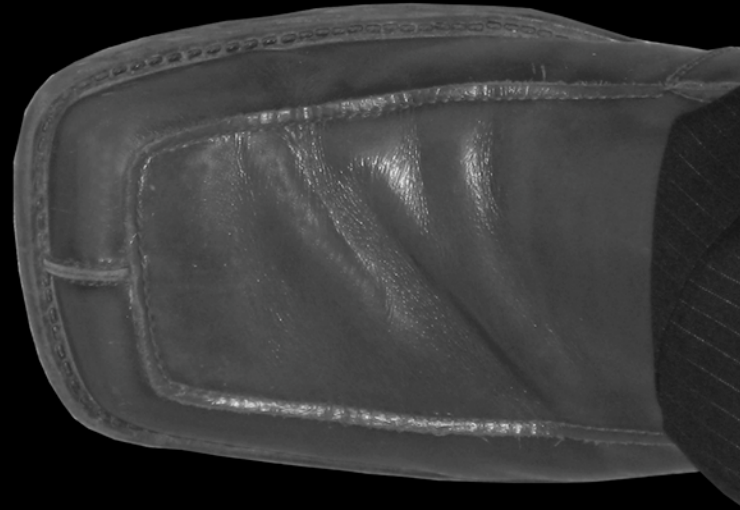


# Arts & Sciences



“

NCC provided me opportunity to get disciplined and it wasn't until after graduating from college that I fully appreciated the value of my education at NCC.

”

—Paul Raak

*Arts & Sciences graduate*

## Associate of Arts Degree

Four Semesters

- Full or part-time students may begin at anytime

# ASSOCIATE OF ARTS

The Associate of Arts degree is a great path for students who want to transfer and finish a four-year, baccalaureate degree. This degree is also a great way to begin if a student wants to “try” college, even without having decided on a major area of study. Within the Associate of Arts degree, NCC offers a Learning Community, designed specifically to help students find a college major and career path. Courses in this degree teach strong communication skills, cultural knowledge, critical thinking, and problem-solving strategies. These skills prepare any student, transfer or otherwise, to be competitive in the workforce. Because the degree requires study in different areas, it acquaints students with many fields of study and can help students choose a major.

After completion of the Associate of Arts degree, most students are prepared to enter a baccalaureate program as juniors. Over the years, NCC students have had excellent success transferring college credit courses to four-year institutions (and perform well when they transfer). The College has established articulation agreements with some colleges and universities, and these agreements smooth the transition from the associate degree to a baccalaureate course of study. Advisors can help students join in these transfer programs.

Many of the Associate of Arts courses are offered in various settings, with flexible scheduling. The degree can even be completed entirely through online learning.

The Associate of Arts degree may be a path for you if you plan to transfer to a four-year college or university or are uncertain of your future academic plans. The Arts and Sciences transfer program will provide you with the cross-disciplinary knowledge and skills necessary to successfully complete upper-division courses at four-year colleges or universities.

Over the years, NCC students have had excellent success transferring college credit courses to four-year institutions of their choice (and perform well when they transfer.)

NCC offers transfer courses in Business, Communications, Computer Literacy, Education, Health, Human Resources, Humanities, Journalism, Math, Physical Education, Science, and Social Science.

NCC offers courses in a variety of settings and with flexible schedules.

## Entrance Expectations

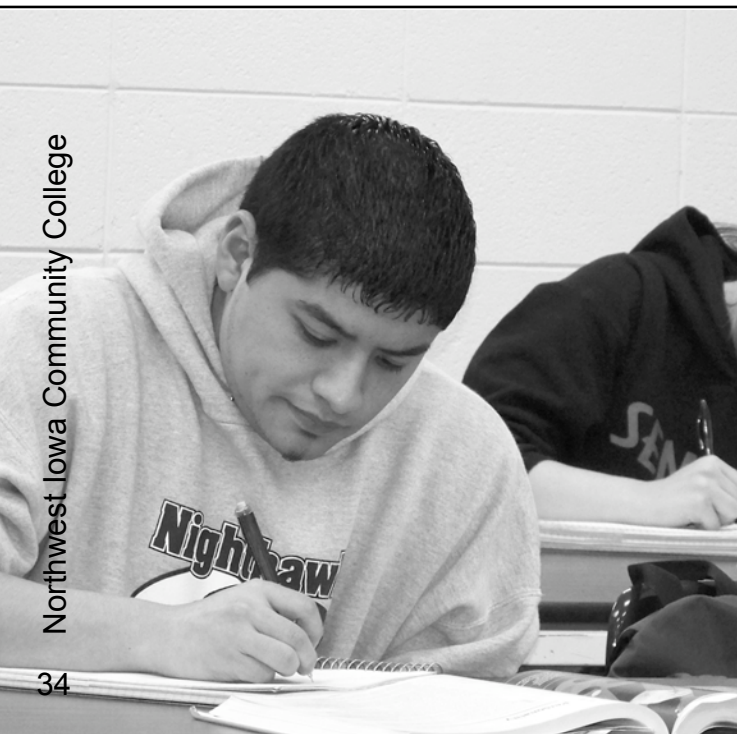
You may be required to take the COMPASS test before acceptance to NCC. Because Arts and Sciences courses are quite challenging, students with low COMPASS scores may be required to take developmental courses at NCC before enrolling in transfer courses.

## Choosing Your Classes

You need to plan your courses of study carefully to ensure that you meet entrance and major requirements of the four-year institution you plan to attend. To avoid any problems you should:

1. **Check the course requirements for the transfer institution.** Some majors leave little room for electives. Students in these majors should take courses that fulfill these requirements.
2. **Check the transferability of classes.** Generally, NCC classes which have numbers followed by an “A” are transferable, but requirements vary from institution to institution. Many institutions require a grade of “C” or better for transfer purposes.
3. **Check the total number of credit hours necessary to graduate from your chosen college or university.** Work closely with the Registrar at your transfer institution to determine how many credits you need to graduate.

If you have not decided upon a major and/or transfer institution, you are strongly encouraged to pursue career counseling or devote time to exploring various majors at NCC’s Career Center.



It is important that you contact the four-year college or university you plan to attend to assure that the courses you take at NCC will transfer appropriately into your major.

### Graduation Requirements

1. A minimum cumulative grade point average of 2.00
2. A minimum of 60 semester credits
3. A minimum of 45 semester credits of general education
  - Communications 9 credits
  - Math/Science 9 credits  
(A minimum of one 3-credit course in each area and a science course with a lab required)
  - Social Sciences 9 credits
  - Humanities 9 credits
  - Additional from the above disciplines 9 credits
  - General education credit must be selected from courses ending in an "A" suffix
4. A minimum of 15 semester credits must be completed through NCC.

**NOTE: Satisfactory assessment scores and/or prerequisites are required for some courses.**

NCC offers Pre-Professional Programs that prepare students to transfer on to 4-year institutions to complete their respective degrees. These programs include (*descriptions and core courses can be read on subsequent pages*):

• Pre-Professional Accounting	page 36
• Pre-Professional Business	page 36
• Pre-Professional Criminal Justice	page 37
• Pre-Professional Early Childhood Education	page 37
• Pre-Professional Education	page 38
• Pre-Professional Human Resource Management	page 38
• Pre-Professional Human Services	page 39
• Pre-Professional Paralegal	page 39

### AA DEGREE GENERAL COURSES

#### 9 HOURS COMMUNICATION

##### Recommended courses

ENG105-A	Composition I
ENG106-A	Composition II
SPC112-A	Public Speaking

#### 9 HOURS MATH & SCIENCE

##### Recommended courses

MAT110-A	Math for Liberal Arts
BIO151-A	Nutrition
BIO154-A	Human Biology
BIO155-A	Human Biology Lab

#### 9 HOURS HUMANITIES

##### Recommended courses

LIT101-A	Introduction to Literature
HIS110-A	Western Civilization: Ancient to Early Modern
HIS111-A	Western Civilization: Early Modern to Present

#### 9 HOURS SOCIAL SCIENCE

##### Recommended courses

PSY111-A	Introduction to Psychology
SOC110-A	Introduction to Sociology
PSY241-A	Developmental Psychology

#### 6 additional from the above areas

##### Recommended courses

PHI105-A	Introduction to Ethics
PHI101-A	Introduction to Philosophy

#### 18–24 additional courses

Those taking the pre-professional AA degree should take the core courses listed for their program.

## ASSOCIATE OF ARTS PRE-PROFESSIONAL ACCOUNTING

The Pre-Professional Accounting Program is designed specifically for those students who are planning to complete a four-year degree, possibly with a major in Accounting. The core curriculum focuses primarily on Accounting Principles and Intermediate Accounting.

Accountants and Auditors are identified as one of the faster growing and higher paid occupational categories through 2010 by the U.S. Bureau of Labor Statistics.

Diploma and AAS programs in Accounting are also available. See Page 52.

**It is important that you contact the college or university to which you anticipate articulating credits to assure that core courses will articulate appropriately into your major. The objective of this program is to prepare you to transfer to another institution to obtain a Baccalaureate degree.**

Course #	Title	Credits
<b>REQUIRED CORE COURSES (FACE TO FACE)</b>		
ACC131-A	Principles of Accounting I	4
ACC132-A	Principles of Accounting II	4
ACC231-A	Intermediate Accounting I	4
ACC232-A	Intermediate Accounting II	4
ACC221-A	Cost Accounting	3
or		
ACC265-A	Income Tax Accounting	4

NOTE: Required to take a minimum of 45 general education credits as listed on page 35.

## PRE-PROFESSIONAL BUSINESS

NCC's Pre-Professional Business program is a great place to start if your future plans include a four-year degree with a Business major.

This business program was developed with the help of local leaders in business and industry to fill the needs of the working world. Skills you learn as a business student include business fundamentals, accounting, economics, computer literacy, and communications skills. There is a strong emphasis on general education courses to prepare you to transfer to a four-year college or university.

**It is important that you contact the college or university to which you anticipate articulating credits to assure that core courses will articulate appropriately into your major. The objective of this program is to prepare you to transfer to another institution to obtain a Baccalaureate degree.**

Course #	Title	Credits
<b>REQUIRED CORE COURSES (FACE TO FACE &amp; ONLINE)</b>		
ACC131-A	Principles of Accounting I	4
ACC132-A	Principles of Accounting II	4
BUS102-A	Introduction to Business	3
BUS185-A	Business Law I	3
MGT101-A	Principles of Management	3
MGT130-A	Principles of Supervision	3

NOTE: Required to take a minimum of 45 general education credits as listed on page 35.

## PRE-PROFESSIONAL CRIMINAL JUSTICE

Have you always been fascinated with criminal behavior? Turn that interest into starting a path toward a rewarding career in the dynamic criminal justice field.

Criminal justice is the application or study of laws regarding criminal behavior. Those who study criminal justice include the police, those working in a judiciary capacity, and lawyers who either defend or prosecute those accused of a crime. Others work to advocate for changes in the current system of criminal justice, such as those who render decisions regarding current laws.

As a field of study, most who will work with parts of the law that involve behavior defined as criminal, will study criminal justice. Knowledge of the laws, rights and privileges of victims and suspects is essential to aiming for justice in both the court and law enforcement systems.

**It is important that you contact the college or university to which you anticipate articulating credits to assure that core courses will articulate appropriately into your major. The objective of this program is to prepare you to transfer to another institution to obtain a Baccalaureate degree.**

Course #	Title	Credits
<b>REQUIRED CORE COURSES (ONLINE ONLY)</b>		
CRJ100-A	Introduction to Criminal Justice	3
CRJ120-A	Introduction to Corrections	3
CRJ130-A	Criminal Law	3
CRJ141-A	Criminal Investigation	3
CRJ200-A	Criminology	3
CRJ101-A	Ethics in Criminal Justice	3

NOTE: Required to take a minimum of 45 general education credits as listed on page 35.

## PRE-PROFESSIONAL EARLY CHILDHOOD EDUCATION

A degree in early childhood education trains professionals for work with children below the typical school age, usually children between three and five. The curriculum in this educational track includes child psychology, parenting, and early learning strategies. Most professionals in this field work in elementary or pre-schools.

**It is important that you contact the college or university to which you anticipate articulating credits to assure that core courses will articulate appropriately into your major. The objective of this program is to prepare you to transfer to another institution to obtain a Baccalaureate degree.**

Course #	Title	Credits
<b>REQUIRED CORE COURSES (ONLINE ONLY)</b>		
ECE103-E	Introduction to Early Childhood Education	3
ECE295-E	Supervision of Childcare Services	5
ECE243-E	Early Childhood Guidance	3
ECE287-E	Exceptional Learner	3
ECE245-E	Guidance and Intervention	3
PEH205-A	Childhood Health, Safety, and Nutrition	3

NOTE: Required to take a minimum of 45 general education credits as listed on page 35.



## ASSOCIATE OF ARTS PRE-PROFESSIONAL EDUCATION

If you enjoy learning, possess good communication skills, and are good at interacting with people, education could be the right field for you. There is currently a great demand for qualified teachers in Iowa and across the nation.

Before you register for courses at NCC, it is important that you communicate with an advisor at your transfer institution. Course requirements vary greatly from institution to institution, and your major and educational specialty areas may dictate additional course requirements.

There are also requirements set by the Iowa Board of Education Examiners for Teacher Licensure.

- You must graduate with a cumulative GPA of 2.50 or higher in the courses required in your major and/or minor.
- You must take two science courses; one of which must be in the life sciences.

The following curriculum profile focuses upon the completion of appropriate general education requirements in each of the respective disciplines.

**It is important that you contact the college or university to which you anticipate articulating credits to assure that core courses will articulate appropriately into your major. The objective of this program is to prepare you to transfer to another institution to obtain a Baccalaureate degree.**

Course #	Title	Credits
<b>REQUIRED CORE COURSES (ONLINE)</b>		
EDU210-A	Foundations of Education	3
EDU220-A	Human Relations for the Classroom Teacher	3
EDU240-A	Educational Psychology	3
EDU255-A	Technology in the Classroom	3
CSC110-A	Introduction to Computers	3
PEH115-A	Wellness Education	3
or		
ART101-A	Art Appreciation	3

NOTE: Required to take a minimum of 45 general education credits as listed on page 35.

## PRE-PROFESSIONAL HUMAN RESOURCE MANAGEMENT

The Human Resource Management Program is designed to prepare you for careers in human resource management in both large and small organizations. The objective of this program is to prepare you to transfer to another institution to obtain a Baccalaureate degree. The core curriculum targets the key areas of compensation, compliance, performance appraisal, and staffing. The core is complemented with a strong component of general education and related business courses.

There is a demonstrated market need for Human Resource professionals, particularly those who are proficient in computer use. The curriculum provides for skill development in the use of computers in addition to providing you with the manager/leader mindset through the management courses and theory provided within.

**It is important that you contact the college or university to which you anticipate articulating credits to assure that core courses will articulate appropriately into your major. The objective of this program is to prepare you to transfer to another institution to obtain a Baccalaureate degree.**

Course #	Title	Credits
<b>REQUIRED CORE COURSES (FACE TO FACE &amp; ONLINE)</b>		
ACC131-A	Principles of Accounting I	4
MGT101-A	Principles of Management	3
MGT125-A	Performance Appraisal	3
MGT170-A	Human Resource Management	3
MGT178-A	Employment Law	3
MGT191-A	Compensation Management	3

NOTE: Required to take a minimum of 45 general education credits as listed on page 35.

## PRE-PROFESSIONAL HUMAN SERVICES

This program will equip you with the skills required to serve clients in a variety of public outreach organizations. Human services graduates work alongside social workers, detectives, doctors, and other specialists who help individuals tackle major challenges in their lives. Many human services programs provide intervention for citizens with substance abuse problems or victims of crime or violence.

