) will be learned.

Prerequisite: MAT 772

WEL 120 2 0 4 0 0 VOC/TECH
OXY FUEL WELDING/CUTTING

Skills will be developed in oxy-acetylene welding, cutting and repair. Safety is emphasized.

WEL 150 2 0 4 0 0 VOC/TECH
ARC WELDING I (SMAW)

Skills will be developed in welding beads and buildup surfacing in the flat position. Safety is emphasized.

WEL 165 3 0 6 0 0 VOC/TECH
ARC WELDING II (SMAW)

Skills will be developed in welding multiple pass tee fillet welds in the horizontal position. Safety is emphasized.

Prerequisite: WEL 150

COURSE DESCRIPTIONS

WEL 166 2 0 4 0 0 VOC/TECH
ARC WELDING III (SMAW)
Skills will be developed in welding corner fillet joints, weld arounds, and sheet metal weldments in the flat positions. Safety is emphasized.
Prerequisite WEL 165

WEL 167 3 0 6 0 0 VOC/TECH
ARC WELDING IV (SMAW)
Skills will be developed in welding beads, buildup surfacing, and fillet weldments in the horizontal position. Safety is emphasized.
Prerequisite: WEL 166

WEL 168 3 0 6 0 0 VOC/TECH
ARC WELDING V (SMAW)
Skills will be developed in welding fillet joints in the vertical downhill and vertical uphill position. Safety is emphasized.
Prerequisite: WEL 167

WEL 169 2 0 4 0 0 VOC/TECH
ARC WELDING VI (SMAW)
Skills will be developed in welding fillet joints in the overhead position. Air carbon arc gouging and plasma arc cutting will also be practiced. Safety is emphasized.
Prerequisite: WEL 168

WEL 176 2 0 4 0 0 VOC/TECH
ADV ARC WELDING I (SMAW)
Skills will be developed in welding and testing on vee groove joints in the flat and horizontal positions limited SMAW. Safety is emphasized.
Prerequisite: Welding diploma required

WEL 177 3 0 6 0 0 VOC/TECH
ADV ARC WELDING II (SMAW)
Skills will be developed in welding and testing on vee groove joints in the vertical and overhead positions limited SMAW.
Prerequisite: Welding diploma required

WEL 181 2 0 4 0 0 VOC/TECH
GAS METAL ARC WELDING
Practical application in the use of the gas metallic arc welding process, including submerged arc and flux cored arc. Safety is emphasized.

WEL 190 2 0 4 0 0 VOC/TECH
GAS TUNGSTEN ARC WELDING
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 236 2 0 4 0 0 VOC/TECH
ADVANCED ARC WELDING I (GMAW)
Skills will be developed in welding and testing on vee groove joints in the flat and horizontal positions limited GMAW.
Prerequisite: Welding diploma required

WEL 237 3 0 6 0 0 VOC/TECH
ADVANCED ARC WELDING II (GMAW)
Skills will be developed in welding and testing on vee groove joints in the vertical and overhead positions limited GMAW.
Prerequisite: Welding diploma required

WEL 238 2 0 4 0 0 VOC/TECH
ADV ARC I GMAW UNLIMITED
Skills will be developed in welding and testing on vee groove joints in the flat and horizontal positions unlimited GMAW.
Prerequisite: Welding diploma required

WEL 239 3 0 6 0 0 VOC/TECH
ADV ARC II GMAW UNLIMITED
Skills will be developed in welding and testing on vee groove joints in the vertical and overhead positions unlimited GMAW.
Prerequisite: Welding diploma required

WEL 241 4 1 6 0 0 VOC/TECH
FABRICATION I
Students will learn basic introductory skills to safely and correctly operate fabrication layout equipment and hand tools. They will understand different material types, shapes and applications for each.
Prerequisite: Welding diploma

WEL 242 4 1 6 0 0 VOC/TECH
FABRICATION II
Students will learn to safely operate fabrication equipment to produce four specific projects to the specified standards.
Prerequisite: WEL 241

WEL 246 2 0 4 0 0 VOC/TECH
ADV ARC WELDING I (GMAW) ALUM
Skills will be developed in welding and testing on vee groove joints in the flat and horizontal positions limited GMAW Aluminum.
Prerequisite: Welding diploma required

WEL 247 3 0 6 0 0 VOC/TECH
ADV ARC WELDING II (GMAW) ALUM
Skills will be developed in welding and testing on vee groove joints in the vertical and overhead positions limited GMAW Aluminum.
Prerequisite: Welding diploma required

WEL 248 2 0 4 0 0 VOC/TECH
ADV ARC I GMAW ALUM UNLIMITED
Skills will be developed in welding and testing on vee groove joints in the flat and horizontal positions unlimited GMAW Aluminum.
Prerequisite: Welding diploma required

WEL 249 3 0 6 0 0 VOC/TECH
ADV ARC II GMAW ALUM UNLIMITED
Skills will be developed in welding and testing on vee groove joints in the vertical and overhead positions unlimited GMAW Aluminum.
Prerequisite: Welding diploma required

WEL 255 4 1 6 0 0 VOC/TECH
WELDING INSPECTION
Students will become familiar with welding codes, how to interpret them, NDT (non-destructive testing) and preparation for taking the American Welding Society's Certified Welding Inspector examination. This course also meets the requirements for educational certification for NDT and conforms to ASNT: SNT-TC-1A.
Prerequisite: Completion of Welding program/diploma

WEL 276 2 0 4 0 0 VOC/TECH
ADV ARC I SMAW UNLIMITED
Skills will be developed in welding and testing on vee groove joints in the flat and horizontal positions unlimited SMAW.
Prerequisite: Welding diploma required

WEL 277 3 0 6 0 0 VOC/TECH
ADV ARC II SMAW UNLIMITED
Skills will be developed in welding and testing on vee groove joints in the vertical and overhead positions unlimited SMAW.
Prerequisite: Welding diploma required

WEL 282 2 0 4 0 0 VOC/TECH
ADVANCED ARC WELDING I (FCAW)
Skills will be developed in welding and testing on vee groove joints in the flat and horizontal positions limited FCAW.
Prerequisite: Welding diploma required

WEL 283 3 0 6 0 0 VOC/TECH
ADVANCED ARC WELDING II (FCAW)
Skills will be developed in welding and testing on vee groove joints in the vertical and overhead positions limited FCAW.
Prerequisite: Welding diploma required

WEL 284 2 0 4 0 0 VOC/TECH
ADV ARC I FCAW UNLIMITED
Skills will be developed in welding and testing on vee groove joints in the flat and horizontal positions unlimited FCAW.
Prerequisite: Welding diploma required

WEL 285 3 0 6 0 0 VOC/TECH
ADV ARC II FCAW UNLIMITED
Skills will be developed in welding and testing on vee groove joints in the vertical and overhead positions unlimited FCAW.
Prerequisite: Welding diploma required

WEL 303 3 0 6 0 0 VOC/TECH
PIPE WELDING/SMAW
Welding practice and testing on open grove 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

COURSE DESCRIPTIONS

WTT 103 3 3 0 0 0 VOC/TECH
INTRODUCTION TO WIND ENERGY

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.

WTT 114 5 4 2 0 0 VOC/TECH
FIELD TRAINING & PROJECT OPER

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 VOC/TECH
WIND TURBINE MECHANICAL SYS

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 VOC/TECH
POWER GENERATION/TRANSMISSION

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, 134

WTT 223 3 2 2 0 0 VOC/TECH
AIRFOILS AND COMPOSITE REPAIR

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 VOC/TECH
DATA ACQUISITION & ASSESSMENT

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, 134, 141, 119, WTT 216, 245

WTT 245 4 2 4 0 0 VOC/TECH
ELECTRICAL PRACTICAL APP

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, 134, WTT 133

FACULTY AND STAFF

ABBOTT, MATTHEW A., 2007, Biology. B.A., Grinnell College; Ph.D., Iowa State University

AGINSKY, VERA, 2005, English as a Second Language. M.A., Minsk Pedagogical University; M.A.T., Drake University; Ph.D., Middlebury College

AGYEMAN, AHMED, 2004, Academic Advisor. B.S., M.Ed., Iowa State University

ALBERHASKY, MATTHEW J., 2008, English. B.A., M.A., Iowa State University

ALBERTSON, MARCIA, 1974, P.C. Applications. B.A., University of Northern Iowa

AMDAHL, MAYNARD, 1978, Tool & Die. Diploma, Dunwoody Industrial Institute; Certificate, U.S. Department of Labor Journeyman Tool & Diemaker

AMLING, STACY L., 2006, Spanish. B.A., University of Northern Iowa; M.A., M.A., Michigan State University