**It is important that you contact the college or university to which you anticipate articulating credits to assure that core courses will articulate appropriately into your major. The objective of this program is to prepare you to transfer to another institution to obtain a Baccalaureate degree.**

Course #	Title	Credits
<b>REQUIRED CORE COURSES (ONLINE ONLY)</b>		
SOC120-A	Marriage and Family	3
SOC160-A	Introduction to Social Work	3
SOC115-A	Social Problems	3
SOC230-A	Juvenile Delinquency	3
DSV160-A	Counseling Skills	4
HSV259-A	Introduction to Chemical Dependency	3

NOTE: Required to take a minimum of 45 general education credits as listed on page 35.

## PRE-PROFESSIONAL PARALEGAL

This dynamic program offers you a curriculum that meets legal industry demand. Enter this exciting field with choices from Criminal Law, Interviewing and Investigation, Contracts, Family Law, Real Estate Law, Litigation, Wills and Probate, and Bankruptcy Law. You'll gain experience in legal research, trial preparation, writing legal documents, computer skills, and enjoy the fast paced action and excitement of the law and all that surrounds it. As you learn to perform legal research and legal writing, perform client interviewing, investigation, document management, electronic filing, and law office management. You will be well prepared to take on a challenging and exciting position in the legal field.

**It is important that you contact the college or university to which you anticipate articulating credits to assure that core courses will articulate appropriately into your major. The objective of this program is to prepare you to transfer to another institution to obtain a Baccalaureate degree.**

Course #	Title	Credits
<b>REQUIRED CORE COURSES (ONLINE ONLY)</b>		
PRL161-A	Family Law	3
PRL281-A	Legal Ethics	3
PRL115-A	Legal Research & Writing	3
PRL168-A	Property/Probate	3
POL112-A	American State and Local Government	3

NOTE: Required to take a minimum of 45 general education credits as listed on page 35.



# TRANSFER COURSES

Course #	Title	Credits
<b>AGRICULTURE</b>		
AGS242-A	Animal Health ☞	3
AGA114-A	Principles of Agronomy ☞	3
AGA154-A	Fundamentals of Soil Science ☞	3
AGB326-A	Farm Records Accounts & Analysis ☞	3
AGB330-A	Farm Business Management ☞	3
AGB235-A	Introduction to Agriculture Markets ☞	3
AGB437-A	Commodity Marketing ☞	3
<b>BUSINESS</b>		
See course listing on page 43.		
<b>COMMUNICATIONS</b>		
BUS163-A	Interpersonal Skills at Work ☞	2
ENG105-A	Composition I ☆	3
ENG106-A	Composition II ☆	3
ENG108-A	Composition II: Technical Writing ☆	3
ENG150-A	Fundamentals of English Grammar ☆	3
ENG221-A	Creative Writing ☆	3
ENG238-A	Creative Writing: Nonfiction ☞	3
SPC112-A	Public Speaking ☆	3
SPC122-A	Interpersonal Communications ☞	3
<b>COMPUTER SCIENCE/LITERACY</b>		
BCA129-A	Basic Word Processing ☞	2
BCA214-A	Advanced Computer Business Applications	3
CIS207-A	Fundamentals of Web Programming ☆	3
CSC110-A	Introduction to Computers ☆	3
CSC115-A	Introduction to Computers II	3
<b>EDUCATION</b>		
DSV160-A	Counseling Skills ☞	4
EDU150-A	Directed Observation	1
EDU210-A	Foundations of Education ☆	3
EDU218-A	Initial Field Experience ☞	2
EDU220-A	Human Relations for the Classroom Teacher ☆	3
EDU230-A	Curriculum and Instruction	3
EDU235-A	Children's Literature ☆	3
EDU240-A	Educational Psychology ☆	3
ECE243-A	Early Childhood Guidance ☞	3
EDU255-A	Technology in the Classroom ☆	3
PEH205-A	Childhood Health, Safety & Nutrition ☞	3
<b>HEALTH</b>		
EMS219-E	EMT Basic I	3
EMS225-E	EMT Basic II	3

☞ = class offered online only

☆ = class offered online and on-campus

## HUMAN RESOURCES

MGT125-A	Performance Appraisal ☆	3
MGT170-A	Human Resource Management ☆	3
MGT178-A	Employment Law ☆	3
MGT190-A	Employee Compensation & Benefits Management ☆	3
MGT191-A	Compensation Management ☆	3

## HUMANITIES

ANT105-A	Cultural Anthropology ☞	3
ART101-A	Art Appreciation ☆	3
ART124-A	Computer Art ☞	3
ART133-A	Drawing	3
ART143-A	Painting	3
ART144-A	Painting II	3
ART173-A	Ceramics	3
ART203-A	Art History I ☞	3
ART204-A	Art History II ☞	3
CLS164-A	Japanese History & Culture	3
DRA101-A	Introduction to Theater ☆	3
DRA158-A	Set Design & Construction	1
DRA159-A	Set Design & Construction	2
DRA165-A	Set Design & Construction	3
DRA182-A	Stage Makeup	1
FLS131-A	Elementary Spanish I ☆	3
FLS132-A	Elementary Spanish II	3
FLS231-A	Intermediate Spanish I	3
FLS232-A	Intermediate Spanish II	3
GEO124-A	Regional Geography of the Non-Western World	3
HIS110-A	Western Civilization: Ancient to Early Modern ☆	3
HIS111-A	Western Civilization: Early Modern to Present ☆	3
LIT101-A	Introduction to Literature ☆	3
LIT110-A	American Literature to Mid 1800s ☆	3
LIT111-A	American Literature since Mid 1800s ☆	3
LIT114-A	American Novel ☞	3
LIT134-A	Multicultural Literature ☞	3
LIT141-A	British Literature II ☞	3
LIT150-A	World Literature I ☆	3
LIT151-A	World Literature II ☆	3
LIT161-A	Short Story ☞	3
LIT192-A	Rural Literature	3
MMS101-A	Mass Media ☆	3
MUS100-A	Music Appreciation ☆	3
MUS102-A	Music Fundamentals	3
MUS154-A	Chorus	1
MUS200-A	Music History I ☞	3
MUS201-A	Music History II ☞	3
PHI101-A	Introduction to Philosophy ☆	3
PHI105-A	Introduction to Ethics ☆	3
PHI111-A	Basic Reasoning ☞	3
PHI142-A	Ethics in Business ☞	3
REL101-A	Survey of World Religions ☆	3

## MATH

BUS210-A	Business Statistics ☞	3
BUS212-A	Business Statistics II ☞	3
MAT101-A	Intermediate Algebra	3
MAT102-A	Intermediate Algebra ☞	4
MAT110-A	Math for Liberal Arts ☆	3
MAT121-A	College Algebra ☆	4
MAT129-A	Precalculus ☞	5
MAT130-A	Trigonometry	3
MAT140-A	Finite Math ☆	3



**MATH CONTINUED...**

MAT150-A	Discrete Math ☆	3
MAT156-A	Statistics ☆	3
MAT210-A	Calculus I ☆	4
MAT211-A	Calculus I ☽	5
MAT216-A	Calculus II ☆	4

**PHYSICAL EDUCATION**

PEC101-A	Introduction to Coaching ☽	3
PEH102-A	Health and Wellness Education ☽	3
PEH115-A	Wellness Education ☆	3

**SCIENCE**

BIO102-A	Introductory Biology	3
BIO103-A	Introductory Biology Lab	1
BIO105-A	Introductory Biology ☽	4
BIO106-A	Introductory Biology II	3
BIO107-A	Introductory Biology II Lab	1
BIO128-A	Animal Biology	3
BIO129-A	Animal Biology I Lab	1
BIO133-A	Ecology	3
BIO134-A	Ecology Lab	1
BIO151-A	Nutrition ☽	3
BIO261-A	Introduction to Biotechnology	3
BIO262-A	Introduction to Biotechnology Lab	1
BIO154-A	Human Biology	3
BIO155-A	Human Biology Lab	1
BIO165-A	Human Anatomy & Physiology I	3
BIO167-A	Human Anatomy & Physiology I Lab	1
BIO168-A	Human Anatomy & Physiology I with Lab ☽	4
BIO170-A	Human Anatomy & Physiology II	3
BIO172-A	Human Anatomy & Physiology II Lab	1
BIO173-A	Human Anatomy & Physiology II with Lab ☽	4
BIO177-A	Human Anatomy ☆	4
BIO183-A	Microbiology	3
BIO184-A	Microbiology Lab	1
CHM110-A	Introduction to Chemistry ☆	3
CHM111-A	Introduction to Chemistry Lab	1
CHM125-A	Introduction to General Organic & Biological Chemistry	3
CHM126-A	Introduction to General Organic & Biological Chemistry Lab	1
CHM151-A	College Chemistry I ☽	4
CHM152-A	College Chemistry II ☽	4
CHM163-A	General Chemistry I	3
CHM164-A	General Chemistry I Lab	1
CHM173-A	General Chemistry II	3
CHM174-A	General Chemistry II Lab	1
CHM292-A	Biochemistry	3
ENV111-A	Environmental Science ☽	4
ENV115-A	Environmental Science	3
ENV144-A	Conservation Biology	3
ENV145-A	Conservation Biology ☽	4
HSC163-A	Nutrition	3
PEH185-A	Contemporary Health Issues ☽	3
PHS110-A	Introduction to Physical Science	3
PHS111-A	Introduction to Physical Science Lab	1
PHS113-A	Introduction to Physical Science ☽	4
PHS142-A	Principles of Astronomy ☆	3
PHS143-A	Principles of Astronomy Lab	1
PHS185-A	Introduction to Earth Science ☽	3
PHY110-A	Survey of Physics I ☆	3
PHY111-A	Survey of Physics II ☆	3

**SOCIAL SCIENCE**

CRJ100-A	Introduction to Criminal Justice ☽	3
CRJ101-A	Ethics in Criminal Justice ☽	3
CRJ120-A	Introduction to Corrections ☽	3
CRJ130-A	Criminal Law ☽	3
CRJ141-A	Criminal Investigation ☽	3
CRJ200-A	Criminology ☽	3
ECN120-A	Principles of Macroeconomics ☆	3
ECN130-A	Principles of Microeconomics ☆	3
GEO151-A	Social Geography	3
HIS151-A	U.S. History to 1877 ☆	3
HIS152-A	U.S. History since 1877 ☆	3
HIS201-A	Iowa History ☆	3
HIS251-A	U.S. History 1945 to Present ☽	3
HIS253-A	American Indian History & Culture ☽	3
HIS257-A	African American History ☽	3
HIS278-A	Women of Distinction in U. S. History ☽	3
HIS949-A	20th Century World History ☽	3
HSV259-A	Introduction to Chemical Dependency ☽	3
POL110-A	Introduction to Political Science ☆	3
POL111-A	American National Government ☆	3
POL112-A	American State and Local Government ☽	3
POL121-A	International Relations ☽	3
POL201-A	The U.S. Constitution ☆	3
PRL161-A	Family Law ☽	3
PRL281-A	Legal Ethics	3
PRL115-A	Legal Research and Writing	3
PRL168-A	Property/Probate	3
PSY111-A	Introduction to Psychology ☆	3
PSY121-A	Developmental Psychology ☆	3
PSY211-A	Psychology of Adjustment ☽	3
PSY224-A	Adolescent Psychology ☽	3
PSY225-A	Adult Developmental Psychology ☽	3
PSY241-A	Abnormal Psychology ☆	3
PSY246-A	Introduction to Counseling Skills ☽	4
PSY251-A	Social Psychology ☽	3
PSY261-A	Human Sexuality ☆	3
SOC110-A	Introduction to Sociology ☆	3
SOC115-A	Social Problems ☆	3
SOC120-A	Marriage and the Family ☆	3
SOC125-A	Understanding Parenting	3
SOC160-A	Introduction to Social Work ☽	3
SOC186-A	Global Perspectives ☽	3
SOC200-A	Minority Group Relations ☽	3
SOC220-A	Sociology of Aging ☽	3
SOC230-A	Juvenile Delinquency ☽	3
SOC270-A	Social and Behavioral Research Methods ☽	3

**STUDENT DEVELOPMENT**

SDV108-A	The College Experience	1
SDV130-A	Career Exploration	1
SDV169-A	Research and Information Literacy ☽	1
SDV288-A	Phi Theta Kappa: Leadership Development Studies	3

It is important that you contact the college or university to which you anticipate articulating credits to assure that core courses will articulate appropriately into your major.

For additional online classes, visit  
[www.iowaconline.com](http://www.iowaconline.com)

# ASSOCIATE OF SCIENCE PROGRAMS: MANAGEMENT

Many students are unsure of whether they would like two or four years of college before starting their career. These programs meet both of these needs. You can enter the work force directly after graduation or transfer to a four-year college or university. (If you are thinking about transferring, we encourage you to communicate with the institution of your choice about transfer requirements.)

If you enjoy interacting with other people and you have a mind for numbers, you might consider a career in management. The business world is full of opportunities. In fact, one-third of all jobs are related to the field of business.

NCC's Management program allows you to choose from four areas of concentration:

- **Financial/Insurance Services Management**
- **Human Resources Management**
- **Industrial/Retail Management**
- **Business Management**

## Graduation Requirements

Candidates for the Associate of Science degree must meet the following requirements:

1. A minimum cumulative grade point average of 2.00
2. A minimum of 60 semester credits
3. a. A minimum of 30 semester credits of general education which shall include the following disciplines:
 

• Communications*	9 credits
• Social Sciences**	6 credits
• Humanities***	6 credits
• Math/Science****	9 credits

 (A minimum of one 3-credit course in each discipline of math and science.)
- b. A minimum of 19 semester credits in a designated major.
- c. The remaining 10–11 semester credits of electives from Business, Computer Science, Human Resource Management or Math disciplines.
4. A minimum of 15 semester credits must be completed through NCC.

\*You may select any communications course with a suffix of A.

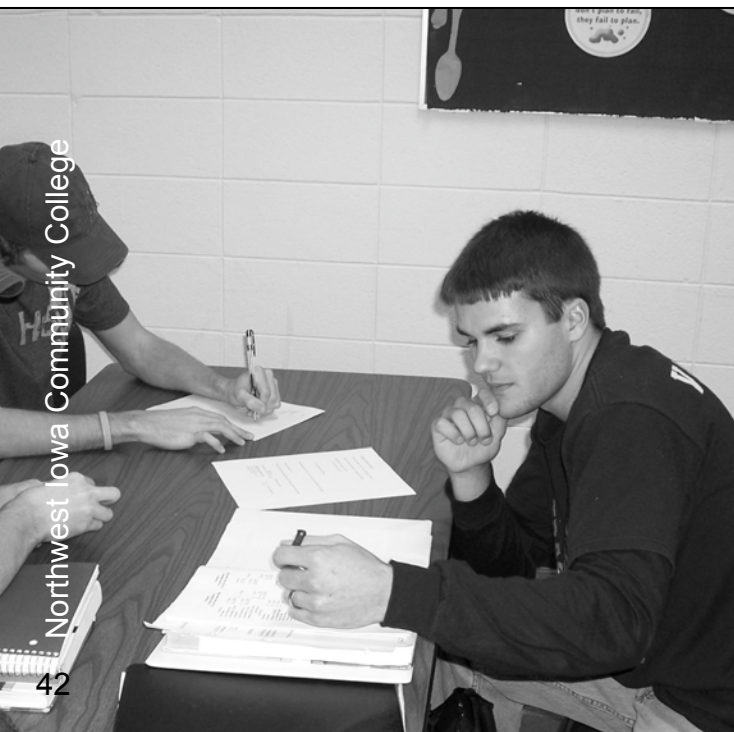
\*\*You may select any social sciences course with a suffix of A.

\*\*\*You may select any humanities course with a suffix of A.

\*\*\*\*You may select any math/science course with a suffix of A.

Course #	Title	Credits
<b>COMPUTER SCIENCE / LITERACY ELECTIVES</b>		
BCA240-E	Graphic Design	3
CSC110-A	Introduction to Computers I	3
CSC115-A	Introduction to Computers II	3
CIS207-A	Fundamentals of Web Programming	3
<b>HUMAN RESOURCES ELECTIVES</b>		
MGT170-A	Human Resource Management	3
MGT125-A	Performance Appraisal	3
MGT191-A	Compensation Management	3
MGT178-A	Employment Law	3

NOTE: Satisfactory assessment scores and/or prerequisites are required for some courses.



Course #	Title	Credits
<b>BUSINESS ELECTIVES</b>		
ACC131-A	Principles of Accounting I ☆	4
ACC132-A	Principles of Accounting II ☆	4
ACC221-A	Cost Accounting ☆	3
ACC222-A	Cost Accounting	4
ACC231-A	Intermediate Accounting I ☆	4
ACC232-A	Intermediate Accounting II ☆	4
ACC261-A	Income Tax Accounting ☆	3
ACC265-A	Income Tax Accounting	4
ACC311-A	Computerized Accounting ☆	3
BUS102-A	Introduction to Business ☆	3
BUS128-A	Foundation of Entrepreneurship	3
BUS130-A	Introduction to Entrepreneurship ☆	3
BUS150-A	E-Commerce ☆	3
BUS154-A	E-Business ☞	3
BUS161-A	Human Relations ☞	3
BUS185-A	Business Law I ☆	3
BUS186-A	Business Law II ☆	3
BUS197-A	Leadership Development ☆	3
BUS212-A	Business Statistics II ☆	3
BUS220-A	Introduction to International Business ☞	3
BUS238-A	Business Problem Solving ☞	3
BUS250-A	Principles of Real Estate ☞	3
BUS255-A	Real Estate Prelicensure	3
BUS265-A	Risk Management ☆	3
BUS268-A	Life Insurance & Financial Planning ☆	3
FIN101-A	Principles of Banking ☆	3
FIN106-A	AIB Principles of Banking	3
FIN107-A	AIB Law and Banking	3
FIN121-A	Personal Finance ☆	3
MGT101-A	Principles of Management ☆	3
MGT110-A	Small Business Management ☆	3
MGT125-A	Performance Appraisal ☞	3
MGT130-A	Principles of Supervision ☆	3
MGT165-A	Principles of Quality ☆	3
MGT170-A	Human Resource Management ☆	3
MGT178-A	Employment Law ☞	3
MGT190-A	Employee Compensation and Benefits Management ☆	3
MGT191-A	Compensation Management ☞	3
MKT110-A	Principles of Marketing ☆	3
MKT140-A	Principles of Selling ☆	3
MKT150-E	Principles of Advertising ☆	3
MKT151-E	Advertising	3
MKT160-A	Principles of Retailing ☆	3
MKT190-A	International Marketing ☞	3
PRL168-A	Probate/Property ☞	3

☞ = class offered online only

☆ = class offered online and on-campus

**4 SPECIALTY AREAS:**

<b>FINANCIAL/INSURANCE SERVICES MANAGEMENT</b>		<b>19</b>
ACC131-A	Principles of Accounting I	4
BUS250-A	Principles of Real Estate	3
or		
PRL168-A	Property/Probate	3
BUS265-A	Risk Management	3
FIN121-A	Personal Finance	3
MGT101-A	Principles of Management	3
MKT140-A	Principles of Selling	3

Note: This concentration area can be completed online.

OR

<b>INDUSTRIAL/RETAIL MANAGEMENT</b>		<b>19</b>
ACC131-A	Principles of Accounting I	4
BUS150-A	E-Commerce	3
CSC110-A	Introduction to Computers	3
MGT130-A	Principles of Supervision	3
MGT101-A	Principles of Management	3
MKT140-A	Principles of Selling	3

Note: This concentration area can be completed online.

OR

<b>BUSINESS MANAGEMENT</b>		<b>20</b>
ACC131-A	Principles of Accounting I	4
ACC132-A	Principles of Accounting II	4
BUS102-A	Introduction to Business	3
BUS185-A	Business Law I	3
MGT101-A	Principles of Management	3
MGT130-A	Principles of Supervision	3

Note: This concentration area can be completed online.

OR

<b>HUMAN RESOURCES MANAGEMENT</b>		<b>19</b>
ACC131-A	Principles of Accounting I	4
MGT101-A	Principles of Management	3
MGT125-A	Performance Appraisal	3
MGT170-A	Human Resources Management	3
MGT178-A	Employment Law	3
MGT191-A	Compensation Management	3

Note: This concentration area can be completed online.

# ONLINE EDUCATIONAL OPPORTUNITIES THROUGH NCC

Is your life too complicated to be able to attend face-to-face classes on campus at Northwest Iowa Community College? If so, then online classes may be the answer to your educational needs. Students enrolled through NCC can take individual courses or pursue entire associate degrees online.

Students are able to blend schedules and take both campus classes and online classes. While flexibility is important for some students, online learning is not easier than traditional learning. In fact, it is often more difficult. However, for the right student it provides the ability to take classes without disrupting his/her daily schedule.

NCC is a member of the Iowa Community College Online Consortium (ICCO). Together the seven member colleges are able to provide NCC students with access to more than 400 sections of courses each semester. Quality and flexibility are the hallmarks of the online offerings at NCC.

Before you take a course online you may want to check out the syllabus and instructor information by going to [www.iowacconline.com](http://www.iowacconline.com) and clicking on the Catalog link. Visit [www.iowacconline.org](http://www.iowacconline.org) for additional information about taking online courses. This informative website includes:

- Dates for online classes
- Tips for being a successful online learner
- Library information
- Textbook information
- A tour of an online class
- A personal assessment to see if online learning is for you, and much more.

To find out more about online courses at NCC just call the College. The Student Services Office will be glad to answer your questions and advise you.

## ONLINE DEGREES AVAILABLE AT NCC

### Associate of Arts

Includes the emphasis available in:

- Pre-Professional Accounting
- Pre-Professional Business
- Pre-Professional Criminal Justice
- Pre-Professional Early Childhood Education
- Pre-Professional Education
- Pre-Professional Human Resource Management
- Pre-Professional Human Services
- Pre-Professional Paralegal

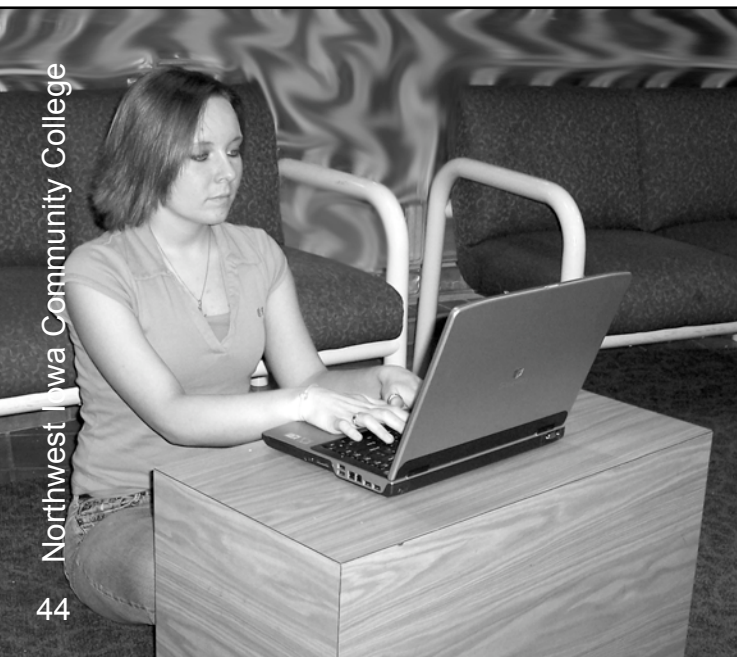
### Associate of Science in Management

4 specialties are available to online students in:

- Financial/Insurance Services Management
- Business Management
- Human Resources Management
- Industrial Retail Management

### Associate of Applied Science

- Health Information Technology
- Agriculture
- Powerline Technology



## BRIAR CLIFF UNIVERSITY 4-YEAR DEGREE OPTIONS

Briar Cliff University brings accelerated degree programs to your doorstep through a partnership with Northwest Iowa Community College. The Briar Cliff Extended Campus Program brings the benefits of a quality liberal arts education to your hometown, making your goal of obtaining a bachelor's degree a reality.

Briar Cliff accepts up to 62 credit hours from NCC toward a bachelor's degree. Dual advising is available to help you plan your schedule; ensure transferability of credits, and a seamless educational experience. Visit with the Briar Cliff extended campus director for details on this beneficial enrollment option.

Current majors at Northwest Iowa Community College include Accounting, Business Administration and Human Resource Management. Classes are offered evenings and weekends to meet the needs of the working adult.



### EVENING AND WEEKEND PROGRAMS

#### Accounting

The Accounting major is designed to prepare you for careers as professional accountants in public, private, governmental, and not-for-profit organizations. The program builds on a foundation of liberal arts courses and provides the educational background necessary to become a CPA or to attain other professional certification. This design seeks to ensure that you attain a broad perspective, which is requisite to success both as a professional accountant and as a top level financial or business executive.

#### Business Administration

The Business Administration major provides instruction in functional areas such as marketing, management information systems, human resource management, finance and accounting. This discipline builds on a foundation of liberal arts and provides a solid foundation for a Master's Degree in Business Administration.

#### Human Resource Management

The Human Resource Management major focuses on human resource management functions in both unionized and non-unionized settings. This major builds on a foundation of liberal arts courses and provides the leadership knowledge and skills needed to succeed in supervisory and managerial positions.

#### Contact Information:

Briar Cliff University Extended Campus  
Box 296  
Algona, Iowa 50511  
rose.molacek@briarcliff.edu  
(800) 798-6191

Articulation agreements are available with other four year colleges and universities. Contact your NCC advisor.

## ARTICULATION AGREEMENTS

- Iowa State University
- University of Iowa
- University of Northern Iowa

### Associate of Arts Articulation Agreement

1. A minimum of 60 semester hours of courses designed and accepted for transfer (may include up to 16 semester hours of vocational/technical courses).
2. Forty semester hours of transfer within general divisions.
3. Twenty remaining hours accepted from arts and sciences electives designed and acceptable for transfer.
4. A minimum grade-point average of 2.0 on all graded arts and science courses accepted for transfer.
5. Junior status at the College of Liberal Arts or other participating colleges within the regent university.

### Vocational/Technical Credit Agreement

1. Sixteen semester hours of vocational credit within an Associate of Arts and Associate of Science degrees will be accepted for transfer.
2. Credit for these 16 semester hours accepted on a pass/satisfactory basis at the regent university.

### Additional Online degree articulation agreements available with:

- Bellevue University
- Franklin University
- University of Phoenix

See your advisor for specific information.

Articulation agreements are available with other four year colleges and universities. Contact your NCC advisor.

IOWA STATE  
UNIVERSITY



# Agriculture

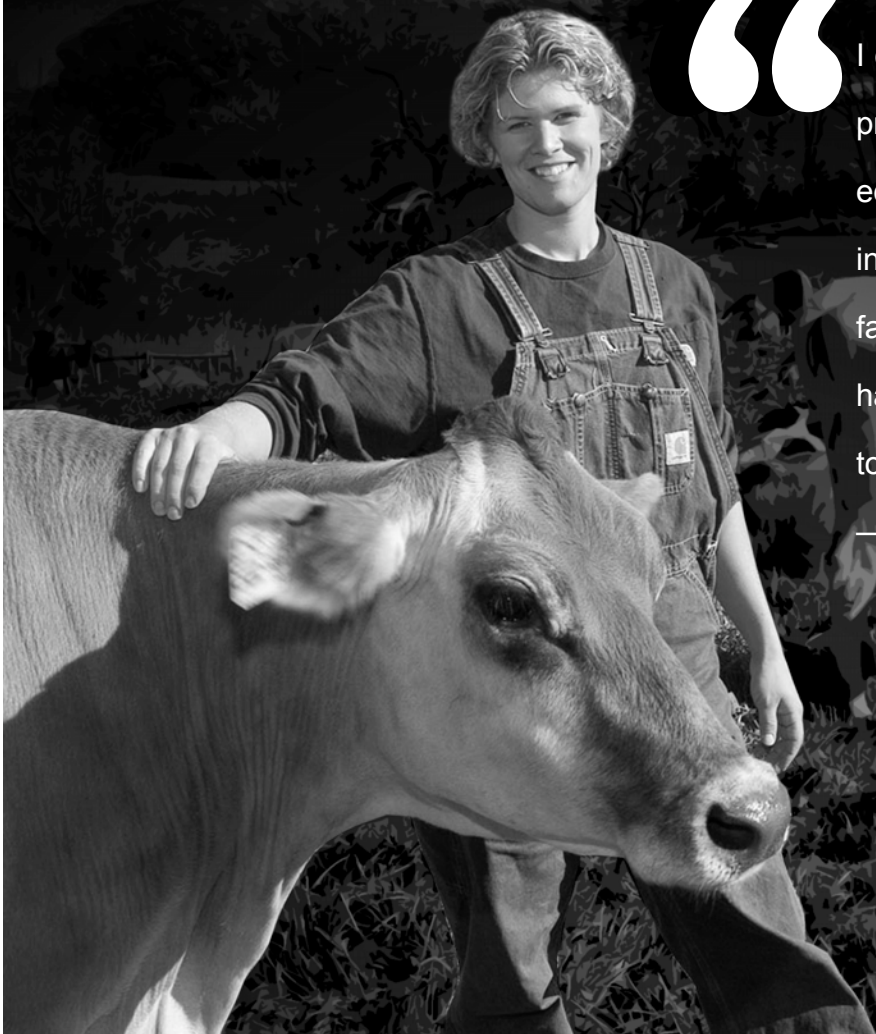


“

I chose NCC and the Dairy Science program because it was the type of education I was looking for. Also, it is in a great community and has great facilities and instructors. NCC also has the price range I was looking for to further my education.

”

—Kevin Gengler  
Dairy Science student



# AGRICULTURE—ONLINE

This two year AAS degree in agriculture provides students the opportunity to seek employment in numerous careers which include ag sales, farm management, supplies and service and production. The required coursework will provide students with a broad foundation and yet students may target their specific area of interest through selection of their ag electives. Whether you wish to be a full time student or to take a particular course relating to your role in agricultural, this program can meet your needs. If you have found dedicating specific times to attend classes a challenge, this program will allow extreme flexibility in the fact that all courses will be delivered via internet with the exception of the internship which will involve hours at an agricultural business of interest and convenient to your schedule.

Course #	Title	Credits
<b>FIRST TERM</b>		
<b>Fall Semester</b>		<b>18</b>
AGS242-A	Animal Health	3
AGA114-A	Principles of Agronomy	3
AGA154-A	Fundamentals of Soil Science	3
AGS113-A	Survey of the Animal Industry	3
AGB326-A	Farm Records Accounts & Analysis	3
CSC110-A	Introduction to Computers	3
<b>SECOND TERM</b>		
<b>Spring Semester</b>		<b>18–19</b>
AGB336-A	Agricultural Selling	3
AGB330-A	Farm Business Management	3
AGB235-A	Introduction to Agriculture Markets	3
Elective	Communications*	3
Elective	Agriculture	3
Elective	Math*	3–4
<b>THIRD TERM</b>		
<b>Summer Semester</b>		<b>3</b>
AGC936-A	Occupational Experience (Optional)	3
<b>FOURTH TERM</b>		
<b>Fall Semester</b>		<b>15</b>
AGB437-A	Commodity Marketing	3
AGP329-A	Introduction to GPS	3
Electives	Agriculture	3
Electives	Agriculture	3
Elective	General Education*	3
<b>FIFTH TERM</b>		
<b>Spring Semester</b>		<b>16</b>
AGH284-A	Pesticide Application Certification	3
AGA158-A	Soil Fertility	3
Electives	Agriculture	3
Electives	Agriculture	4
Elective	General Education*	3
<b>Elective Courses:</b>		
AGB331-A	Entrepreneurship in Agriculture	3
AGM155-A	Farm Equipment Management	2
AGC420-A	Issues in Agriculture	3
AGS319-A	Animal Nutrition	3
AGA376-A	Integrated Pest Management	3
AGB210-A	Ag Law	2
AGS228-A	Beef Cattle Science	5
AGS270-A	Foods of Animal Origin	3
Minimum Required Ag Electives		16

\*You may take any Math, Communications, or Humanities/Social Science course with A or E suffix.