ANDERSON, GARRETT L., 2007, Electronics/Information Technology. A.A.S., Des Moines Area Community College

ANDERSON, JENNIFER A., 2010, Health Occupations. R.N., Des Moines Area Community College

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

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; LISW

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/Electrical Trades. A.A., National Institute of Technology; Electrical License/Iowa

BAKARI, ROSENNA, 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

BARRETT, LARRY, 1988, Respiratory Therapy. A.A.S., Des Moines Area Community College; B.S., M.Ed., Iowa State University

BARTH, VICKIE R., 2007, Director, Nursing Education. Diploma, Allen School of Nursing; B.S.N., University of Dubuque; M.S.N., University of Iowa; Ed.D., University of Northern Iowa

BECKER, AMANDA, 2001, Nursing. B.S.N., Allen College; M.S.N., Drake University

BELL, DEBORAH P., 1987, Dental Assistant. A.A., A.S., Des Moines Area Community College

BELL III, LEONARD, 2005, Gateway to College Specialist. B.L.S., Iowa State University

BELTRAME, DAVE, 2004, Graphic Technologies. Diploma, Des Moines Area Community College; RIT; PIA/GATF

BENDY, STEVE J., 2000, Graphic Design. B.F.A., B.S.Ed., University of Nebraska

BENNETT, KELLI A., 2004, Program Coordinator, Iowa DOT. A.A., Des Moines Area Community College

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

BISHOP, PATRICK J., 1995, Diesel. A.A.S., A.S., Des Moines Area Community College; Iowa State University

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

BOETEL, KARLA V., 2006, Culinary Arts. A.A.S., Des Moines Area Community College; B.P.S., The Culinary Institute of America; C.E.C.

BOLDT, JACLYN L., 2008, Student Employment Specialist. B.A., Waldorf College, Buena Vista University

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

BRAND, SONJA K., 1995, Academic Achievement Center. B.S., Northwest Missouri State University

BREND, JOSEPH, 1998, Building Trades.

BROWN, LORI M., 2005, Dental Hygiene. B.S., University of Iowa; M.S., Drake University; RDH

BROWN, REBECCA F., 2002, Business Administration. B.S., Meredith College; M.B.A., Bellevue University

BRUINS, 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

BURKHARDT, 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

BURRELL, J. KATE, 2011, Psychology. A.A., Southwestern Community College; B.S., M.S., Fort Hays State University

BUSH, KRISTINE L., 2008, Nursing. B.S.N., Central Missouri State University; M.S.N., Drake University

CALKIN, JEFREY B., 1988, Automotive Technology

CAMPBELL, KAREN J., 1999, Medical Laboratory Technology. B.A., M.A.T., Drake University

CAREY, PATRICIA A., 2009, Nurse Aide. A.D.N., Des Moines Area Community College

CAREY, PHILIP J., 2004, Hospitality Careers. A.S., Des Moines Area Community College; B.S., Upper Iowa University; C.E.C.; C.C.E.

CARLSON, LISA L., 2007, Coordinator, Program Development. 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; Ph.D., Iowa State University; NCC

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., M.B.L., William Penn University

CERFOGLI, FRANK M., 2007, Veterinary Technology. B.A., University of Northern Iowa; D.V.M., Iowa State University

CHAMPLIN, KATHERINE A., 2010, Early Childhood Education. B.A., St. Ambrose University; M.A.E., University of Northern Iowa

CHOPARD, LOIS, 1987, Academic Advisor. B.A., University of Northern Iowa

CHRISTENSEN, KATHY R., 2008, Instructional Assistant. B.A., Buena Vista University

CHRISTIAN, AMY M., 2011, Lab Coordinator. A.A., Des Moines Area Community College; B.A., University of Northern Iowa

CIPALE, DEBORAH J., 2005, Coordinator, Nursing Resource Lab. R.N., Iowa Methodist School of Nursing; B.S.N., Grand View College; M.S.N., Nebraska Methodist College

COCHRAN, MARIA E., 2007, English. B.A., Moscow State Pedagogical University; M.A., Drake University; Ph.D., Iowa State University

CONIS, PETER J., 2000, Sociology/Criminal Justice. A.A., Des Moines Area Community College; B.S., M.S., Ph.D., Iowa State University

CONNOLLY, TARA K., 2011, Executive Director, DMACC Foundation. B.A., Villanova University; M.N.M., Regis University

CONWAY, ANNA L., 2007, Speech. Sp.D., International University, Moscow; M.A., Ed.D., University of Northern Iowa

COON, HOLLIE L., 2007, Disability Services Coordinator. B.A., University of Northern Iowa; M.S.E., Drake University; Ph.D., Capella University

FACULTY AND STAFF 2012–2013

COOPER, MARGARET H., 2007, Nursing. R.N., Iowa Lutheran Hospital School of Nursing; B.S.N., Grand View College; M.S., Drake University; M.S.N., University of Iowa

CORY, CYNTHIA, 1980, Nursing. B.S.N., University of Iowa; M.S.N., Clarkson College

DAMERON, APRIL J., 2001, Academic Advisor. B.A., Simpson College

DANNER, BRECK B., 2007, Coordinator, Alumni Affairs and Fund Development. B.A., University of Northern Iowa; M.Ed., Iowa State University

DARLING, JONATHAN D., 2008, HVAC. A.A.S., Des Moines Area Community College

DAVENPORT, RITA L., 2002, Counselor. B.A., Central College; M.S.E., University of Wisconsin, Platteville

DAWSON, RICK E., 2004, Associate Provost, West Campus. A.A., Iowa Central Community College; B.A., Buena Vista College; M.S., Northwest Missouri State University; University of Iowa

DAY, ANN M., 2000, Nursing. B.S.N., M.S.N., University of Iowa

DEAL, TERRI L., 2001, Dental Assistant. A.A., Des Moines Area Community College

DEHART, REBECCA L., 2011, Mathematics. B.S., Milligan Christian College; M.Ed., Ph.D., Iowa State University; Sp.Ed., Drake University

DENSON, ROBERT J., 2003, President/CEO. B.S., M.S., Iowa State University; J.D., University of Florida

DICKINSON, MARC A., 2008, English. B.A., M.A., University of Northern Iowa; M.F.A., Colorado State University

DICKSON, NANCY K., 1995, Director, Scheduling & Course Implementation. B.A., Western Illinois University; University of Illinois; North Dakota State University

DICKSON, VALREE M., 1992, Nursing. Diploma, Marshalltown Community School of Nursing; B.S.N., Grand View College; M.S.N., Drake University

DILLEY, CRAIG A., 2008, Biology/Chemistry. B.A., University of Nevada, Las Vegas; B.S., M.S., Ph.D., Iowa State University

DORAN, JOHN M., 1980, Mathematics. B.A., University of Northern Iowa; M.A., San Diego State University

DORON, BONNIE B., 1994, English. A.A., Colby-Sawyer College; B.A., M.A., East Texas State University; Ph.D., Texas Woman's University

DOSE, JAMES E., 2007, Academic Achievement Center. A.A., Clinton Community College; B.A., University of Northern Iowa; M.S.M., Iowa State University

DOUD, TIM J., 1999, Agribusiness. B.S., Iowa State University

DOUGLAS, LAURA L., 2005, Provost, Urban Campus. B.A., University of Southern Maine; M.A., School for International Training; M.A., Ph.D., University of Michigan

DOWDELL HOMMERDING, KATHERINE, 2001, Psychology. B.A., University of Pennsylvania; M.S., University of Pittsburgh

DOWIE, LORI K., 1986, Hospitality Careers. A.A.A., Des Moines Area Community College

DREESMAN, LISA A., 2008, Librarian/Media Specialist. B.A., M.L.S., University of Northern Iowa

DUDGEON, JOANNE K., 2010, History/Geography. A.A., Des Moines Area Community College; B.S., M.A., Iowa State University

DUERSON, BRAD K., 2006, Business Administration/ Economics. B.S., Brigham Young University, Hawaii; M.B.A., Utah State University

DUNN, ERIC N., 2012, Fire Science. B.S., Columbia Southern University

DURLAM, JODI A., 2008, Surgical Technology. A.D.N., Des Moines Area Community College; C.S.T.

DYKE, BRADLEY F., 2002, Political Science/ History. B.A., B.A.Ed., University of Missouri, Kansas City; M.A., University of Kansas

EASTER, WILLIAM J., 1994, Hospitality Careers. A.A.S., Des Moines Area Community College; B.A., New England Culinary Institute; C.E.C.; C.C.E.

ECKERMAN, CURTIS M., 2005, Biology. B.S., Texas A&M University; M.S., University of Texas at El Paso

ELLISON, MELANIE A., 2006, Academic Advisor. B.A., Simpson College; M.A., Iowa State University

EMMERSON, JANET E., 2000, Director, Institutional Research. B.F.A., University of Wisconsin, Milwaukee; M.Ed., Ph.D., Iowa State University

ENENBACH, VALERIE, 2002, Academic Advisor. B.A., Briar Cliff University; M.S.S., US Sports Academy

ENRIGHT, DONALD L., 2011, Coordinator, Veterans Services. A.A., Des Moines Area Community College; B.S., Iowa State University

ENTZ, MARY J., 1992, Provost, Newton Campus. PhD, Iowa State University

ERICKSON, MICHELLE S., 2006, Medical Lab Technology. Medical Technology, Mercy School of Medical Technology; B.S., Evangel College

ERICKSON, RON, 1993, Network Systems Analyst 2. A.A.S., Iowa State University

ERKKILA, RACHEL R., 2007, Registrar. A.A., Bethany Lutheran College; B.A., Augsburg College; M.S., Metropolitan State University

FAIDLEY, DWAYNE D., 2006, Agribusiness. B.S., Iowa State University; M.S., Michigan State University

FARA, KIMBERLY J., 1991, Academic Achievement Center/ Mathematics. B.S., University of Iowa; M.S.E., Drake University; University of Northern Iowa; Ph.D., Iowa State University

FIELDER, YVONNE M., 2008, Speech Communication. B.A., Coe College; M.A., Bradley University; University of Iowa

FITZGERALD, DANIEL P., 2007, Academic Advisor. B.A., University of Minnesota

FITZGERALD, NICOLE A., 2009, Biology. B.A., University of Northern Iowa; B.S., D.C., National University of Health Sciences

FOLTZ, TAMIE J., 2006, Philosophy/Sociology. A.S., Des Moines Area Community College; B.S., M.S., Iowa State University

FOSTER, JENNIFER L., 2010, Director, Program Development. B.A., William Penn College; M.A., Drake University; Ph.D., Iowa State University

FOSTER, SANDRA A., 2008, Campus Health Specialist/Nurse. B.S., University of Iowa

FOUNTAIN, SHANNA L., 2010, Academic Advisor. B.S., University of West Georgia; M.S., Drake University

FRIEDLEIN, KAREN L., 2003, Biology. B.S., The George Washington University; M.S.M., Hampton University; D.P.M., University of Osteopathic Medicine and Health Science

FRIESS, CIEL A., 1993, Coordinator, Community Relations Projects. A.S., Des Moines Area Community College; B.A., Grand View College; M.S.E., Drake University

FUNKE, REBECA S., 2004, Director, Library Resources. B.A., M.A., University of Iowa

FURNAL, KIRSTEN S., 2007, Child Development Specialist. A.S., Des Moines Area Community College

FURNEY, LISA S., 2004, Educational Interpreter. A.A.S., Iowa Western Community College; B.A., Central College; C.T., C.I., Registry of Interpreters for the Deaf

GABRIEL, RANDY J., 2005, Director, Program Development. B.A., University of Northern Iowa; M.A., Drake University

GARDNER, MARVIN, 1999, Computer Information Systems. B.S., M.A., University of Iowa

GARVIS, PAMELA J., 2003, Nursing. A.S., Des Moines Area Community College; B.S.N., Briar Cliff University; M.S.N., University of Wyoming

GATZKE, MICHAEL L., 1997, Architectural Technologies. B. Arch., Iowa State University; Assoc. AIA; CSI; CDT; ACP

GAVIN, DAVID, 1999, English. B.A., Portland State University; M.F.A., University of Arkansas

GEORGE, KERRY, 1977, Respiratory Therapy. B.S., University of Illinois; M.Ed., Iowa State University; University of Chicago Hospital and Clinic Schools; University of Iowa; Iowa State University

GLASSMAN, DONALD L., 1998, Biology. B.S., M.S., University of Maryland; D.V.M., University of Minnesota

GOCKEN, R. DREW, 1992, Academic Dean, Business Management & Information Technology. B.S., Iowa State University; Illinois Institute of Technology; M.Ed., Iowa State University

GONZALEZ, JULIE E., 2008, Biology. B.S., Upper Iowa University; M.S., Iowa State University

GOODE, TERRY L., 1989, Diesel. A.A.S., Des Moines Area Community College

FACULTY AND STAFF

GOODRICH, TONY A., 2004, Biology. B.A., Wartburg College; M.S., Palmer College of Chiropractic

GORMAN, WILLIAM G., 1989, Diesel. A.A.S., Des Moines Area Community College; Iowa State University; Drake University

GOSCH, GAYLE M., 2004, GED/HS Completion. B.S., Iowa State University; M.Ed., University of Houston

GRANSETH, GEORGE J., 2000, Architectural Millwork. B.A., University of Iowa

GRANTHAM, VADA, 2003, Business Administration/ Entrepreneurship. B.A., Grand View College

GREEN, BRIAN, 2005, Associate Provost, Boone Campus. B.A., University of Northern Iowa; M.A., University of Iowa

GREEN, MARY JANE, 1985, Business Technology. B.A., Buena Vista College; M.A., University of Northern Iowa

GREIMANN, DAVID L, 1998, Computer Science/Information Technology. B.A., University of Northern Iowa; M.S., Drake University

GROVE, CHRISTA L., 2004, Academic Advisor. B.S., Minnesota State University; Mankato Faculty and Staff

GUERRA, ANTHONY A., 2009, Pharmacy Technician. Pharm.D., University of Maryland; A.S., Des Moines Area Community College

GULLION, JEFF H., 1998, Web Development & Design. B.S., B.A., M.B.A., Drake University

GUNTHER, SADIE, 2012, Child Development Specialist. B.S., Iowa State University

HABERMANN, PATRICK J., 1997, Ford Motor Project. Diploma, Wyoming Technical Institute; Diploma, Iowa Central Community College; Iowa State University

HADE, DELORA JESPERSEN., 2004, Early Childhood Education. B.S., M.S., Ph.D., Iowa State University

HALVERSON, KATE E., 2009, Psychology. B.S., B.S., M.S., Iowa State University

HAMILTON, LORI L., 2001, Educational Interpreter. A.A.S., Iowa Western Community College

HAMMOND, DIANE M., 2003, Nursing. L.P.N., A.S.N., North Iowa Area Community College; B.S.N., Grand View College; M.S.N., Drake University

HANLIN, MARY E., 2001, Biology. B.S., M.S., University of Wyoming

HANSEN, BARBI N., 1994, STRIVE. B.S., Iowa State University; M.A., University of Iowa; Drake University

HANSON, DENNIS L., 1996, Diesel. B.S., Iowa State University

HANSON, JOE, 2004, Business Management/ Information Technology. A.A., Iowa Lakes Community College; B.A., University of Northern Iowa; M.B.A., University of Nebraska at Omaha; Ph.D., Iowa State University

HARRIS, DARON R., 2006, Academic Advisor. A.A., Des Moines Area Community College; B.A., University of Northern Iowa; M.Ed., Iowa State University

HARRIS, LORENE G., 2007, Nursing. A.S., Des Moines Area Community College; B.S.N., Grand View College; M.S.N., University of Iowa

HARRIS, RUDOLPH, 1972, Sociology. B.A., Bemidji State University; M.A., University of South Dakota; University of North Dakota; Howard University; Iowa State University

HARRISON, PATTY J., 2005, Academic Advisor/Assistant Director, Athletics. B.S., Briar Cliff University

HAUSER, DAVID W., 1992, Philosophy. B.A., M.S., Iowa State University; M.A., University of Arizona; Ph.D., Duquesne University

HAUSER, JUDITH A., 1996, English. B.F.A., Drake University; M.A., Florida State University; M.A., Iowa State University

HAWKINS, DELORES W., 1999, Director of Financial Aid. B.S., M.S., Iowa State University

HEDRICK, DALE A., 2009, Building Trades.