## DAIRY HERDSPERSON

If you want to advance in the dairy industry, NCC's Dairy Herdperson Certificate will allow you to become a herdperson on a dairy farm. You will learn essential skills in the dairy business including courses in animal health, milk production, and animal reproduction. In addition you will take business management classes that will help you understand people and business management principles. As a student at NCC, you will learn up-to-date methods and techniques found in the dairy industry. Classes taken for the Dairy Herdperson certificate will transfer to the AAS Dairy Science degree program.

Course #	Title	Credits
AGS240-A	Animal Health	2
or		
AGS242-A	Animal Health	3
AGS335-E	Principles of Milk Production	3
AGS331-E	Animal Reproduction	3
MGT130-E	Principles of Supervision	3



## Associate of Applied Science Degree

from Northeast Iowa Community College

Four Semesters + 6 Week Term

- Four semesters through NCC
- 6 week term at Northeast Iowa Community College, Calmar, IA campus

# DAIRY SCIENCE

Northeast Iowa Community College and Northwest Iowa Community College are working cooperatively to provide a Dairy Science Program in northwest Iowa. There are four main components to this program:

- General education classes will be at NCC in a face-to-face setting.
- Ag Lecture classes will be offered via ICN originating from NICC, sent to NCC and area high schools.
- On-the-job training will be completed at a local dairy or dairy related business.
- An intensive dairy short course will be completed at NICC in the Northeast Iowa Community Based Dairy Center, Calmar, IA.

Students will earn an AAS degree in Dairy Science from NICC. The Dairy Center, an applied research demonstration and education facility, will create an excellent learning environment for students in the program.

Course #	Title	Credits	Location
<b>FIRST YEAR</b>			
<b>Fall Semester</b>		<b>19</b>	
AGS331-A	Animal Reproduction	3	ICN
AGS240-A	Animal Health	2	ICN
AGS332-A	Dairy: Herd Management Lab I	2	Local
AGS335-A	Principles of Milk Production	3	ICN
SPC112-A	Fundamentals of Speech	3	NCC
Elective	Agriculture	3	ICN
Elective	Math*	3	NCC
<b>Spring Semester</b>		<b>18</b>	
AGS351-A	Animal Genetics	2	ICN
AGS333-A	Dairy: Herd Management Lab II	2	Local
HSC163-A	Nutrition	3	NCC
or			
BIO151-A	Nutrition	3	NCC
Elective	Agriculture	5	ICN
Elective	Computer Science/Literacy*	3	NCC
Elective	Science*	3	NCC
<b>Summer Term</b>		<b>10</b>	
AGS350-A	Artificial Insemination of Cattle	1	ICN
AGS803-A	Dairy Internship I	3	NICC
AGS813-A	Dairy Internship II	3	NICC
AGS823-A	Dairy Internship III	3	NICC
<b>SECOND YEAR</b>			
<b>Fall Semester</b>		<b>17</b>	
AGS113-A	Survey of the Animal Industry	3	ICN
Elective	Agriculture	3	ICN
Elective	Communication*	3	NCC
Elective	General*	8	NCC
<b>Spring Semester</b>		<b>16</b>	
AGS944-A	Animal Agriculture Seminar	1	ICN
ECN110-E	Introduction to Economics	3	NCC
PSY112-E	Psychology of Human Relations	3	NCC
Elective	Agriculture	6	ICN
Elective	General*	3	NCC

NOTE: Satisfactory assessment scores and/or prerequisites are required for some courses.

ICN are courses offered over a two-way television system.

\*Must take course with A or E suffix.

# Business



“

I want to say thank you for receiving the Gordon R. Jurrens Scholarship.

I feel very blessed to have been given the opportunity to follow my dreams.

”

— *Stephanie Winkel*  
*Administrative Office Management*  
*graduate*

## Associate of Applied Science Degree

Four Semesters

- Clerical Accounting (option)—two semesters, graduates receive a diploma
- Fall semester entry for full-time students
- Part-time students may enter any term

# ACCOUNTING

The Accounting program combines lecture and laboratory work to develop accounting and business skills. As an Accounting student, you will work extensively with all aspects of the accounting cycle to prepare yourself for entry-level employment in a variety of accounting and financial settings. All Accounting program students must complete designated labs simultaneously with the classroom component.

After the first two semesters of the program, you will be prepared for an entry-level position in bookkeeping and general accounting. If you graduate from the two-year degree program, you will have additional skills useful in a public, private, or government accounting career.

As the economy grows, the number of business establishments will increase, requiring more accountants and auditors to set up books, prepare taxes, and provide management advice.

If you someday plan on continuing your education to get a bachelor's degree, you may want to consider the Pre-Professional Accounting program on page 36.



Course #	Title	Credits
<b>FIRST YEAR</b>		
<b>Fall Semester</b>		<b>22–23</b>
ACC131-A	Principles of Accounting I	4
ACC133-C	Principles of Accounting Lab I	2
BUS111-C	Business Math	2
BCA216-E	Introduction to Microsoft Office Applications	4
BCA217-E	Advanced Microsoft Office Applications	4
Elective	Math*	3–4
PSY111-A	Introduction to Psychology	3
or		
PSY102-E	Human and Work Relations	3
<b>Spring Semester</b>		<b>19</b>
ACC132-A	Principles of Accounting II	4
ACC134-C	Principles of Accounting Lab II	2
ACC312-E	Computer Accounting	4
COM741-E	Oral Communications	3
or		
SPC112-A	Public Speaking	3
ENG105-A	Composition I	3
or		
COM712-E	Business Communications	3
ECN120-A	Principles of Macroeconomics	3
or		
ECN130-A	Principles of Microeconomics	3
or		
ECN110-E	Introduction to Economics	3

Diploma in Clerical Accounting awarded after successful completion of above courses.

<b>SECOND YEAR</b>		
<b>Fall Semester</b>		<b>19</b>
ACC161-E	Payroll Accounting	3
ACC191-E	Financial Analysis	3
ACC231-A	Intermediate Accounting I	4
ACC233-C	Intermediate Accounting Lab I	2
ACC265-A	Income Tax Accounting	4
BUS185-A	Business Law I	3
<b>Spring Semester</b>		<b>21</b>
ACC222-A	Cost Accounting	4
ACC223-C	Cost Accounting Lab	2
ACC232-A	Intermediate Accounting II	4
ACC234-C	Intermediate Accounting Lab II	2
ACC362-E	Accounting Spreadsheets	4
ACC851-C	Tax Accounting Lab—VITA (Volunteer Income Tax Assistance)	2
BUS186-A	Business Law II	3

\*If you are completing an AAS degree you may complete MAT106-E Elementary Algebra or any math course with an A suffix.

NOTE: Satisfactory assessment scores and/or prerequisites are required for some courses.

## Diploma

Two Semesters

- Fall semester entry for full-time students
- Part-time students may enter any term

# ADMINISTRATIVE SECRETARIAL

If you are interested in the exciting atmosphere found in today's automated office, you will want to look into the Administrative Secretarial program at NCC!

NCC's program prepares you for the demanding work of an administrative assistant in any modern office. As an Administrative Secretarial student, you will learn basic office skills with an emphasis on word and information processing, communications, and human relations skills. You will develop essential technical and interpersonal skills through office simulations and hands-on laboratory applications using some of the newest high-tech equipment.

Graduates of the program find employment opportunities in a wide variety of business environments from small businesses to large corporations. You will be prepared for entry-level employment with potential for advancement in offices of virtually any industry.

Recommended academic preparation includes keyboarding skills and a strong language arts and communication background.

A two-year Administrative Office Management program is also available. See page 54.

Course #	Title	Credits
<b>Fall Semester</b>		<b>21-22</b>
ADM111-C	Keyboarding	4
BCA194-C	Word and Information Processing I	3
BCA195-C	Word and Information Processing II	3
BUS111-C	Business Math	2
ENG105-A	Composition I	3
or		
COM712-E	Business Communications	3
Elective	Math*	3-4
PSY111-A	Introduction to Psychology	3
or		
PSY102-E	Human and Work Relations	3
<b>Spring Semester</b>		<b>18-19</b>
ACC118-C	Introduction to Accounting Systems	3
or		
ACC131-A	Principles of Accounting I	4
ADM166-C	Office Procedures I	3
ADM167-C	Office Procedures II	3
BCA196-C	Word and Information Processing III	3
BCA197-C	Word and Information Processing IV	3
COM741-E	Oral Communications	3
or		
SPC112-A	Public Speaking	3

\*You may choose MAT108-C Math Fundamentals, MAT106-E Elementary Algebra, or any math course with an A suffix.

NOTE: Satisfactory assessment scores and/or prerequisites are required for some courses.



# ADMINISTRATIVE OFFICE MANAGEMENT

Do you want to prepare for a key support position in today's modern office environment? Consider the two-year Administrative Office Management program. It provides a broad background in multiple areas of office management. The program includes courses in Management, Business Law, Supervision, and Web Page Design, together with multiple elective opportunities. The electives provide you with the opportunity for additional concentration within an area of your choosing.

The program also provides Microsoft Certified Application Specialist (MCAS) training and prepares for Certified Professional Secretary testing.

Graduates are well prepared to work in the challenging and exciting office environment of a diversity of organizations ranging from a one-person professional office to the global corporation.

Course #	Title	Credits
<b>FIRST YEAR</b>		
<b>See curriculum on page 53.</b>		
<b>Summer (between years 1 and 2)</b>		<b>3 or 6</b>
	Office Internship (optional)***	3 or 6
<b>SECOND YEAR</b>		
<b>Fall Semester</b>		<b>14-15</b>
ENG105-A	Composition I	3
or		
ENG106-A	Composition II	3
or		
ENG108-A	Composition II: Technical Writing	3
BUS185-A	Business Law I	3
CSC115-A	Introduction to Computers II	3
	Program Elective**	2-3
	Restricted Elective	3
(Restricted elective: Choose from ECN110-E: Introduction to Economics or ECN120-A: Introduction to Macroeconomics or PSY111-A: Introduction to Psychology or SOC110-A: Introduction to Sociology)		

Course #	Title	Credits
<b>Spring Semester</b>		<b>15</b>
ADM946-C	Seminar	3
CIS207-A	Fundamentals of Web Programming	3
MGT130-A	Principles of Supervision	3
	Program Elective**	3
	Program Elective**	3

\*If you are completing an AAS degree you may complete MAT106-E Elementary Algebra or any math course with an A suffix.

\*\*Must have E or A suffix.

\*\*\*Prerequisite: Satisfactory completion of Administrative Secretarial Program.

NOTE: Satisfactory assessment scores and/or prerequisites are required for some courses.

## Suggested Program Electives

(Choose from list or see program advisor for other options.)

ACC131-A	Principles of Accounting I	4
ACC132-A	Principles of Accounting II	4
ACC161-E	Payroll Accounting	4
BCA240-E	Graphic Design	3
BUS102-A	Introduction to Business	3
BUS150-A	E-Commerce	3
BUS186-A	Business Law II	3
BUS250-A	Principles of Real Estate	3
BUS265-A	Risk Management	3
ECN110-E	Introduction to Economics	3
ECN120-A	Principles of Macroeconomics	3
ECN130-A	Principles of Microeconomics	3
FIN101-A	Principles of Banking	3
FIN121-A	Personal Finance	3
HIT602-C	Medical Transcription	3
HSC113-E	Medical Terminology	2
MGT101-A	Principles of Management	3
MGT110-A	Small Business Management	3
MGT125-A	Performance Appraisal	3
MGT170-A	Human Resource Management	3
MGT178-A	Employment Law	3
MGT191-A	Compensation Management	3
MKT110-A	Principles of Marketing	3
MKT140-A	Principles of Selling	3
PSY111-A	Introduction to Psychology	3
SOC110-A	Introduction to Sociology	3

# BUSINESS

If you are a person who wants a fast track to the working world, this is the program for you. The Business program allows you to get a good job after only one year of classes.

Courses in this program focus on each different aspect of business, with a component of general education courses designed to prepare you for immediate employment in the challenging field of retailing. Your people skills will be important to your success in this customer-oriented career.

After graduating from this program, you have a variety of career options. Long-term possibilities may include store management or owning your own business.

Course #	Title	Credits
<b>General Education*</b>		<b>9</b>
<b>Communications</b>		<b>3</b>
<b>Math</b>		<b>3</b>
<b>Social Sciences</b>		<b>3</b>
<b>Related Business</b>		<b>8-10</b>
ACC118-C	Introduction to Accounting Systems	3
or		
ACC131-A	Principles of Accounting I	4
CSC110-A	Introduction to Computers	3
or		
CSC115-A	Introduction to Computers II	3
BUS111-C	Business Math	2
or		
MAT110-A	Math for Liberal Arts	3
<b>Business Core</b>		<b>12</b>
FIN121-A	Personal Finance	3
MKT110-A	Principles of Marketing	3
MGT101-A	Principles of Management	3
BUS102-A	Introduction to Business	3
<b>Business/Computer Elective</b>		<b>3</b>
<b>Business Electives</b>		
<i>See list on page 43 for complete list of electives.</i>		
*Must take General Education courses with A, C, or E suffix.		
NOTE: Satisfactory assessment scores and/or prerequisites are required for some courses.		



# Health



“

All the staff at NCC were very friendly, from the staff in the office who facilitated the transfer of credits from another college I had attended, to all my instructors in the Nursing program and general classes.

”

—Leah Egdorf  
Nursing graduate





**Associate of Applied Science Degree**

Four Semesters &amp; One Summer Term

- Fall semester entry for full-time students
- Part-time students may enter any term; however course prerequisites and corequisites must be followed

# HEALTH INFORMATION TECHNOLOGY

If you wish to combine your organizational and analytical skills with your interest in healthcare, a career in Health Information Technology could be for you! As a Health Information Technician, you play a vital role in making our healthcare system work. You perform data collection and analysis needed by doctors, nurses, and other healthcare professionals.

As a student in the HIT program, you will learn the necessary skills to become a valued member of the healthcare team. These skills include:

- Maintaining healthcare records consistent with medical, administrative, ethical, legal, technical, and regulatory requirements
- Collecting, validating, and analyzing healthcare data
- Assigning code numbers to diagnoses and procedures for indexing health data and processing bills
- Answering legal, governmental, and insurance company inquiries
- Supervising human resources for effective and efficient health record processing

The Health Information Management (HIM) Associate Degree program is accredited by the Commission on Accreditation for Health Informatics and Information Management Education (CAHIIM). As a graduate, you will be eligible to take the national certification examination leading to the Registered Health Information Technician (RHIT) credential.

After graduating from this program, you could work as a supervisor of a Health Information Management department, a Quality Assurance Coordinator, a clinical coder/ abstractor, or a medical transcriptionist. Excellent opportunities also exist in research firms, government agencies, pharmaceutical firms, insurance companies, consulting businesses, and telecommuting from your home.

To graduate from this program, you must receive a "C" or better in all courses with the "HIT" or "HSC" course number prefix.

Health Information Technology courses may be taken online through the Iowa Community College Online Consortium (ICCO). Register through NCC for these courses.