HEILSKOV, HEIDI, 1999, Assistant Registrar. B.S., M.Ed., Iowa State University

HELGESON, A. SCOTT, 1994, Biology. B.A., M.A., University of Nebraska

HENSEN, KARI A., 2004, Associate Dean, Arts & Sciences. B.S., M.S., Ph.D., Iowa State University

HERING, KRYSTAL L., 2008, English. B.A., Eastern Illinois University; M.A., Iowa State University

HERNANDEZ, CHERI A., 2005, Accounting. A.A.S.S., B.U.S., University of New Mexico; M.B.A., Anderson School of Management, University of New Mexico

HERRMANN, JANE M., 1990, Executive Director, Continuing Education. B.S., Iowa Wesleyan College

HEUER, KAREN K., 1976, Marketing. B.S., Iowa State University

HIBBS, MARILYN R., 2011, Dental Hygiene. B.S., University of Iowa; M.A., University of Northern Iowa

HIGGINS, DENISE A., 2007, Nursing. A.D.N., Iowa Central Community College; B.S., University of Iowa; M.S.N., Clarkson College

HILDRETH, SHELBY, 1999, Academic Advisor. A.A., Des Moines Area Community College; B.A., Upper Iowa University

HILGERS, DANIEL, 1983, Business Administration. B.S., Moorhead State College; M.S., Emporia State University

HOFFMAN, MICHAEL J., 2004, Director, Program Development. B.A., Cornell College; M.A., Viterbo University

HOFFMAN, ROBERT, 2006, Criminal Justice. B.S., Iowa State University

HOFFMANN, DEAN R, 1998, Industrial Electro-Mechanical Technology. B.S., University of Nebraska at Omaha

HOFFMAN-TOUBES, ROSE M., 1988, English/Journalism. B.S.E., M.A., Drake University

HOLLINRAKE, WILLIAM J., 1999, Computer Info System. B.B.A., Iowa State University; M.S.E., Drake University

HOLMES, PATRICIA H., 1972, Accounting. B.A., Simpson College; M.A., Iowa State University; Des Moines Area Community College; Drake University; Iowa State University; University of Iowa; New York University; CPA

HOLMES, RUSSELL E., 1981–1986, 2004, Business Administration. A.A., North Iowa Area Community College; B.A., University of Northern Iowa; M.S., Iowa State University; J.D., Drake University School of Law

HOLSTAD, MARCIA J., 2004, Optometric/Ophthalmic Technician. A.A., North Iowa Area Community College; B.S., Iowa State University; M.P.A., Drake University; O.D., University of Missouri-St. Louis

HOWARD, KRIS S., 2003, Nursing. A.D.N., Des Moines Area Community College; B.S.N., Grand View College; M.S.N., Clarkson College

HOWSARE, ANNE M., 2003, Associate Provost, Urban Campus. B.A., M.A., University of Iowa

HUANG, KO-HSING, 2003, Coordinator, International Student Services. B.A., Beijing Normal University; M.A., Illinois State University; Ph.D., Johns Hopkins University

HUBBARD, MICHAEL P., Sr., 2007, English. B.A., M.A., Northern Arizona University; Ed.D., Denver University

HUFFMAN, GARY A., 2010, Chemistry. B.S., Michigan State University; Ph.D., University of Wisconsin-Madison

HULL, HAZEL L., 2007, Sociology. M.A., University of California, Santa Barbara

HUNT, TYRONE N., 2000, Academic Achievement Center. B.S., Lincoln University; M.S.E., Drake University

HUSAK, SHERI, 1976, Academic Advisor. A.S., Des Moines Area Community College; Iowa State University

HUTCHISON, ALAN J., 1988, English. A.A., Iowa Central Community College; B.A., University of Northern Iowa; M.A., D.A., Drake University

IMERMAN, VICKI L., 2003, Nursing. A.D.N., Des Moines Area Community College; B.S.N., University of Iowa; M.S.N., Clarkson College

INKS, MARLA J., 2003, Counselor. B.M.E., Drake University; M.A., University of Iowa

ISEMINGER, ANDREA L., 2009, Financial Aid Advisor. B.A., Coe College; M.Ed., Iowa State University

JACKSON, KIM, 1998, Coordinator, TRIO Upward Bound Program. B.A., University of Iowa

JEDELE, RANDALL E., 1993, English. B.A., Western Kentucky University; M.A., Eastern Kentucky University; Ph.D., Iowa State University

JESPERSEN, DAN R., 2004, Automotive/Diesel Technology. A.A., Grand View College

JESSEN, NADINE K., 2008, Chemistry/Physics. B.S., M.S., Buena Vista University

JOHNS, STEVEN L., 2008, Librarian. B.S., Iowa State University; M.L.I.S., University of Texas

FACULTY AND STAFF

GOODRICH, TONY A., 2004, Biology. B.A., Wartburg College; M.S., Palmer College of Chiropractic

GORMAN, WILLIAM G., 1989, Diesel. A.A.S., Des Moines Area Community College; Iowa State University; Drake University

GOSCH, GAYLE M., 2004, GED/HS Completion. B.S., Iowa State University; M.Ed., University of Houston

GRANSETH, GEORGE J., 2000, Architectural Millwork. B.A., University of Iowa

GRANTHAM, VADA, 2003, Business Administration/ Entrepreneurship. B.A., Grand View College

GREEN, BRIAN, 2005, Associate Provost, Boone Campus. B.A., University of Northern Iowa; M.A., University of Iowa

GREEN, MARY JANE, 1985, Business Technology. B.A., Buena Vista College; M.A., University of Northern Iowa

GREIMANN, DAVID L, 1998, Computer Science/Information Technology. B.A., University of Northern Iowa; M.S., Drake University

GROVE, CHRISTA L., 2004, Academic Advisor. B.S., Minnesota State University; Mankato Faculty and Staff

GUERRA, ANTHONY A., 2009, Pharmacy Technician. Pharm.D., University of Maryland; A.S., Des Moines Area Community College

GULLION, JEFF H., 1998, Web Development & Design. B.S., B.A., M.B.A., Drake University

GUNTHER, SADIE, 2012, Child Development Specialist. B.S., Iowa State University

HABERMANN, PATRICK J., 1997, Ford Motor Project. Diploma, Wyoming Technical Institute; Diploma, Iowa Central Community College; Iowa State University

HADE, DELORA JESPERSEN., 2004, Early Childhood Education. B.S., M.S., Ph.D., Iowa State University

HALVERSON, KATE E., 2009, Psychology. B.S., B.S., M.S., Iowa State University

HAMILTON, LORI L., 2001, Educational Interpreter. A.A.S., Iowa Western Community College

HAMMOND, DIANE M., 2003, Nursing. L.P.N., A.S.N., North Iowa Area Community College; B.S.N., Grand View College; M.S.N., Drake University

HANLIN, MARY E., 2001, Biology. B.S., M.S., University of Wyoming

HANSEN, BARBI N., 1994, STRIVE. B.S., Iowa State University; M.A., University of Iowa; Drake University

HANSON, DENNIS L., 1996, Diesel. B.S., Iowa State University

HANSON, JOE, 2004, Business Management/ Information Technology. A.A., Iowa Lakes Community College; B.A., University of Northern Iowa; M.B.A., University of Nebraska at Omaha; Ph.D., Iowa State University

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JESSEN, NADINE K., 2008, Chemistry/Physics. B.S., M.S., Buena Vista University

JOHNS, STEVEN L., 2008, Librarian. B.S., Iowa State University; M.L.I.S., University of Texas

FACULTY AND STAFF

JOHNSON, CHANDRA M., 2012, Academic Advisor. B.A., University of Iowa; M.S., Minnesota State University, Mankato

JOHNSON, WILLIAM V., 2005, Drama. B.A., M.F.A., University of Iowa

KARIM, REZA, 2006, Business Administration/Technology. B.A., M.S.S., University of Rajshahi, Bangladesh; M.S., Southern Illinois University

KARUNATILAKA, CHANDANA, 2012, Chemistry. B.Sc.,The University of Peradeniya, Sri Lanka; Ph.D., The University of Arizona

KEAHNA, JENNIFER L., 2006, Credentials/Graduation Specialist. B.S., M. Ed., Iowa State University

KEESE, CYNTHIA R., 1992, Assessment Center Coordinator. B.S., Mount Mercy College

KELLOGG, DENNIS L., 2004, Anthropology. B.G.S., M.A., Southeast Missouri State University; Iowa State University

KELLY, JEFF J., 2002, Director, Evening/Weekend. B.S., Iowa State University; M.A., Minnesota State University

KLEIN, SUSAN J., 2010, Health Occupations. A.S., Des Moines Area Community College

KNORR, LOU ANN V., 1985, Business Technology. B.A., Concordia College; M.A., Moorhead State University; Bemidji State University

KNOWLES, KEITH A., 1987, Academic Advisor. B.A., Adrian College

KOCH, MARY ANN, 2000, Academic Achievement Center. B.A., Briar Cliff College; M.A., Webster University

KOKEMULER, NEIL K., 2004, Marketing. B.B.A., University of Dubuque; M.B.A., Iowa State University

KOOPMAN, JAMES E., 2005, Academic Advisor. A.S., Des Moines Area Community College; B.A., University of Dubuque; M.A., Loras College