Course #	Title	Credits
<b>FIRST YEAR</b>		
<b>Fall Semester</b>		<b>15</b>
BIO165-A	Human Anatomy and Physiology I	3
BIO167-A	Human Anatomy and Physiology I Lab	1
CSC110-A	Introduction to Computers	3
HIT370-C	Health Records in Acute Care	3
HSC113-E	Medical Terminology	2
Elective	Math*	3

<b>Spring Semester</b>		<b>17</b>
BIO170-A	Human Anatomy and Physiology II	3
BIO172-A	Human Anatomy and Physiology II Lab	1
BIO198-E	Introduction to Pathology	3
HIT250-E	Coding I	3
HIT380-C	Health Records in Alternative Care Settings	3
HIT594-C	HIT Practicum A	1
Elective	General Education (suggest Public Speaking)	3

NOTE: Satisfactory assessment scores and/or prerequisites are required for some courses.

<b>SECOND YEAR</b>		
<b>Fall Semester</b>		<b>15</b>
BCA104-E	Management of Information Systems	2
ENG105-A	Composition I	3
or		
COM712-E	Business Communications	3
HIT120-E	Pharmacology for HIT	1
HIT251-E	Coding II	3
HIT420-C	Legal Aspects of Health Information	2
HIT451-C	Allied Health Statistics	3
HIT595-C	HIT Practicum B	1

<b>Spring Semester</b>		<b>17</b>
HIT430-E	Quality Improvement	2
HIT252-E	Coding III	3
HIT315-C	Electronic Applications for Health Care Data	2
HIT946-C	Seminar	1
HIT290-C	Reimbursement Methods	3
MGT130-A	Principles of Supervision	3
Elective	Humanities/Social Sciences**	3

<b>Summer Term</b>		<b>4</b>
HIT597-C	HIT Practicum II	4

**Program Elective**

HIT602-C	Medical Transcription	3
This is a highly recommended course for all HIT majors. This course is generally offered once each year.		

\*You must complete MAT106-E Elementary Algebra or any math course with an A suffix.

\*\*You may select any Humanities/Social Sciences course with an A suffix.

## Diploma

Two Semesters & one summer term

- Fall semester entry

# PRACTICAL NURSING

If you are a people person and enjoy caring for others, Practical Nursing could be the field for you.

The Practical Nursing program prepares you to provide comprehensive care for clients' physical and psychosocial needs. Nursing courses provide basic knowledge and skills in the medical-surgical, geriatric, maternity, pediatric, and mental health nursing areas. Courses also focus on care giving, communication, teaching, professional, and managerial roles. Local health facilities provide the opportunity to participate in supervised clinical experience.

To be accepted into the Practical Nursing program, you must have a high school diploma (with a 2.0 grade point average) or a High School Equivalency Diploma. You also need three years of science completed at the high school or post high school level (with a grade of "C" or better). An academic background in life sciences is recommended.

A health assessment, current immunization records, child and dependent adult abuse, criminal background check, and the CPR for healthcare providers course is required before you can begin clinical practice. To become a Licensed Practical Nurse, you must pass the NCLEX (license) exam. NCC graduates have consistently scored at or above the national and state average on the NCLEX exam.

The Practical Nursing program will prepare you to work in a wide variety of healthcare organizations including hospitals, clinics, long-term care facilities, home healthcare, wellness centers, schools, and insurance companies.

To progress and graduate from this program, you must receive a "C" or better in all required courses.

Course #	Title	Credits
<b>FIRST YEAR</b>		
<b>Fall Semester</b>		<b>21</b>
Elective	Math*	3
BIO165-A	Human Anatomy and Physiology I	3
BIO167-A	Human Anatomy and Physiology I Lab	1
BIO151-A	Nutrition	3
or		
HSC163-A	Nutrition	3
PNN651-C	Practical Nursing I	8
PNN203-C	Introduction to Pharmacology	1
HSC113-E	Medical Terminology	2
<b>Spring Semester</b>		<b>19</b>
BIO170-A	Human Anatomy and Physiology II	3
BIO172-A	Human Anatomy and Physiology II Lab	1
PNN652-C	Practical Nursing II***	12
PSY121-A	Developmental Psychology	3
<b>Summer Term</b>		<b>8</b>
PNN653-C	Practical Nursing III	5
Elective	Communications**	3

\*You may select any math course with a suffix of A.

\*\*You may select any communications course with a suffix of A, C, or E. ADN applicants are required to complete a communications course with A suffix.

\*\*\*To advance into Practical Nursing II you must receive a "C" or above in Human Anatomy & Physiology I/Lab.

Math, Nutrition, Developmental Psychology, Human Anatomy and Physiology I & II must be completed prior to taking Practical Nursing III.

NOTE: Satisfactory assessment scores and/or prerequisites are required for some courses.

Prerequisite to Practical Nursing I (PNN651-C) is completion of the 75-Hour Nurse Aid Course approved by the Iowa Department of Inspection and Appeals. The course must have been completed within the last two years, or you must have worked as a CNA within the last two years.



## Diploma

Four Semesters

- Fall semester entry

# EXTENDED PRACTICAL NURSING

NCC's Extended Practical Nursing program was developed to provide a more flexible option for students with other family and work responsibilities.

The Extended Practical Nursing program prepares you to provide comprehensive care for clients' physical and psychosocial needs. Nursing courses provide basic knowledge and skills in the medical-surgical, geriatric, maternity, pediatric, and mental health nursing areas. Courses also focus on care giving, communication, teaching, professional, and managerial roles. Local health facilities provide the opportunity to participate in supervised clinical experience.

To be accepted into the Practical Nursing program, you must have a high school diploma (with a 2.0 grade point average) or a High School Equivalency Diploma. You also need three years of science completed at the high school or post high school level (with a grade of "C" or better). An academic background in life sciences is recommended.

A health assessment, current immunization records, child and dependent adult abuse, criminal background check, and the CPR for healthcare providers course is required before you can begin clinical practice. To become a Licensed Practical Nurse, you must pass the NCLEX (license) exam. NCC graduates have consistently scored at or above the national and state average on the NCLEX exam.

The Practical Nursing program will prepare you to work in a wide variety of healthcare organizations including hospitals, clinics, long-term care facilities, home healthcare, wellness centers, schools, and insurance companies.

To progress and graduate from this program, you must receive a "C" or better in all required courses.

Course #	Title	Credits
<b>FIRST YEAR</b>		
<b>Fall Semester</b>		<b>16</b>
BIO165-A	Human Anatomy and Physiology I	3
BIO167-A	Human Anatomy and Physiology I Lab	1
BIO151-A	Nutrition	3
or		
HSC163-A	Nutrition	3
PNN203-C	Introduction to Pharmacology	1
PNN655-C	Practical Nursing I Extended	6
HSC113-E	Medical Terminology	2
<b>Spring Semester</b>		<b>13</b>
BIO170-A	Human Anatomy and Physiology II	3
BIO172-A	Human Anatomy and Physiology II Lab	1
PNN656-C	Practical Nursing II Extended***	6
Elective	Math*	3
<b>SECOND YEAR</b>		
<b>Fall Semester</b>		<b>10</b>
PNN657-C	Practical Nursing III Extended	7
PSY121-A	Developmental Psychology	3
<b>Spring Semester</b>		<b>9</b>
PNN658-C	Practical Nursing IV Extended	6
Elective	Communications**	3

\*You may select any math course with a suffix of A.

\*\*You may select any communications course with a suffix of A, C, or E. ADN applicants are required to complete a communications course with A suffix.

\*\*\*To advance into Practical Nursing II Extended you must receive a "C" or better in Human Anatomy & Physiology I/Lab.

Math, Nutrition, Human Anatomy and Physiology I & II must be completed prior to the second year of the Extended Practical Nursing program. These courses may be taken during the summer term.

NOTE: Satisfactory assessment scores and/or prerequisites are required for some courses.

Prerequisite to Practical Nursing I (PNN655-C) is completion of the 75-Hour Nurse Aid Course approved by the Iowa Department of Inspection and Appeals. The course must have been completed within the last two years, or you must have worked as a CNA within the last two years.

# ASSOCIATE DEGREE NURSING

The Associate Degree Nursing completion program is designed for students who have successfully completed the Practical Nursing program at Northwest Iowa Community College, or for the Licensed Practical Nurse eligible to practice in Iowa who wishes to continue study for an Associate Degree in Nursing (RN). Graduates are eligible to take the National Council Licensing Examination (NCLEX) given by the National Council of State Boards of Nursing. Satisfactory performance on the examination (NCLEX) is required for practice as a Registered Nurse (RN).

Students in the ADN program learn current nursing theory through comprehensive class and laboratory sessions and apply this knowledge at cooperating healthcare facilities. The one-year curriculum prepares students in medical-surgical, geriatric, obstetrical, pediatric, and psychiatric nursing areas. Graduates may also transfer credits to four-year programs for continued education in nursing.

Attractive employment opportunities for nurses are available in all areas of the country. Current shortages of nursing personnel have created numerous openings for registered nurses.

Applicants are required to meet the program-specific criteria for admission and progression. Transferring students must meet course requirements of the Iowa Articulation agreement for Nursing Education. A minimum grade of "C" must be obtained in all nursing and support courses to be eligible for graduation.

Course #	Title	Credits
<b>The following general education courses are required</b>		<b>6</b>
Elective	Math*	3
Elective	Communications**	3
<b>Fall Semester</b>		<b>20</b>
ADN644-C	ADN Nursing IA (first half)	7
ADN645-C	ADN Nursing IB (second half)	6
ADN215-A	Clinical Pharmacology	3
BIO183-A	Microbiology	3
BIO184-A	Microbiology Lab	1
<b>Spring Semester</b>		<b>19</b>
ADN646-C	ADN Nursing IIA***(first half)	7
ADN647-C	ADN Nursing IIB (second half)	6
PSY241-A	Abnormal Psychology	3
SOC110-A	Introduction to Sociology	3

NOTE: Satisfactory assessment scores and/or prerequisites are required for some courses.

\*You may select any math course with a suffix of A.

\*\*You may select any communications course with a suffix of A.

\*\*\*Documentation of current licensure as a Licensed Practical Nurse and eligibility to practice in Iowa are required prior to admission to ADN644-C, students graduating in the July immediately preceding the August start date, must have their current licensure prior to admission to ADN645-C. There will be no waivers to this policy. A student who has been out of the practical nursing program for over a year and has not passed the PN NCLEX will not be admitted to the ADN program.

\*\*\*\*The following courses are required prior to admission to the Associate Degree Nursing Program.

- Human Anatomy & Physiology I & II Lab
- Nutrition
- Developmental Psychology
- Medical Terminology

Students admitted to the Associate Degree Nursing Program beginning in 2010 will be required to meet new admission criteria.



## PARAMEDIC

The Paramedic program, offered through an instructional cooperation between Northwest Iowa Community College and the University of Iowa Hospital and Clinics, will prepare you for a career in pre-hospital emergency medicine. This program will cover the National Registry Intermediate, Iowa Paramedic Curriculum.

Paramedics are trained to provide immediate advanced treatment to a patient, frequently in emergency situations. This program provides you with both theory and skills training. Graduates of this program will have the knowledge and skills to initiate and maintain treatment for medical, trauma, and cardiac emergencies. Skills will include IV initiation, EKG monitoring, IM and SQ injections, medication administration, endotracheal intubation, and other advanced life-saving procedures.

As a student in this program, you will have the opportunity for hands-on field experience as well as paramedic clinical experience in a large hospital environment.

You must be certified at the EMT-B level before starting the Paramedic core curriculum. For continuing enrollment in the program, you must maintain your eligibility in the University of Iowa Hospital and Clinics course. Classes begin on the first or second Tuesday in September. For more information, contact the Emergency Services Coordinator at NCC.

Students may enroll in the general education core any term; however, the first Tuesday of September of each year is the only start date for the Paramedic core courses. Final testing is completed at the University of Iowa Hospital in August.

Course #	Title	Credits
<b>*COMMUNICATIONS</b>		<b>9</b>
<b>*MATH/SCIENCE</b>		<b>9</b>
(One each minimum)*		
<b>Required:</b>		
BIO165-A	Human Anatomy and Physiology I	3
BIO167-A	Human Anatomy and Physiology I Lab	1
BIO170-A	Human Anatomy and Physiology II	3
BIO172-A	Human Anatomy and Physiology II Lab	1
<b>SOCIAL SCIENCES</b>		<b>9</b>
<b>Required:</b>		
PSY111-A	Introduction to Psychology	3
PSY241-A	Abnormal Psychology	3
<b>HUMANITIES</b>		<b>9</b>
Select from at least two disciplines		
<b>Suggested courses:</b>		
FLS131-A	Elementary Spanish I	3
FLS132-A	Elementary Spanish II	3
REL101-A	Survey of World Religions	3
<b>*Additional from above</b>		<b>9</b>
*All General Education electives must have A suffix.		
<b>PARAMEDIC CORE COURSES</b>		<b>8-9</b>
<b>Required:</b>		
EMS219-A	EMT Basic I	3
EMS225-A	EMT Basic II	3
HSC113-A	Medical Terminology	2
or		
HSC114-A	Medical Terminology	3
<b>Courses in University of Iowa Hospital &amp; Clinics Training Program</b>		<b>18</b>
EMS550-A	Preparatory Training for the Paramedic	2
EMS555-A	Airway Management and Ventilation	1
EMS560-A	Patient Assessment	1
EMS565-A	Trauma	1
EMS570-A	Medical Emergencies and Cardiovascular Care	5
EMS575-A	OB/Pediatrics/Geriatrics	2
EMS580-A	Assessment Based Management	1
EMS585-A	Clinical	5

# RADIOLOGIC TECHNOLOGY

Radiologic Technology is a great career choice for someone interested in the healthcare field. This two-year comprehensive program consists of radiologic courses, clinical experience, and general studies. The classroom courses are taught at the NCC campus, and clinical experience is obtained at various approved clinical sites.

Radiologic technologists, also known as radiographers, produce x-ray films of parts of the human body for use in diagnosing medical problems. With the ever-changing technology in the health care arena, radiologic technicians are becoming more involved with computerized tomography scanners (CT), which produce cross sectional views and magnetic resonance imaging (MRI), which utilizes giant magnets and radio waves rather than radiation to create a diagnostic image, as well as other specialized fields of interest to new graduates of the Radiologic Technology program.

National, state and local data indicates that there will be a continued need for Radiologic Technologists through the next decade.

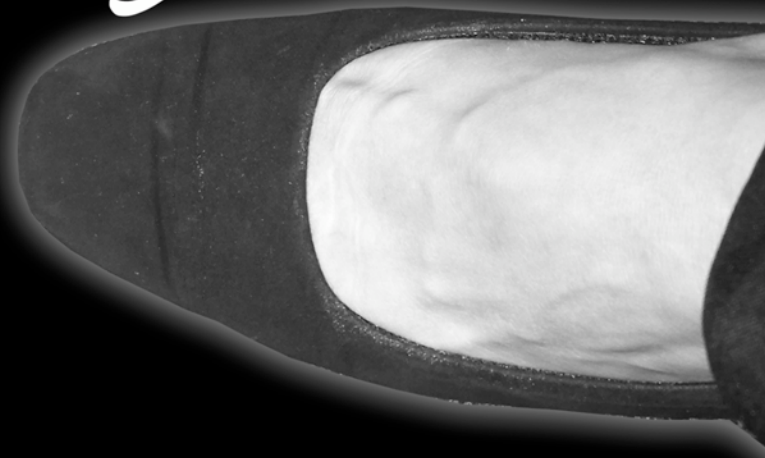
Course #	Title	Credits
<b>FIRST YEAR</b>		
<b>Prerequisite Prior To Term 1</b>		<b>4</b>
BIO165-A	Human Anatomy and Physiology I	3
BIO167-A	Human Anatomy and Physiology I Lab	1
<b>TERM 1</b>		
<b>Fall Semester</b>		<b>18</b>
BIO170-A	Human Anatomy and Physiology II	3
BIO172-A	Human Anatomy and Physiology Lab II	1
HSC113-E	Medical Terminology	2
RAD106-E	Foundations of Radiologic Technology	2
RAD122-E	Radiographic Procedures I	4
RAD210-E	Clinical Education I	4
RAD320-E	Imaging I	2
<b>TERM 2</b>		
<b>Spring Semester</b>		<b>17</b>
RAD102-E	Radiologic Patient Care	1
RAD142-E	Radiographic Procedures II	4
RAD230-E	Clinical Education II	4
RAD365-E	Imaging II	2
RAD115-E	Fundamentals of Physics	3
Elective	Math*	3
<b>TERM 3</b>		
<b>Summer Semester</b>		<b>8</b>
RAD182-E	Special Procedures	2
RAD162-E	Radiographic Procedures III	3
RAD260-E	Clinical Education III	3
<b>2ND YEAR</b>		
<b>TERM 4</b>		
<b>Fall Semester</b>		<b>18</b>
ENG105-A	Composition I	3
or		
SPC112-A	Public Speaking	3
RAD510-E	Clinical Education IV	6
RAD761-E	Film Evaluation I	3
RAD795-E	Physics for Radiographers	2
RAD850-E	Radiation Protection and Biology	3
RAD890-E	Quality Assurance	1
<b>TERM 5</b>		
<b>Spring Semester</b>		<b>15</b>
PSY111-A	Introduction to Psychology	3
RAD362-E	Computed and Digital Radiography	2
RAD550-E	Clinical Education V	6
RAD690-E	Cross Sectional Anatomy	1
RAD750-E	Radiographic Pathology	3
<b>TERM 6</b>		
<b>Summer Semester</b>		<b>6</b>
RAD946-E	Seminar	2
RAD580-E	Clinical Education VI	4

NOTE: Satisfactory assessment scores and/or prerequisites are required for some courses.