KOPATICH, COREY W., 2008, Academic Advisor. B.A., Drake University

KOSTELNICK, CLARE A., 2006, Health Occupations. B.S.N., Illinois Wesleyan University

KRAFCISIN, STEVEN J., 2005, Coordinator, Student Activities. B.S., University of Iowa

KRICK, FREDERICK M., 1988, Lab Coordinator. A.A., Des Moines Area Community College; B.A., M.A., Drake University

LAURITSEN, CHARLES W., 2006, History. B.S., M.A., Drake University

LAVILLE, JANET, 1991, English. B.S., Northwest Missouri State University; M.A., Iowa State University

LAWLER, DARLENE K., 2008, English. B.A., University of Northern Iowa; M.A., Drake University

LEE, TOM L., 2005, Provost, Boone Campus. B.A., Monmouth College; M.A., Drake University

LEETCH, JOHN, 1990, CAD Technology. A.S.M.E.T., Scott Community College; Palmer Junior College; Kirkwood Community College; University of Iowa; Iowa State University

LEISY, PATRICIA S., 2002, Program Coordinator, H & PS/ Nursing. A.A.S., SUNY Upstate Medical University; B.S., University of Central Florida; M.A., University of Texas at San Antonio

LENIHAN-CLARK, VICKIE L., 1986, Nursing. Diploma, Mercy College; B.S.N., Grand View College; M.S.N., Drake University

LENTSCH, MICHAEL J., 2002, Director, Enrollment Management. B.A., University of Northern Iowa; M.S., Drake University

LEVY, DAVID J., 2005, Business Administration. B.S.E.E., M.B.A., University of Iowa

LINDUSKA, KIM J., 1981, Executive Vice President, Academic Affairs/Provost, Ankeny Campus. B.A., Augustana College; M.S., Ph.D., Iowa State University

LOECK, NANCY L., 2005, Psychology. A.A., Waldorf Junior College; B.A., Buena Vista College; M.S. Iowa State University

LOOS, JIM, 1997, Music. B.M., University of Iowa; M.A., University of Northern Iowa

LULOFF, TERY, 1990, Mathematics. B.A., Wartburg College; M.S.E., Drake University

MACKLIN, SANDRA, 1985, Child Development Specialist. A.A., Des Moines Area Community College; B.A., University of Northern Iowa; Iowa State University

MAGGIO, MARK E., 2006, Social Sciences. B.A., Macalester College; M.P.A., Syracuse University; Ph.D., George Mason University

MAGIE, AMANDA J., 2005, Coordinator, Early Childhood. B.A., University of Northern Iowa; M.F.C.S., Iowa State University

MAHRT, AMBER N., 2010, Nursing. B.S.N., University of Iowa; M.S.N., Clarkson College

MANN, ROBERT S., 1975, English. B.A., M.A., Ed.S., University of Iowa

MARKOW, SUZANNE K., 2000, Business Administration. B.A., Central College; M.B.A., Drake University; Graduate Cert., Antioch University, Seattle WA

MARMON, JAMES, 1981, Automotive Technology. A.A.S., Des Moines Area Community College

MARSHALL, CINDY K., 1988, Marketing. B.S., M.B.L., Upper Iowa University

MARTIN, CYNTHIA J., 1995, Chemistry. B.A., University of Northern Iowa; M.S., University of Iowa

MARTIN, GREGORY C., 1996, Vice President, Information Solutions. A.A., Des Moines Area Community College; B.A., University of Northern Iowa

MARTIN, STEVEN L., 2006, Criminal Justice. A.A., Carl Sandburg College; B.A., Iowa Wesleyan College; M.S., Central Missouri State University; NIMS

MARTINO, JANE HARRIS, 1996, Psychology. B.A., Clarke College; M.A., University of Iowa; Ph.D., Iowa State University

MCALISTER, JON K., 2007, Correctional Educational Program. B.A., Boise State University; M.A., University of Iowa

MCCAFFREY, JERRINE, 1990, English. B.S., Truman State University; M.A., University of Nebraska, Omaha; Ph.D., University of Nebraska, Lincoln

MCCALL, CYNTHIA, 1975, Accounting. A.A., Southwestern Community College; B.S., Northeast Missouri State University; M.B.A., J.D., Drake University; CPA

MCCLURE, CHRISTOPHER R., 2004, Mathematics. A.A., College of the Redwoods; B.A., Humboldt State University; M.S., Iowa State University

MCCOMB, DARYN, 2000, Network Systems Analyst 2. A.A., Des Moines Area Community College

MCENANY, CRAIG A., 1988, Agribusiness. B.S., Iowa State University

MCGINN, B.J., 2007, Coordinator, Resident Housing. B.A., University of Northern Iowa; M.S.E., Wayne State College

MCGREGOR, NEAL L., 2010, Business Administration. A.A., Johnson County Community College; B.S., M.A., Park University; M.B.A., University of Missouri; Ph.D., Walden University

MCGREGOR, SHANNON D., 2011, English. A.A., Lake Land College; B.A., M.A., Eastern Illinois University

MCKITTRICK, DEBORAH K., 2010, Judicial Officer. B.F.A., Drake University; J.D., Drake University Law School; M.S., Creighton University Law School and the Werner Institute for Negotiation and Dispute Resolution

MCLEAN-MERTEN, SHARI B., 2009, Coordinator, Hunziker Center. A.A., Waldorf College; B.A., Simpson College; M.Ed., Iowa State University

MCMAKEN, HARRY L., 1993, Mathematics/Engineering. B.S., University of Tulsa; M.S., Ph.D., Northwestern University

MCTAGGART, JOHN A., 2007, Information Technology. B.S., M.S., Central Michigan University

MEAD, RANDY A., 1998, Executive Dean, Program Development. B.A., M.A., Ed.S., University of Northern Iowa; Ph.D., Iowa State University

MEARS, SHEA A., 2002, Accounting. B.A., University of Northern Iowa; M.B.A., Drake University; CPA

MEIER-CADE, CONSTANCE, 1991, Nursing. B.S.N., Marycrest College; M.S.N., University of Nebraska; M.A., University of Iowa

MICHELI, AMANDA M., 2006, Academic Advisor. B.S., University of Nebraska, Omaha; M.Ed., University of Nebraska, Lincoln

MILLER, BLAYNE P., 2007, Network Systems Analyst 2. A.A., A.A.S., Des Moines Area Community College

FACULTY AND STAFF

MILLER, DARRIN P., 2010, Hospitality Careers. A.A.S., Muscatine Community College; A.A.S., B.S., Johnson and Wales University

MILLER, MICHAEL J., 2012, Economics. B.A., Westfield State College; M.A., University of New Hampshire

MILLER, SAM, 2003, English. A.A., Des Moines Area Community College; B.A., University of Iowa; M.A., Iowa State University

MILLER, SHERYL L., 2000, Nursing. R.N., Iowa Methodist School of Nursing; B.G.S., M.S., M.S.N., Drake University

MITCHELL, SUSAN J., 1989, Business Administration. B.A., Buena Vista College; J.D., Drake University School of Law

MOFFIT, LON E., 1996, Diesel Technology. A.A.S., A.S., Des Moines Area Community College, Iowa State University, Drake University

MOLLOY, KIM M., 2009, Nursing. B.F.A., Drake University; M.S.N., San Francisco State University

MOOREHEAD, RUSSELL P., 1984, Marketing. B.A., University of Northern Iowa; M.B.A., Drake University

MOORMAN-RICE, JANET , 1998, Computer Info Systems. A.S., A.A., Des Moines Area Community College; B.S., Upper Iowa University; Iowa State University

MORLAN, JOANN G., 1987, Academic Advisor. A.A., Des Moines Area Community College; B.A., Iowa State University; M.A., University of Northern Iowa

MOSES, BARBARA L., 2004, Counselor. B.S., Ed.S., Iowa State University

MOSMAN, MICHELLE, 1980, Mathematics/Academic Achievement Center. A.A., Grand View College; B.S., Iowa State University; M.S., Drake University; University of Hawaii

MOSS, BETH B., 2006, Nursing. B.A., Northwestern College; A.D.N., Western Iowa Tech; B.S.N., M.S.N., Nebraska Wesleyan University

MOSS, JUDY A., 1992, Mathematics. B.S., Westmar College; M.A., University of South Dakota

MOSS, QIAN F., 1998, Biology. B.S., M.D., Third Medical University of China; M.S., University of Georgia

MORRIS, CARRIE J., 2005, Spanish. B.A., M.A., University of Northern Iowa

MUDD, MEGAN J., 2003, Academic Advisor. A.A., Ellsworth Community College; B.A., University of Northern Iowa

MUELLER , KAY E., 1985, Speech Communication. B.A., Iowa State University; M.A., Purdue University