\*You may select any math course with a suffix of A.



# Photography



The Professional Photography program will look at three major areas of training. These are the areas of portrait photography, commercial photography and photojournalism.

# PROFESSIONAL PHOTOGRAPHY

The Professional Photography Program will look at three major areas of training. These are the areas of portrait photography, commercial photography and photojournalism. The program would include lectures, demonstrations and significant practical application assignments in studio areas. In addition to such courses as photo reproduction, wedding photography and electronic imaging, the program will provide instruction in areas which assist individuals who wish to start their own business.

Course #	Title	Credits
<b>FIRST YEAR</b>		
<b>Fall Semester</b>		<b>18</b>
PHT135-E	Digital Fundamentals	3
Elective	Math*	3
PHT106-E	Introduction to Electronic Imaging	3
PHT102-E	Photo Design I	3
PHT103-E	Print Presentation Techniques	3
PHT134-E	Theory of Photography	3
<b>Spring Semester</b>		<b>18</b>
PHT104-E	Introduction to Lighting	3
PSY102-E	Human and Work Relations	3
or		
PSY111-A	Introduction to Psychology	3
or		
SOC110-A	Introduction to Sociology	3
PHT132-E	Photo Design II	3
PHT212-E	Intermediate Electronic Imaging	3
BCA240-E	Graphic Design	3
ENG105-A	Composition I	3
<b>SECOND YEAR</b>		
<b>Fall Semester</b>		<b>18</b>
PHT204-E	Basic Commercial Photography	3
PHT208-E	Basic Photojournalism	3
PHT202-E	Basic Portraiture	3
SPC112-A	Public Speaking	3
PHT246-E	Advanced Electronic Imaging	3
PHT210-E	Visual Communications	3
<b>Spring Semester</b>		<b>18</b>
PHT232-E	Advanced Portraiture	6
MGT110-A	Small Business Management	3
MKT110-A	Principles of Marketing	3
Program Electives**		6

\*You may select any math course with a suffix of A.

\*\*Recommended Electives: Business & Management Electives.



# Biotechnology



“

I really enjoy NCC! The staff and everyone at NCC work hard to make sure that I get the best possible education that I can.

”

— *Haley Bouwman*  
*Biotechnology Lab Technician student*

**Associate of Applied Science**  
 Four Semesters & Two Summer Terms  
 • Fall semester entry only

# BIOTECHNOLOGY LAB TECHNICIAN

NCC's Biotechnology Lab Technician Programs curriculum is designed to meet the increasing demands of businesses and industries seeking skilled lab technicians for employment in laboratory and industrial settings and as quality control/quality assurance technicians. Students who complete the program will have necessary laboratory & communication skills needed for employment. Individuals who like the challenge of working in a laboratory are encouraged to apply.

Students will learn how to operate equipment and master techniques commonly used in a lab. This will include maintenance of cell cultures, genetic engineering techniques, protein separation techniques, UV spectrophotometry, High Performance Liquid Chromatography (HPLC), and record keeping to name a few.

**Two new programs, Bio-Fuels Operator and Bio-Fuels Controls Technician, will be starting soon. Contact the Director of Enrollment for further information.**

Course #	Title	Credits
<b>FIRST YEAR</b>		
<b>Fall Semester</b>		<b>14</b>
SCI110-A	Basic Lab Methods for Lab Technician	3
BIO261-A	Introduction to Biotechnology	3
BIO262-A	Introduction to Biotechnology Lab	1
CHM163-A	General Chemistry I	3
CHM164-A	General Chemistry I Lab	1
SCI119-A	Lab Safety	1
BIO275-A	Careers in Biotechnology	1
SCI118-A	Basic Lab Math	1

<b>Spring Semester</b>		<b>15</b>
SCI125-A	Lab Instrumentation I	4
MAT156-A	Statistics	3
CSC110-A	Introduction to Computers	3
BIO911-A	Occupational Work Experience for Biotechnicians	1
BIO212-A	General Biology I	3
BIO213-A	General Biology I Lab	1

<b>Summer Session</b>		<b>6</b>
BIO264-A	Fermentation Processes	2
SCI126-A	Lab Instrumentation II	4

<b>SECOND YEAR</b>		
<b>Fall Semester</b>		<b>16 or 17</b>
BIO183-A	Microbiology	3
BIO184-A	Microbiology Lab	1
BIO242-A	Issues in Biotechnology	3
Elective	Social Sciences/Humanities*	3
SPC112-A	Public Speaking	3
Elective	Technical**	3 or 4

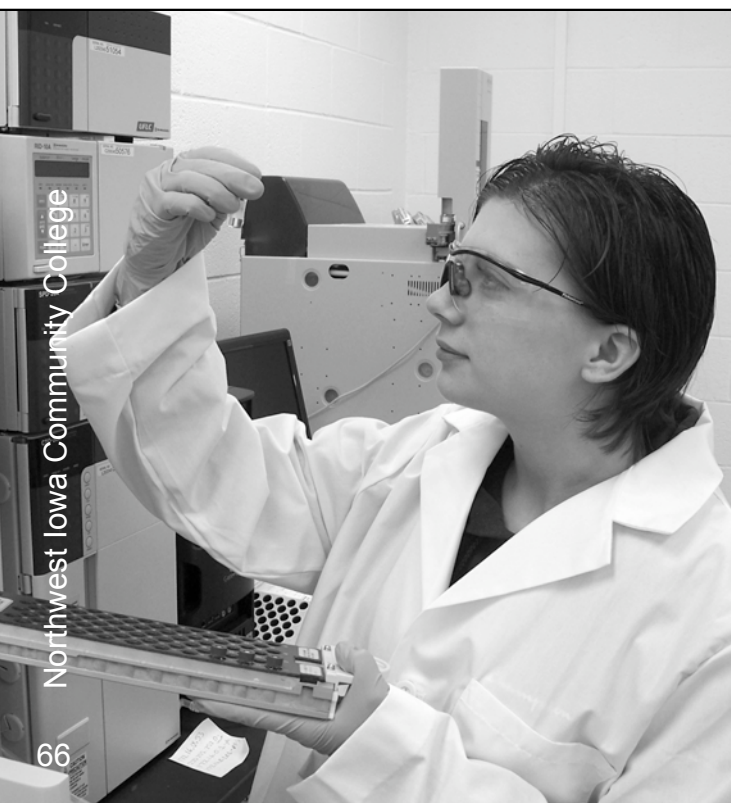
<b>Spring Semester</b>		<b>13 or 14</b>
BIO265-A	Molecular Biology	3
BIO266-A	Molecular Biology Lab	1
BIO269-A	Basic Cell Culture	2
BIO910-A	Biotechnology Seminar	1
ENG105-A	Composition I	3
Elective	Technical**	3 or 4

<b>Summer Session</b>		<b>6</b>
BIO918-A	Occupational Coop for Biotechnicians	6

<b>**Technical Electives</b>		
BIO451-A	Introduction to Bioinformatics	3
BIO146-A	Genetics	3
CHM261-A	Organic Chemistry	4
CHM292-A	Biochemistry	3

\*You may take any Social Sciences/Humanities course with A or E suffix.

Target Industries: Ethanol Production, Dairy, Agricultural, Animal/Pharmaceutical, Quality Control



# Computers



“

NCC gave me the credentials necessary to be successful. I came back to school after being out in the workforce and definitely see the benefit of earning a degree!

”

—Paul Richards

*Computer Programming Technology and  
Computer Networking Technology graduate*



## Associate of Applied Science Degree

Four Semesters

- Fall semester entry for full-time students
- Part-time students may enter any term

# COMPUTER NETWORKING TECHNOLOGY

If you enjoy problem solving and working with others, a career in Computer Networking Technology could be right for you. Computer Networking is taught through hands-on projects in multiple networking environments. As a Computer Networking student, you will take your fundamental networking courses and simultaneously attend a four semester Cisco Certified Networking Academy (CCNA). In the spring of your second year, you will be given the opportunity of preparing for the CCNA Certification Exam, which is highly valued and sought after in industry. The fundamental courses teach networking and routing; computer architecture and PC troubleshooting; the installation, administration, updating, and troubleshooting of major network operating systems including the Windows 200x family and Linux; Comprehensive security of networks, network equipment, and operating systems; The principles and experience with WAN technologies such as Frame Relay, T1's, ISDN, PPP, VPN, POTS, digital telephony, and IP telephony; Wireless implementation, security, and utilization; Cable making including CAT5, fiber optic, telephone, and coax installation and termination; and the principles of telecommunications including PBX, voice mail, and VOIP installation and configuration.

Other fundamental courses include program logic and design, introductory object orientated programming in C++ and Java and database utilization. All courses are taught with a strong emphasis on business application and utilization.

Computer industries now account for more than one-third of the job growth. Upon graduation from this program, you will have the potential for employment in a wide variety of networking subfields including: network administration; Internet technology support; network systems installation, development and/or maintenance support; network security specialization; telephone systems installation, support and/or maintenance; wireless installation, support and/or maintenance; computer repair services; and/or customer/employee support.

Course #	Title	Credits
<b>FIRST YEAR</b>		
<b>Fall Semester</b>		<b>20</b>
Elective	Math*	3
CSC110-A	Introduction to Computers	3
or		
CSC115-A	Introduction to Computers II	3
or		
CIS207-A	Fundamentals of Web Programming	3
CIS303-E	Introduction to Database	3
CIS121-E	Introduction to Programming Logic	3
CIS142-E	Computer Science	4
NET213-E	CISCO Networking	4
<b>Spring Semester</b>		<b>18</b>
BUS102-A	Introduction to Business	3
or		
BUS150-A	E-Commerce	3
or		
FIN121-A	Personal Finance	3
NET102-E	Computer Architecture	3
CIS143-E	Advanced Computer Science	4
NET223-E	CISCO Routers	4
NET445-E	Linux Operating System	4
<b>SECOND YEAR</b>		
<b>Fall Semester</b>		<b>18</b>
ENG105-A	Composition I	3
or		
COM712-E	Business Communication	3
CIS650-E	Operating Systems Support	3
NET233-E	CISCO Switches	4
NET317-E	Windows Servers & Workstations	4
NET404-E	Linux Network Administration	4
<b>Spring Semester</b>		<b>18</b>
PSY111-A	Introduction to Psychology	3
or		
PSY102-E	Human & Work Relations	3
COM741-E	Oral Communications	3
or		
COM741-A	Public Speaking	3
NET243-E	CISCO Wide Area Networks (WAN)	4
NET614-E	Network Security	4
NET751-E	Telecommunications	4
*You may complete MAT106-E Elementary Algebra or any math course with an A suffix.		
NOTE: Satisfactory assessment scores and/or prerequisites are required for some courses.		

## Associate of Applied Science Degree

Four Semesters

- Fall semester entry for full-time students
- Part-time students may enter any term

# COMPUTER PROGRAMMING TECHNOLOGY

If you have technical skills, are interested in computers, and want to be on the cutting-edge of the industry, this is a field for you to consider.

The Computer Programming Technology curriculum emphasizes hands-on software project development. Program design, programming languages, World Wide Web design and development, and user support principles are covered extensively. The fundamental concepts of networks, computer operations, and troubleshooting are taught with a strong emphasis on business applications.

During the first year you will learn how to operate, customize, and program database C and Java software on PCs and in networked environments.

Computer industries now account for more than one-third of the job growth. Upon graduation from this program, you have the potential for employment in programming, web page development or customer support/help desks.

Course #	Title	Credits
<b>FIRST YEAR</b>		
<b>Fall Semester</b> <b>17</b>		
Elective	Math*	3
CSC110-A	Introduction to Computers	3
or		
CSC115-A	Introduction to Computers II	3
CIS121-E	Introduction to Programming Logic	3
CIS142-E	Computer Science	4
NET213-E	CISCO Networking	4
<b>Spring Semester</b> <b>19</b>		
BUS102-A	Introduction to Business	3
or		
BUS150-A	E-Commerce	3
or		
FIN121-A	Personal Finance	3
NET102-E	Computer Architecture	3
CIS143-E	Advanced Computer Science	4
CIS207-A	Fundamentals of Web Programming	3
CIS303-E	Introduction to Data Base	3
BCA240-E	Graphic Design	3
<b>SECOND YEAR</b>		
<b>Fall Semester</b> <b>18</b>		
ENG105-A	Composition I	3
or		
COM712-E	Business Communication	3
CIS650-E	Operating Systems Support	3
CIS176-E	Advanced Java	4
CIS605-E	Visual Basic	4
CIS219-E	Database-Driven Web Sites	4
<b>Spring Semester</b> <b>18</b>		
PSY111-A	Introduction to Psychology	3
or		
PSY102-E	Human & Work Relations	3
COM741-E	Oral Communications	3
or		
SPC112-A	Public Speaking	3
CIS613-E	Advanced Visual Basic	4
CIS173-E	C# Programming	4
CIS651-E	User Software Support	4

\*You may complete MAT106-E Elementary Algebra or any math course with an A suffix.

NOTE: Satisfactory assessment scores and/or prerequisites are required for some courses.

# Construction



“

I didn't know what I wanted to do. I used to play with Tonka trucks so I thought I would give heavy equipment a try. I would definitely recommend NCC!

”

—Matt Mitchell

*Heavy Equipment & Operation Technology graduate*



**Diploma**

Two Semesters &amp; One Summer Term

- Fall semester entry only

# CARPENTRY

As a carpentry student, you will have hands-on experience in the shop and field experience involving framing, roofing, siding, drywall installation, taping and texturing, interior finishing, and cabinet/countertop installation, along with classroom time. An emphasis is placed on the care and use of hand and power tools, equipment and materials, and common systems of frame construction. You will also learn about drafting, blueprint reading, trade math, estimating and safety.

You will gain fundamental instruction through the frame-to-finish construction of an energy efficient two- or three-bedroom house. Successful students can become employed in an industry that has an increasing need for skilled carpenters.

Course #	Title	Credits
<b>Fall Semester</b>		<b>18</b>
CON160-C	Principles of Carpentry I	5
CON176-C	Carpentry Lab I	10
Elective	Math*	3
<b>Spring Semester</b>		<b>18</b>
CON161-C	Principles of Carpentry II	5
CON178-C	Carpentry Lab II	10
Elective	Communications**	3
<b>Summer Term</b>		<b>9</b>
CON169-C	Principles of Carpentry III	2
CON193-C	Carpentry Lab III	5
CON113C	Construction Printreading	2

NOTE: Satisfactory assessment scores and/or prerequisites are required for some courses.

\* You may select any math course with A, E, or C suffix.

\*\*You may select any communications course with A or E suffix.

Students should check specific course requirements under the Construction Technology program if they are considering completing the AAS Degree option.



# CONSTRUCTION TECHNOLOGY

The Construction Technology program is designed to prepare you for a variety of entry level positions in the construction field, not just as carpenters. Other areas of employment include customer service representatives, inside or outside sales, designers and estimators for building material, contracting, and hardware supply businesses. Trainee positions in either lumber yard or construction management are still other options, while others may choose to start their own business. The Department of Labor statistics indicate that the majority of supervisors in the building industry are developed and promoted from the carpentry trade.

You will receive instruction in business and supervisory management, blueprint reading, estimating and computerized design. Successful students will be prepared for the challenges of leadership in an exciting and growing industry.

Course #	Title	Credits
<b>FIRST YEAR</b>		
<b>Fall Semester</b>		<b>18</b>
CON160-C	Principles of Carpentry I	5
CON176-C	Carpentry Lab I	10
Elective	Math***	3
<b>Spring Semester</b>		<b>18</b>
CON161-C	Principles of Carpentry II	5
CON178-C	Carpentry Lab II	10
Elective	Communications*	3
<b>Summer Term</b>		<b>9</b>
CON169-C	Principles of Carpentry III	2
CON193-C	Carpentry Lab III	5
CON113-C	Construction Printreading	2
<b>SECOND YEAR</b>		
<b>Fall Semester</b>		<b>15</b>
CON203-C	Construction Costs and Estimates I	3
CSC110-A	Introduction to Computers	3
FIN121-A	Personal Finance	3
MGT130-A	Principles of Supervision	3
Elective	Math****	3
<b>Spring Semester</b>		<b>18</b>
CON194-C	Residential Drawing and Design	6
CON208-C	Construction Costs and Estimates II	3
MGT110-A	Small Business Management	3
PSY102-E	Human and Work Relations	3
Elective	General Education**	3

NOTE: Satisfactory assessment scores and/or prerequisites are required for some courses.

\*You may select any communications course with A suffix.

\*\*You may take any Math, Communications, or Humanities/Social Science course with A or E suffix.

\*\*\*You may select any math course with A, E or C suffix.

\*\*\*\*You may select any math course with A suffix.





## Diploma

Four Semesters & One Summer Term

- Finish at midterm of final spring semester
- Fall semester entry



# HEAVY EQUIPMENT OPERATION & MAINTENANCE

If you have a desire to operate and repair large and complex equipment, the Heavy Equipment Operation and Maintenance program at NCC is perfect for you. NCC offers the only Heavy Equipment program in Iowa. It is nationally certified by the Associated General Contractors and is recognized for excellence by the Iowa Land Improvement Contractors Association.

As a Heavy Equipment Operation and Maintenance student, you learn both the operation of heavy construction equipment and the preventative maintenance and repair of the equipment. Loading and safe transportation of heavy equipment to the job site is also covered. Training occurs both on campus and at various off-campus sites.

You will be able to develop occupational skills using crawler tractors, motor graders, self-propelled scrapers, rubber-tired loaders, compaction equipment, dump trucks, backhoes, and hydraulic excavators. In addition, the program provides tractor-trailer training, which allows you to obtain a commercial driver's license.

Before entering the program you should consider whether you meet the general occupational and program work requirements: lift at least 80 pounds, have manipulative skills to work in awkward positions to accomplish tasks, work in inclement weather, meet manufacturer limit restrictions for various pieces of equipment and peripheral devices, and are physically able to climb on and off equipment and operate standard equipment and controls.

Heavy Equipment Operation & Maintenance work is safety sensitive, so you are required to submit to a drug and alcohol screening in your first term of the program. You are required to comply with the College's Student Procedure for Drug & Alcohol Testing. You are also subject to a random selection process while enrolled in the program. This testing is similar to what you will face in industry.

Due to the increasing demand in construction employment needs, the demand for qualified equipment operators and maintenance technicians exceeds the present supply of personnel available. Student placement has been excellent both locally and nationally.

Course #	Title	Credits
<b>FIRST YEAR</b>		
<b>Fall Semester</b>		<b>21</b>
HEQ131-C	Safety and Introduction to Heavy Equipment	3
HEQ151-C	Hydraulics and Hydrostatics	3
HEQ160-C	Equipment Lubrication & Maintenance	3
HEQ172-C	CDL-A and DOT Regulations & Lab	3
HEQ178-C	Heavy Equipment Welding	3
Elective	Math**	3
Elective	Communications*	3
<b>Spring Semester</b>		<b>18</b>
HEQ152-C	Equipment Operation and Maintenance I	4
HEQ155-C	Stake and Plan Reading	4
HEQ161-C	Equipment Reconditioning Theory I	5
HEQ163-C	Equipment Reconditioning Lab I	5
<b>Summer Term</b>		<b>9</b>
HEQ156-C	Equipment Operation and Maintenance II	7
HEQ157-C	Surveying I	2
<b>SECOND YEAR</b>		
<b>Fall Semester</b>		<b>19</b>
HEQ158-C	Equipment Operation and Maintenance III	7
HEQ257-C	Surveying II	2
HEQ263-C	Equipment Reconditioning Theory II	5
HEQ264-C	Equipment Reconditioning Lab II	5
<b>Spring Semester</b>		<b>8</b>
HEQ252-C	Job Estimating	2
HEQ267-C	Equipment Reconditioning Lab III	6

\*You may select any communications course with A or E suffix.

\*\*You may select any math course with A, C, or E suffix.

NOTE: Satisfactory assessment scores and/or prerequisites are required for some courses.

# Electrical



“

I think the reason NCC's Industrial Instrumentation & Control Program graduates do so well in the 'real world' is because we don't just learn about what we might encounter in the field; we learn how to solve problems.

”

— *Micah Vogel*  
*Industrial Instrumentation & Control graduate*





# ELECTRICAL TECHNOLOGY

Electrical Technology is a great program for those who wish to combine electrical wiring skills with industrial electronic fundamentals. Building on the Industrial and Commercial Wiring program, students will develop additional skills in industrial controls and will use the latest technologies for electronic motor drives, and plant automation. Further studies include electrical control of temperature, pressure and liquid flow. Upon completion of the Electrical Technology program, graduates are fully prepared to enter today's competitive job market.

Graduates of the Electrical Technology program have found success as plant maintenance electricians and electrical designers. Job opportunities may also be found in residential, commercial and industrial construction wiring.

The successful completion of 54 credits (15 courses) from the Industrial & Commercial wiring program is required before beginning the Electrical Technology program.

Bachelor's degree completion through Dordt College is available with this program. See Page 80.

Course #	Title	Credits
To be accepted into the Electrical Technology Program, you must have first completed the following courses from the Industrial & Commercial Wiring program:		
ELE120-E	Fundamentals of Electricity—DC	4
ELE121-E	Fundamentals of Electricity—AC	4
ELE150-C	National Electric Code	2
ELE154-C	Codes & Standards	5
ELE170-C	Power Distribution	2
ELE168-C	Industrial Wiring Theory/Lab	6
ELE191-C	Motor Theory	2
ELE210-C	Programmable Controllers	4
ELE196-C	Motor Control Principles	4
ELT112-E	Fundamentals of Electronics	6
MGT110-A	Small Business Management	3
MAT106-E	Elementary Algebra	3
Elective	Communications	3
Elective	General Education	3
Elective	Humanities/Social Science	3

### SUMMER TERM ENTRY

<b>Summer Term</b>		<b>8</b>
ELT840-E	Electronic Applications	8
<b>Fall Semester</b>		<b>17</b>
ELT738-E	Instrumentation Process Control	7
ELE220-C	Application of PLCs	6
ELT329-E	Digital Electronics for ET	4

NOTE: Satisfactory assessment scores and/or pre-requisites are required for some courses.



# INDUSTRIAL & COMMERCIAL WIRING

If you're interested in becoming a residential, commercial or industrial electrician, pursue the Industrial & Commercial Wiring degree. The Industrial & Commercial Wiring program offers a unique combination of classroom and hands-on lab experience and also includes a cooperative training program (summer internship.) The first year of study provides a foundation of knowledge in electrical theory, wiring application, and study and application of the National Electrical Code. In your second year, you will gain hands-on training in industrial and commercial wiring, programmable controls, electronic fundamentals, and motor control circuitry. You will also develop a working knowledge of DC and AC electrical theory, blueprint reading and three phase power distribution. The National Electric Code is emphasized in all areas of study.

Upon completion of this program you will possess the skills, knowledge and basic tools necessary to enter the electrical trade. NCC graduates have enjoyed numerous job opportunities in the areas of residential wiring, industrial and commercial construction wiring, electrical sales, and self-employment.

One year of high school algebra is required as a prerequisite for the math elective.

Course #	Title	Credits
<b>FIRST YEAR</b>		
<b>Fall Semester</b>		<b>19</b>
ELE120-E	Fundamentals of Electricity—DC	4
ELE160-C	Residential Wiring Theory/Lab	6
ELE108-C	Residential Blueprint Reading	4
ELE150-C	National Electric Code	2
MAT106-E	Elementary Algebra	3
<b>Spring Semester</b>		<b>19</b>
ELE161-C	Commercial Wiring Theory/Lab	8
ELE109-C	Commercial Blueprint Reading	4
ELE121-E	Fundamentals of Electricity—AC	4
Elective	Communications*	3
<b>Summer Term</b>		<b>6</b>
ELE270-C	Coop Internship for IC Wiring	6
<b>SECOND YEAR</b>		
<b>Fall Semester</b>		<b>17</b>
ELE168-C	Industrial Wiring Theory / Lab	6
ELE196-C	Motor Control Principles	4
ELE210-C	Programmable Controllers	4
Elective	Humanities / Social Science*	3
<b>Spring Semester</b>		<b>21</b>
MGT110-A	Small Business Management	3
ELE154-C	Codes & Standards	5
ELE170-C	Power Distribution	2
ELE191-C	Motor Theory	2
ELT112-E	Fundamentals of Electronics	6
Elective	General Education*	3

Job skills seminar required for graduation.

\*You may take any Math, Communications, or Humanities / Social Science course with A or E suffix. You may also take Introduction to Computers (CSC110-A) or Introduction to Computers II (CSC115-A) to fulfill the general education elective.

NOTE: Satisfactory assessment scores and/or prerequisites are required for some courses.





# INDUSTRIAL INSTRUMENTATION & CONTROL

Instrumentation and Control technicians solve electrical, electronic, and computer problems using their minds and hands. These technicians install, upgrade, maintain, and repair automated equipment in industries that produce everything from appliances, medical equipment, ethanol and electric power. As an Instrumentation and Control student you learn calibration and control of industrial process equipment. You learn about process variables such as motor speed, temperature control, humidity control, pressure levels, and flow rate.

To enter this high-tech program you should have an interest in problem solving. The program has high school options and part-time schedules available.

NCC has the only Industrial Instrumentation and Control program in Iowa. Partnerships with several area industries allow greater learning opportunities, and the diversity of the program allows you a wide choice of employment after you graduate. There is a critical shortage of people who are trained in Industrial Instrumentation and Control. Graduates are working in food processing facilities, manufacturing plants, electrical power generating plants, ethanol plants, and more.

One year of high school algebra is required as a prerequisite for the math elective.

Bachelor's degree completion through Dordt College is available with this program. See Page 80.



Course #	Title	Credits
<b>FIRST YEAR</b>		
<b>Fall Semester</b>		<b>20</b>
ELT113-E	Electronics I	9
ELT191-C	PC Fundamentals/CAD for Technicians	4
MAT123-E	Basic Algebra and Trigonometry	4
Elective	Communications*	3
<b>Spring Semester</b>		<b>18</b>
ELT114-E	Electronics II	5
ELT193-E	Computer Programming for Technicians	3
ELT327-E	Digital Electronics	4
MAT124-E	Algebra and Trigonometry**	3
MFG548-E	Fluid Power	3
<b>Summer Term</b>		<b>8</b>
ELE163-C	Electrical Wiring	3
ELE190-C	Relay Logic	3
ELT300-C	Industrial National Electric Code	2
<b>SECOND YEAR</b>		
<b>Fall Semester</b>		<b>19</b>
ELT156-E	Industrial Electronics	5
ELT645-E	Process Measurement	10
SDV135-C	Job Seeking Skills	1
Elective	Humanities / Social Sciences	3
<b>Spring Semester</b>		<b>21</b>
ELT260-E	Advanced PLCs	8
ELT631-E	Microprocessors & Interfacing	6
ELT646-E	Process Control	7

\*You may select any communications course with A or E suffix.

\*\*You may take MAT121-A and MAT130-A in place of this math courses if available.

NOTE: Satisfactory assessment scores and/or prerequisites are required for some courses.

## Diploma

Two Semesters & One Summer Term

- Summer & fall semester entry



# POWERLINE

Powerline installers construct and maintain electrical overhead and underground powerlines in this challenging, out-of-doors career. As a student, you receive training in a 40-acre outdoor laboratory as well as in the classroom. You learn to climb, set, and remove various sized poles; frame structures; install conductors and street lights; install underground cable; trim trees; and operate trucks along with various equipment. In conjunction with the hands-on experience, you learn about electrical concepts and theory, construction techniques, transmission and distribution systems, safety, materials, and hardware. In addition, you learn communication skills and earn a First Aid Certificate. You also have the opportunity to earn a Class A Commercial Driver's License.

Before entering this exciting program, you should consider whether you meet the general occupational and program work requirements: lift at least 80 pounds, have manipulative skills to work in awkward positions to accomplish tasks, work in both extremely hot and cold weather, work in a team environment, and meet manufacturer's weight limit restrictions for various pieces of equipment (350 pound maximum weight), physically operate standard industry equipment, and ascend and descend from various heights.

Powerline work is safety sensitive, so you are required to submit to a drug and alcohol screening in your first term of the program. You are required to comply with the College's Student Procedure for Drug and Alcohol Testing. You are also subject to a random selection process while enrolled in the program. This testing is similar to what you will face in industry.

Graduates of the Powerline program are in demand by electrical utilities, rural electric cooperatives, and construction companies. The employment opportunities for powerline installers are excellent across the country, and those applicants with formal training typically have higher starting salaries and greater opportunity for advancement within the industry.

One year of high school algebra is recommended.

Course #	Title	Credits
<b>FALL ENTRY</b>		
<b>Fall Semester</b>		<b>21</b>
PWL168-C	DC Theory	2
PWL169-C	AC Theory	2
PWL170-C	Field Training I	4
PWL172-C	Field Training II	4
PWL175-C	Trade Fundamentals I	3
PWL177-C	Trade Fundamentals II	3
Elective	Math**	3
<b>Spring Semester</b>		<b>19</b>
PWL174-C	Field Training III	4
PWL176-C	Field Training IV	4
PWL179-C	Transformer Theory	5
PWL183-C	Line Maintenance	3
Elective	Communications*	3
<b>Summer Term</b>		<b>10</b>
PWL178-C	Field Training V	4
PWL182-C	Underground Distribution	3
PWL186-C	Transmission and Distribution	3
<b>Required for Graduation</b>		
SDV135-C	Job Seeking Skills	1
CDL Recommended		
<b>SUMMER ENTRY</b>		
<b>Summer Term</b>		<b>12</b>
PWL168-C	DC Theory	2
PWL170-C	Field Training I	4
PWL175-C	Trade Fundamentals I	3
Elective	Math**	3
<b>Fall Semester</b>		<b>18</b>
PWL169-C	AC Theory	2
PWL172-C	Field Training II	4
PWL174-C	Field Training III	4
PWL177-C	Trade Fundamentals II	3
PWL179-C	Transformer Theory	5
<b>Spring Semester</b>		<b>20</b>
PWL176-C	Field Training IV	4
PWL178-C	Field Training V	4
PWL182-C	Underground Distribution	3
PWL183-C	Line Maintenance	3
PWL186-C	Transmission and Distribution	3
Elective	Communications*	3
<b>Required for Graduation</b>		
SDV135-C	Job Seeking Skills	1
CDL Recommended		
*If you are seeking a diploma, you may select any communications course with a A or E suffix.		
**You may take MAT104-C or any math course with an A or E suffix except MAT110-A Math for Liberal Arts and MAT156-A Statistics.		
NOTE: Satisfactory assessment scores and/or prerequisites are required for some courses.		