MULLER, GLENDA M., 2007, Career Work Experience. B.S., Iowa State University; North Dakota State University

MULLIHAN, TASHA J., 2000, Business Technology. A.A., A.A.S., Des Moines Area Community College; B.A., University of Northern Iowa

MURPHY, CARIN L., 1998, Graphic Technologies. B.F.A., M.Ed., Iowa State University

NELSON, ANDREW R., 2006, Recreation/Wellness Services Coordinator. A.A., Iowa Central Community College; B.A., University of Northern Iowa

NELSON, DANIEL R., 2008, Academic Achievement Center. B.A., M.A., Drake University

NELSON, MAURA G., 1990, English/French. B.A., M.A.T., Northwestern University; M.A., Washington State University

NELSON, MERIDITH M., 2004, Academic Achievement Center. B.A., Upper Iowa University; B.S., M.Ed., Iowa State University

NETCOTT, CURTIS L., 2007, Automotive Technology. B.S., Iowa State University

NEUENDORF, ANDREW J., 2012, English/Literature. B.A., Loras College; M.F.A., Texas State University-San Marcos

NEUMAYER, JOHN, 1990, Tool & Die. A.A.S., A.G.S., Des Moines Area Community College; Certificate, U.S. Department of Labor Journeyman Tool & Diemaker

NEVILLE, ANGIE J., 2010, Academic Advisor. B.A., Wartburg College

NEWBANKS, KERRY S., 2007, Civil Engineering Technology. A.A.S., Des Moines Area Community College

NEWBY, RONN R., 2010, Psychology. B.A., William Penn University; M.A., Liberty University

NICKELSON , JAY E., 2000, Telecommunications. B.S., Peru State College; TIA/EIA CTP

NORMAN, TODD A., 1994, Auto Collision. A.A.S., Des Moines Area Community College; B.A., University of Northern Iowa; Iowa State University

NORTON, TERRY D., 2010, Director, Newton Career Academy. B.B.A., University of Iowa; M.A., Drake University

O'BANNON, JEFF A., 2001, Automotive Technology. A.S.E. Master Certified; GM Master Certified

O'BRIEN, TOM R., 2006, Lab Coordinator. Building Trades Diploma, Des Moines Area Community College

OCKEN, SCOTT, 1985, Academic Dean, Industry & Technology. Certificate, A.A.S., Des Moines Area Community College; Iowa State University; University of Northern Iowa; B.A., Grand View College; M.Ed., Iowa State University

OCKENFELS-JORDAHL, CATHERINE A., 2003, Criminal Justice. A.A., Kirkwood Community College; B.G.S., M.S.W., University of Iowa

ODGAARD, DEBORAH, A., 1993, Medical Assistant. B.S., Upper Iowa University

O'NEILL, RICHARD M., 2008, Business Administration. B.B.A., Iona College; M.B.A., Iona College Graduate School

ORIGER, PATTY A., 2010, Health Information Technology. B.S., College of Saint Mary

OSBORNE, RICHARD, 1998, Computer/Information Technology.

OSSIAN, LISA L., 2005, History. M.L.S., Eastern Michigan University; B.S., Ph.D., Iowa State University

OSTRANDER, VERN L., 2003, Counselor. B.S., M.A., University of Iowa

OVERTON, JOEL J., 2011, Math. B.S., M.S., University of Iowa

PAGNAC, DARWIN K., 2004, English/Developmental Writing. B.A., St. Cloud State University; M.A., Oklahoma State University

PALAR, CHRIS A., 1998, Hospitality Careers. B.S., Iowa State University

PARKER, PAMELA, 2008, Counselor. B.A., University of Northern Iowa; M.A., Trinity Bible College and Seminary

PATTERSON, KEVIN E., 2004, Mortuary Science. A.S., Mid-America College of Funeral Service; B.S., M.S., University of Missouri-Rolla; University of Florida; Ph.D., Iowa State University

PAUSTIAN, ANTHONY D., 2000, Provost, West Campus. A.A.S., Community College of the Air Force, A.S., Clovis Community College; B.B.A., Eastern New Mexico University; M.A., Northern Illinois University; M.B.A., Loyola University; Ph.D., University of Iowa

PEA, JOHN B., 2008, Speech/English. B.A., University of Indianapolis; M.A., Ball State University

PEAREY, LES A., 2006, Math. B.S., M.S., Iowa State University

PEARSON, EDEN F., 1999, English. B.A., University of Arizona; M.A., Drake University; Ph.D., Iowa State University

PENNEY, DEBORAH A., 1995, Dental Hygiene. B.S., M.S., University of Iowa

PEREZ-KAHLER, NORMA L., 2009, Coordinator, TRIO SSS Program. B.A., M.A., University of Northern Iowa; Ed.D., University of South Dakota

PERRY, MARILYN J, 2005, Correctional Education Program. B.A., University of Northern Iowa; M.S., Western Illinois University

PETERS, RANDY, 1989, Automotive Technology. A.A.S., Des Moines Area Community College

PETERSEN, G. SHIRLEY, 1979, Librarian. B.A., University of Northern Iowa; M.L.S., University of Hawaii-Manoa

PETRAK, DAN G., 2004, Mathematics. B.S., Buena Vista University; M.S.M., Iowa State University

PIEPER, ALBERT E., 1997, Ford ASSET. Diploma, Indian Hills Community College; Iowa State University

PIPER, MICHAEL J., 2006, Interpretation/Translation. B.A., M.A., University of Northern Iowa; M.L., El Colegio de Mexico; J.D., Drake University Law School; NAJIT; ATA

PIPER, PRISCILA P., 2008, Spanish/Interpretation & Translation. B.A., Dallas Baptist University; B.A., M.A.E., M.A., University of Northern Iowa

PITCHER, KAREN C., 2011, Speech Communication. B.A., University of Northern Iowa; M.A., Ph.D., University of Iowa

POHLMAN, KIRK J., 2010, Academic Advisor. B.A., University of Northern Iowa

FACULTY AND STAFF

PRATT, EWA J., 1983, English As Second Language. B.A., M.A., Adam Mickiewicz University, Poland

PRINDLE, TIMOTHY A., 2003, Accounting. A.A., North Iowa Area Community College; B.A., University of Northern Iowa; B.B.A., Iowa State University; CPA

PRITCHARD, SAMUEL E., 2005, English. B.A., West Virginia University; M.A., Iowa State University

RAHN, S. MIKE., 2002, Welding. A.A.S., Kirkwood Community College; CWI; CWE

RANCH, MARGARET E., 1996, Academic Achievement Center. B.A., Northeastern Illinois University; M.S.E., Drake University

RARICK, MELISSA M., 2002, Graphic Design. B.A., Iowa State University

RASMUSSEN, NED L., 2008, Building Trades. B.S., Iowa State University; M.A., Viterbo University

RAY, RANDI S., 1993, Legal Assistant. B.S., University of Iowa; J.D., Drake University

REIMERS, DAVID D., 1988, Student Employment Specialist, Special Needs. B.S., Iowa State University; M.S., Drake University

RHONE, JEANNETTE B., 1997, Coordinator, Iowa New Choices. A.A., Des Moines Area Community College; B.S., Iowa State University

RIAL, TIM, 1999, Mathematics. B.A., University of Illinois; M.A., University of Northern Iowa

RICE, LAUREN R., 2011, English. B.A., University of Iowa; M.F.A., University of New Orleans

RIKKELS, BEN, 2006, Financial Aid Advisor. B.A., Upper Iowa University

ROBERTS, RICHARD E., 2005, Chemistry. B.A., Hamline University; Ph.D., Iowa State University

ROBINSON, WENDY S., 2011, Director, Student Development. B.A., Calvin College; M.A., University of Arizona

ROOSA, JULIE K., 2003, Journalism. B.A., Iowa State University; M.A., J.D., Drake University

ROSENBERRY, MARK E., 1990, Tool and Die. A.A.S., Des Moines Area Community College

ROSS, BRET A., 2005, English. B.A, M.A., Iowa State University

ROYSTER, MINDY A., 2004, Upward Bound Advisor. B.A., Creighton University

RUSSEL, JOHN D., 2000, Automotive Technology. Iowa Central Community College

SADEGHPOUR, MELANIE H., 2007, Environmental Science. B.A., Drake University; B.S., Iowa State University; M.S., University of Wisconsin-Stevens Point

SALTZMAN, DIANE G., 2006, Credentials/Graduation Specialist. B.S., B.F.A., Iowa State University

SANDER, MICHAEL A., 2005, Automotive Technology. A.A.S., Hawkeye Institute of Technology

SANDERS, KELLY JO., 1998, Computer Info Systems. B.S., Mankato State University; M.S., Drake University

SANDERSON, CONSTANCE M., 2005, Medical Administrative Assistant. B.S., Upper Iowa University; M.A., Norwich University

SANDS, SOKISH T., 2004, Academic Advisor. B.S., Norfolk State University; M.Ed., Iowa State University

SANDVOLD, MARCIA A., 2000, Accounting. B.A., B.S., M.A., Iowa State University; CPA

SANGER, GARY L., 2004, Auto Collision. ASE Certified; I-CAR Certified

SCHMIDT, BARBARA J., 2002, Speech Communication. B.S., M.S., Iowa State University; M.A., University of Northern Iowa

SCHON, RENEE L., 1988, Coordinator, DMACC Student/ Community Resources. B.S., Iowa State University

SCHONHORST, LORI J., 2011, Child Development Specialist. A.A., North Iowa Area Community College; B.S., M.F.C.S., Iowa State University

SCHROEDER, JEFFREY S., 2005, Political Science. B.S., Iowa State University; Ph.D., University of Oregon

SCHROEDER, SALLY S., 2005, Academic Dean, Health & Public Services. R.N., Mercy School of Nursing; B.G.S., M.S.E., Drake University

SCHULLER, JENNIFER L., 2007, Academic Advisor. B.A., Luther College

SCHULZE, DYANNE L., 1994, Computer Info Systems. A.A.S., Des Moines Area Community College; B.A., University of Iowa; Drake University

SCHULZ, STEVEN D., 2006, Provost, Carroll Campus. B.A., Wartburg College; M.A., University of Northern Iowa; Ed, S., Drake University; Ph.D., Iowa State University

SCHUMACHER, DEE DEE M., 2005, Veterinary Tech. B.S., M.Ed., Iowa State University; CVT; VTS

SCIARROTA, SHERRI L., 2004, Early Childhood Education. A.S., Des Moines Area Community College; B.A., Buena Vista University

SCONIERS-CHAPMAN, MARY, 1990, Vice President, Community and Workforce Partnerships. B.S., Drake University; M.S.E., Iowa State University; Ed.S., Drake University; Ed.D., Vanderbilt University

SEAMAN, GREG A., 1994, Automotive Technology. A.A.S., Des Moines Area Community College

SELINGER, VICTORIA L., 2011, Lab Coordinator. B.S., University of Michigan; M.S., University of Illinois

SHOOMKAMOLA, MAY, 2007, Mathematics. B.S., M.S., Arkansas State University

SIEMAN, CAROLYN M., 1989, English/History. B.A., University of Iowa; M.S.; Iowa State University

SIMANSKI, JULIE A., 1995, Speech Communication. B.A., University of Northern Iowa; M.A., Mankato State University; Ph.D., Iowa State University

SIMMS, MARK G., 2012, Water Environmental Technology. B.S., Grantham University; Certified Iowa Water and Wastewater Operator

SINHA RAJENDRA, 2004, Business Administration. B.S., Eastern Illinois University; M.S., Iowa State University

SLINKARD, SHARRAN S., 1992, English. B.A., University of Wisconsin; M.A., University of Wisconsin-Milwaukee

SMITH, BRADLEY J., 1997, Accounting. B.B.A., Iowa State University; CPA

SMITH, BRENDA L., 2007, Coordinator, Nursing Resource Lab. B.S.N., Grand View College; M.S.N., Walden University

SMITH, DENNIS C., 2003, Automotive Technology. USAF Air University; ASE Master Technician

SMITH, RANDALL R., 1994, Mathematics. B.S., M.S.M., Iowa State University

SOLAN, BRITTA A., 2006, Sociology. B.S., M.S., Iowa State University

SORENSON, SHIRLEY K., 1987, Program Coordinator, Aging Services Management. R.T., St. Joseph Mercy Hospital; B.S., College of St. Francis; M.S., University of Osteopathic Medicine and Health Science

SPIELMAN, BRAD L.R., 2009, Academic Advisor. A.A., Sauk Valley Community College; B.S., Drake University; M.S., University of Wisconsin-Madison

SPRY-KNUTSON, JENNIFER, 1995, Fitness & Sports Management. B.A., Iowa State University; M.A., University of Iowa

STAHR, CURTIS B., 1989, Photography. A.A., Ellsworth Community College; B.F.A., Peru State College

STALL, JEANNE E., 2008, Lab Coordinator, Veterinary Technology. A.A.S., Jefferson College; R.V.T.

STAMPER, KIRK F., 2006, Auto Collision. A.A.S., Iowa Central Community College; Iowa Lakes Community College

STEENHOEK, AMY B., 2011, Academic Advisor. B.A., Central College; M.A., University of Iowa

STEFFEN, MARK A., 2000, Executive Director, Program Development. B.A., University of Iowa; M.A., Drake University

STEFFEN, PATSY E., 2007, Education. B.A., Central College; M.A., University of Northern Colorado

STENDE, CATHERINE J., 1999, Nursing. B.S.N., University of Iowa; M.S., M.S.N., Drake University

STEVENS, ANTHONY C., 2005, Psychology. M.S., Iowa State University

STICK, JAMES W., JR., 1984, Academic Dean, Arts & Sciences. B.A., M.A., University of Iowa

STILES, JODY L., 2009, Academic Advisor. B.A., Coe College

STITES, JOHN H., 2007, Criminal Justice. B.A., University of Iowa; M.S., Michigan State University

FACULTY AND STAFF

STITZ, ROBERT J., 2002, Equipment, Computer & Network Technician. A.A.S., Des Moines Area Community College

STONE, MARGARET, 1987, Coordinator, DMACC Student/ Community Resources. A.A., Boone Junior College; B.S., University of Iowa

STULL, PATRICIA J., 2005, Program Coordinator, Aging Services Management. B.A., Buena Vista College; M.A., University of Phoenix

SWAN, SUSAN J., 2000, Nursing. B.S.N., Cornell University, M.S.N., Northern Illinois University

SWEENEY, THOMAS J., 2006, Economics. B.S., M.S., Illinois State University; Ph.D., Iowa State University

SWENSON, VIRGINIA S., 2007, Math. B.S., M.S.M., Iowa State University

TAYLOR, A. SEAN, 2007, Sociology/Psychology. B.S., Brigham Young University; M.S., Iowa State University

TAYLOR, HOWARD L., 2000, Electronics. A.A., American Institute of Business; B.A., Simpson College; M.B.A., Drake University

TEDROW, MICHELLE A., 2007, Librarian/Media Specialist. B.A., University of Iowa; M.L.S., Emporia State University

THILGES, NATALIA A., 2012, Nursing. B.A., University of Northern Iowa; A.D.N., Iowa Lakes Community College; B.S.N., University of Iowa; M.S.N., Kaplan University

THORNTON, ZOE M., 2004, Academic Advisor. B.A., University of Iowa; M.S., Drake University

THORP, NICK A., 2004, Information Technology/Math. B.S., M.E., Iowa State University

TITCHENER, GERALD D., 2005, Sociology. A.S., Des Moines Area Community College; B.S., M.S., Iowa State University

TONHOUSE, MARIAN L., 2002, English. A.A., Des Moines Area Community College; B.A., M.A., Drake University

TRIEFF, RICHARD T., 1985, Economics. B.A., Simpson College; M.S., Iowa State University

TROTTER, WILLIAM L., 1986, Biology. B.A., M.A., Drake University

TRYON, SANDY B., 2002, Executive Director, Human Resources. B.S.E., University of Arkansas; M.Ed., Arkansas Tech University; Ed.S., Ed. D., Drake University

TURNER, CHRISTINA L., 2007, Business Technology. B.S., M.Ed., University of Nebraska-Lincoln

TWEEDY, THOMAS N., 2002, Counselor. B.A., University of Iowa; M.Ed., Abilene Christian University

UDELHOFEN, STEVEN L., 2004, Criminal Justice. B.S., Iowa State University; J.D., University of Iowa

VACCARO, MICHELLE M., 2004, Counselor. B.A., Siena Heights University; M.S.Ed., College of Saint Rose

VALENTINE, TERRI L., 1999, Academic Achievement Center. B.A., Grand View College; M.Ed., Iowa State University

VANDERLINDEN, DAVID W., 1998, Chemistry. B.S., Valparaiso University; M.A., Drake University; Ph.D., Iowa State University

VAN VEEN, NEAL V., 1992, Commercial Horticulture. B.A., Central College; B.S., Iowa State University

VARADARAJAN, VIJAYALAKSHMI, 2011, Physics. B.Sc., Queen Mary's College-India; M.Sc., Pondicherry University-India; Ph.D., University of Kentucky

VAUGHN, STACY L., 2007, Academic Achievement Center. B.S., M.A.T., University of Iowa

VERHULST, SUSAN L., 2000, Management. B.A., University of Northern Iowa; M.B.A., Drake University

VIDEBECK, SHEILA L., 1999, Nursing. Diploma, Iowa Methodist School of Nursing; B.S.N., University of Missouri, Columbia; M.S.N., University of Minnesota; Ph.D., Iowa State University

VOEGE, JEAN, 2007, Campus Coordinator, Nursing. Diploma, Bishop Clarkson Hospital School of Nursing; B.S.N., Bishop Clarkson College; M.S.N., Clarkson College

VOGEL, JUDITH A., 1999, Speech Communication. B.A., M.A., Purdue University

VOGLER, M. NICOLE, 2012, English. B.A., Central College; M.A., Iowa State University

VOS, RANDALL J., 2007, Commercial Horticulture/ Viticulture. B.A., Dordt College; M.S., Michigan State University

WADDLE, SARAH T., 2003, English. B.A., Indiana University; M.P.A., M.R.P., University of North Carolina at Chapel Hill; M.A., Ph.D., University of Southern Mississippi

WAGNER, DONAVUN J., 2007, Ford ASSET. A.A.S., Salt Lake Community College; B.S., Weber State University

WAGNER, RICK E., 2003, Electronics. B.S.E.E., South Dakota State University

WALKUP, KRISTINA R., 2011, Biology. B.A., St. Olaf College; M.A., Ph.D., Iowa State University

WALSH, MATTHEW R., 2009, History. B.A., Penn State University; M.A., M.S., Duquesne University

WARDYN, JENNIFER J., 1994, Child Development Specialist. A.S., Des Moines Area Community College

WARREN, DONALA, 1986, STRIVE. B.S., Drake University

WARRICK, BETH D., 2008, Nursing. B.S.N., South Dakota State University; M.S.N., University of Iowa

WEBB, KAREN, 2004, Education Outreach Advisor. B.S., M.Ed., Northern Arizona University

WEST, MARY H., 2005, Spanish. B.S., M.S., Iowa State University; M.A., University of Northern Iowa

WEUVE, WESLEY L., 2005, Automotive Technology. Diploma, Lincoln Technical Institute

WHEAT, ERIN L., 2010, Coordinator, Student Activities. B.A., M.A.E., University of Northern Iowa

WHITAKER, CHRISTINE A., 1989, Network Systems Analyst 2.

WHITE, C. RENEE, 2000, Civil Engineering Technology. B.S., M.Ed., Iowa State University

WHITVER-SOYER, KRISTINA M., 2010, Career Work Experience. B.A., M.S., Buena Vista University

WICKHAM, SUSAN, 1975, Academic Achievement Center. B.A., M.S.E., Drake University

WIESE, SHARON, 1987–1995, 1998, Child Development Specialist. A.S., Des Moines Area Community College

WILLIAMS, DOUG C., 2004, Vice President, Business Services. B.A., Simpson College; M.S., Iowa State University

WILSON, DELORES , 1990, Academic Achievement Center. B.S., Iowa State University; M.A., Marycrest College

WILSON, TIFFANY K., 2005, Psychology. B.A., Central College; M.S., Iowa State University

WINTER, JANIS F., 1989, Coordinator, Computer Lab. B.S., Peru State College; M. Astronomy, University of Western Sydney, Australia

WOLF, LAURIE A., 1998, Executive Dean, Student Services. B.A., Iowa Wesleyan College; M.A., University of Iowa; Ph.D., Iowa State University

WOLLESEN, JENNIFER S., 2011, Counselor. B.A., Wayne State College; M.A., Morningside College; M.S., Buena Vista University

WOOD, AMY, 1988, Academic Advisor. B.B.A., University of Iowa

WOOD, CHRISTINE, 1977, Nursing. A.A.S., Iowa Central Community College; B.S.N., University of Iowa; M.S.N., Drake University

WOODS, NANCY A., 1987, Mathematics/Physics. B.S., B.A., University of Nebraska at Omaha; M.S., M.S.M., Ph.D., Iowa State University

WU, TZONG-HWA THOMAS, 2003, Mathematics. B.S., National Kaohsiung Normal University; M.S., M.S., M.A., M.S., Ph.D., University of Iowa

WYATT, MICHAEL J., 2007, Criminal Justice. A.A., Eastern Iowa Community College; B.S., Truman State University; M.A., Western Illinois University

YOUNG-DUNN, ILIMA M., 2005, Human Services. B.S.W., B.A., M.S.W., University of Iowa; L.M.S.W.

YOUNGWIRTH, JOE J., 2004, Auto Collision.

ZARR, HAROLD, 1989, Manufacturing Management. B.S., Iowa State University; M.B.A., Drake University

ZHANG, WILLIAM W., 1998, English. B.A., Northeast Normal University; M.Ed., Rhode Island College; Edinburgh University; Ph.D., Indiana University of Pennsylvania

ZIMMERMAN, MARY KATHLEEN, 1994, Business Technology. A.A.A., Ottumwa Heights College; B.B.A., University of Iowa

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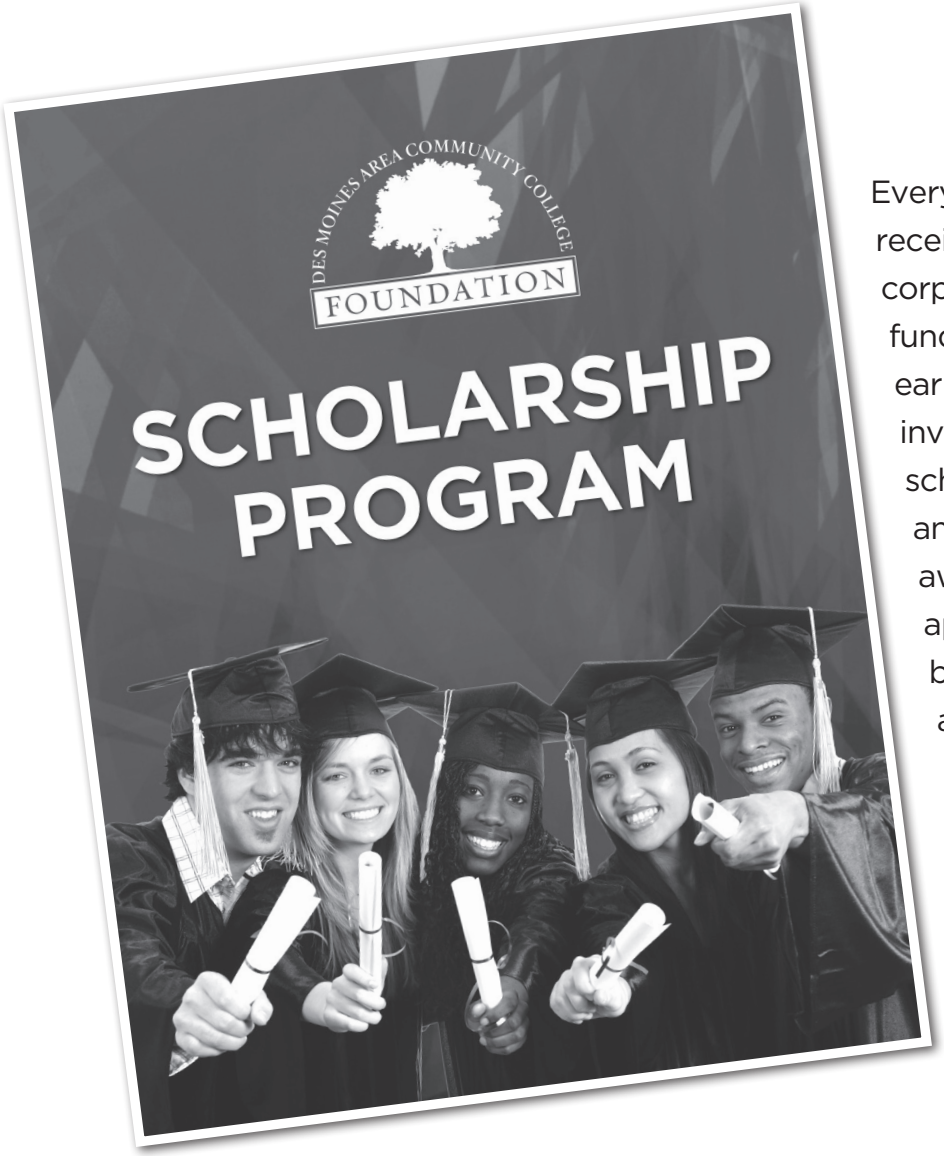

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