# POWERLINE TECHNOLOGY

The Powerline Technology program provides you with an opportunity to earn an Associate of Applied Science Degree often necessary for future advancement in the powerline industry. These positions could include line foreman, line superintendent, operations manager, office manager, sales associate, technician, or member service advisor.

The coursework provides you with additional skills beyond the one-year lineworker training. You will choose either a business/management or technical emphasis. These courses may be taken either prior to or after completion of the Powerline diploma. You must complete the requirements of the NCC Powerline Diploma program.

A degree plan must be completed before starting the Powerline Technology program to ensure the requirements for your emphasis area are met. An approved degree plan allows you to complete courses at NCC or another college and transfer those credits to obtain your Powerline Technology degree. This allows you to continue your education while employed and at a pace suitable to your lifestyle.

	Credits
<b>General Education Requirements*</b>	<b>12</b>
Math/Science Elective	3
Communications Elective	3
Humanities/Social Science Elective	3
Elective from any of above	3
<b>Business Management Emphasis</b>	<b>30</b>
General Education*	12
Business/Management Studies*	12
Technical Studies	6
OR	
<b>Technical Emphasis</b>	<b>30</b>
General Education*	12
Business/Management Studies*	6
Technical Studies	12

\*All general education electives and Business Management electives must have an A suffix.

NOTE: Satisfactory assessment scores and/or prerequisites are required for some courses.



## Bachelor's Degree in Engineering Technology through Dordt College

- After obtaining Advanced Standing Associate of Applied Science Degree (Electrical Technology) or Associate of Applied Science Degree (Computerized Manufacturing Technology and Industrial Instrumentation & Control)

# ENGINEERING TECHNOLOGY

## • Dordt College

The Engineering Technology program builds upon two-year technology programs at NCC including Computerized Manufacturing Technology, Industrial Instrumentation & Control Technology and Electrical Technology, along with graduates of the former Manufacturing Engineering Technology program.

This unique program bridges the gap between production and engineering by creating a well-defined graduate who has working/practical knowledge in a variety of areas such as: machining, computer aided drafting, electrical, electronic and computer based controls. Working with in a team an Engineering Technologist takes a project from concept to completion. They will be a part of every aspect of the project from conception, drawing, creating a prototype, testing, monitoring, and troubleshooting an engineer's project plans. This is a unique 2x2 cooperative Program with Dordt College in Sioux Center, Iowa.

The portion of the program taken at Dordt College enhances individual skills with teamwork and communication skills. You will be challenged to deal with social, cultural, environmental, and aesthetic issues as well as technical and economic factors in the solution of technical problems. Technical skills will be enhanced as you work on creative projects side-by-side with engineering students.

### INDUSTRIAL INSTRUMENTATION & CONTROL EMPHASIS

View first two years curriculum at NCC on page 77.

Course #	Title	Credits
<b>THIRD YEAR (AT DORDT)</b>		
<b>Fall Semester</b>		<b>18</b>
GEN100	Kingdom, Ident, Calling	2
ENG101	Grammar & Comp*	3
PHYS115		4
or		
CHEM101		4
EGR103	Introduction to Engineering	2
HIST100	Western Civilization	3
Math111		4
or		
Math112	Calculus	4
<b>Spring Semester</b>		<b>16.5/15.5</b>
ENG200	Responding to Lit	3
GEN200	Introduction to the Arts	3
PHYS116		4
or		
ENVR 151		3
THEO101	Perspect in Bibl Theo	3
	Technical Elective 1****	3
	HPER Activity	.5
<b>Summer Session (Optional)</b>		<b>3</b>
EGR271***	Internship	3

### FOURTH YEAR (AT DORDT)

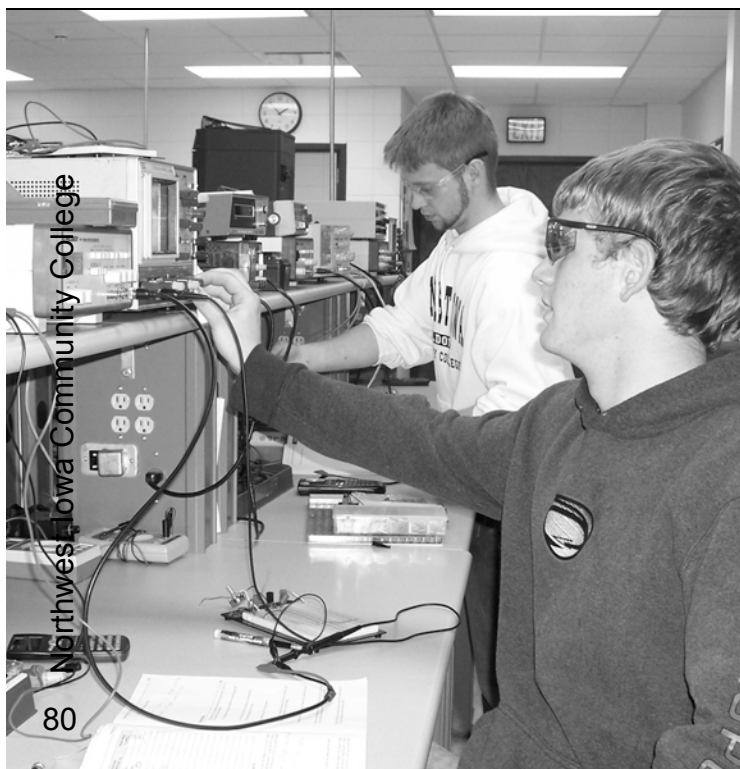
<b>Spring Semester</b>		<b>16</b>
GEN300	Calling, Task, Culture	3
HPT4	Fourth HPT	3
EGR310	History of Technology	3
EGR280***	Senior Design II	4
	Free Elective	3
<b>Fall Semester</b>		<b>13.5</b>
	Cross Cultural Requirement	3
	Social Science II	3
PHIL201	Perspect in Phil	3
EGR279***	Senior Design I	1
	Technical Elective 2****	3
	HPER Activity	.5

\*Either ENG105-A Composition I or COM741-E Oral Communication should be taken at NCC. Accordingly, credit will be given at Dordt for either ENG101 Grammar & Composition or COMM110 Fundamentals of Speaking and Listening.

\*\*Either PSY111-A Introduction to Psychology, PSY121-A Developmental Psychology, or SOC110-A Introduction to Sociology should be taken at NCC. Accordingly, credit will be given at Dordt for either PSYC 201 General Psychology or SOC201 Principles of Sociology.

\*\*\*EGR271, 279, and 280 are "technology" versions of EGR371, 379, and 380 and will be taught coincident with those courses.

\*\*\*\*Technical electives are chose in consultation and with the approval of an engineering advisor.







**COMPUTERIZED MANUFACTURING TECHNOLOGY EMPHASIS**

View first two years curriculum at NCC on page 83.

Course #	Title	Credits
<b>THIRD YEAR (AT DORDT)</b>		
<b>Fall Semester</b>		<b>18</b>
GEN100	Kingdom, Ident, Calling	2
ENG101	Grammar & Composition*	3
PHYS115		4
or		
CHEM 101		4
EGR103	Introduction to Engineering	2
HIST100	Western Civilization	3
Math111		4
or		
Math112	Calculus	4
<b>Spring Semester</b>		<b>17.5/16.5</b>
ENG200	Responding to Lit	3
GEN200	Introduction to the Arts	3
PHYS116		4
or		
ENVR 151		3
THEO101	Perspect in Bibl Theo	3
EGR204	Introduction to Micro & Digital	4
	HPER Activity	.5
<b>Summer Session (Optional)</b>		<b>3</b>
EGR271***	Internship	3
<b>FOURTH YEAR (AT DORDT)</b>		
<b>Fall Semester</b>		<b>13.5</b>
	Cross Cultural Requirement	3
	Social Science II	3
PHIL201	Perspect in Phil	3
EGR279***	Senior Design I	1
CMSC131	Introduction to Data Communications	3
	HPER Activity	.5
<b>Spring Semester</b>		<b>16</b>
GEN300	Calling, Task, Culture	3
HPT4	Fourth HPT	3
EGR310	History of Technology	3
EGR280***	Senior Design II	4
CMSC145	Computer Systems	3

\*Either ENG105-A Composition I or COM741-E Oral Communication should be taken at NCC. Accordingly, credit will be given at Dordt for either ENG101 Grammar & Composition or COMM110 Fundamentals of Speaking and Listening.

\*\*Either PSY111-A Introduction to Psychology, PSY121-A Developmental Psychology, or SOC110-A Introduction to Sociology should be taken at NCC. Accordingly, credit will be given at Dordt for either PSYC201 General Psychology or SOC201 Principles of Sociology.

\*\*\*EGR271, 279, and 280 are "technology" versions of EGR371, 379, and 380 and will be taught coincident with those courses.

**ELECTRICAL TECHNOLOGY EMPHASIS**

View first two and a half years curriculum at NCC on page 75.

Course #	Title	Credits
<b>THIRD YEAR SPRING SEMESTER (AT DORDT)</b>		
<b>Spring Semester</b>		<b>11.5</b>
GEN100	Kingdom, Ident, Calling	2
ENG101	Grammar & Composition*	3
ENVR151	Introduction to Envr. Studies	3
GEN200	Introduction to the Arts	3
	HPER Activity	.5
<b>FOURTH YEAR (AT DORDT)</b>		
<b>Fall Semester</b>		<b>17</b>
CHEM101	General Chemistry	4
EGR103	Introduction to Engineering	2
Math111		4
or		
Math112	Calculus	4
EGR279***		1
HIST100	Western Civilization	3
CMSC111	Struct Programming	3
<b>Spring Semester</b>		<b>15</b>
ENG200	Responding to Lit	3
EGR202	Elements of Mat Sci	3
THEO101	Perspect in Bibl Theo	3
EGR280***	Senior Design II	3
EGR310	History of Technology	3
<b>Summer Session (Optional)</b>		<b>3</b>
EGR271***	Internship	3
<b>FIFTH YEAR (AT DORDT)</b>		
<b>Fall Semester</b>		<b>15.5</b>
	Cross Cultural Requirement	3
	Social Science II	3
PHIL201	Perspect in Phil	3
GEN300	Calling, Task, Culture	3
HPT4	Fourth HPT	3
	HPER Activity	.5

\*Either ENG105-A Composition I or COM741-E Oral Communication should be taken at NCC. Accordingly, credit will be given at Dordt for either ENG101 Grammar & Composition or COMM110 Fundamentals of Speaking and Listening.

\*\*Either PSY111-A Introduction to Psychology, PSY121-A Developmental Psychology, or SOC110-A Introduction to Sociology should be taken at NCC. Accordingly, credit will be given at Dordt for either PSYC201 General Psychology or SOC201 Principles of Sociology.

\*\*\*EGR271, 279, and 280 are "technology" versions of EGR371, 379, and 380 and will be taught coincident with those courses.

# Manufacturing



“

I would ABSOLUTELY recommend NCC. I'm always bragging about my school, education, and experience. With every staff member I talked with, I made them smile, and they did the same for me.

”

—Nick Shaffer  
Manufacturing graduate

**Associate of Applied Science Degree**  
 Four Semesters & One Summer Term  
 • Fall semester entry

# COMPUTERIZED MANUFACTURING TECHNOLOGY

This unique program bridges the gap between production and engineering by creating a well-defined graduate who has knowledge of machining and computer aided drafting. The Computerized Manufacturing Technology program offers extensive “hands-on” and “hands-off” machining applications in both manual and computer-aided manufacturing.

You will learn to prepare detailed working drawings for the manufacturing industry. These drawings will be created in both two-dimensional and parametric modeling software, abiding by industry recognized standards. This two-year program will provide many interactive scenarios between machining and drafting. The program prides itself in operating state-of-the-art equipment and software currently being used by area manufacturers. This program benefits the student by increasing the skills needed in the machining and drafting worlds, allowing for a diversified graduate.

Graduating from the Computerized Manufacturing Technology program prepares you to work as a drafting technician, machinist, CNC programmer, shop supervisor, or to start your own business venture. This degree will allow the graduate numerous employment opportunities throughout the United States.

One year of high school algebra is required as a prerequisite for the math elective(s).

Bachelor’s degree completion through Dordt College is available with this program. See Page 80.

Course #	Title	Credits
<b>FIRST YEAR</b>		
<b>Fall Semester</b>		<b>19</b>
CAD107-E	Fundamentals of CAD	5
CAD120-E	Computer Aided Drafting I	4
MAT123-E	Basic Algebra and Trigonometry	4
MFG181-C	Introduction to Machining	3
Elective	Communications*	3
<b>Spring Semester</b>		<b>20</b>
CAD121-E	Computer Aided Drafting II	3
CAD122-E	Computer Aided Drafting III	4
CAD230-E	Geometric Dimensioning and Tolerancing	2
MFG325-E	CAM I	3
MFG360-C	CNC Programming/Operation I	8
<b>Summer Term</b>		<b>8</b>
CAD250-E	Advanced CAD Applications	7
MFG170-C	Manufacturing Welding	1
<b>SECOND YEAR</b>		
<b>Fall Semester</b>		<b>16</b>
MFG180-C	Basic Machine Operations	2
MFG228-C	Machine Operations II	4
MFG232-C	Machine Operations III	3
MAT132-E	Algebra Geometry and Trigonometry I	4
Elective	Humanities/Social Science*	3
<b>Spring Semester</b>		<b>14</b>
MFG361-C	CNC Programming / Operation II	8
CSC110-A	Introduction to Computers	3
Elective	General Education*	3

\*You may take any Math, Communications, or Humanities/ Social Science course with A or E suffix.

NOTE: Satisfactory assessment scores and/or prerequisites are required for some courses.



## Diploma

Two Semesters & One Summer Term

- Fall semester entry

# ENGINEERING DRAFTING/CAD

If you are a detail-oriented person with good visualization, math skills, and computer knowledge you will be interested in the Engineering Drafting/CAD program at NCC. As an Engineering Drafting/CAD student, you will learn to prepare detailed working drawings for the manufacturing industry.

The program provides extensive training in Computer-Aided drafting and Parametric modeling software. Emphasis is placed on CAD drawing techniques and solid product description methods as prescribed by ASME Y14.5-1994 Dimensioning and Tolerancing standards. This program prides itself in using up-to-date Computer-Aided Drafting (CAD) and Parametric Modeling software. Students will also gain valuable hands-on training with manual and Computer Numerical Control (CNC) manufacturing equipment. After completing this program, you will be able to translate design ideas, specifications, and calculations into the working drawings required by manufacturing to construct a design product.

NCC is an Affiliate Member of the Society of Manufacturing Engineers (SME) and is involved in the SkillsUSA conferences and competitions. Our students have gained state and national recognition, by participating in the SkillsUSA competitions, on a yearly basis. Students have also improved their leadership abilities through SkillsUSA.

Graduating from Engineering Drafting/CAD prepares you to work as a drafting technician or to continue your education at NCC and obtain the Computerized Manufacturing Technology (CMT) degree.

One year of high school algebra is required as a prerequisite for the math elective.

Course #	Title	Credits
<b>Fall Semester</b>		<b>19</b>
CAD107-E	Fundamentals of CAD	5
CAD120-E	Computer Aided Drafting I	4
MAT123-E	Basic Algebra and Trigonometry	4
MFG181-C	Introduction to Machining	3
Elective	Communications*	3
<b>Spring Semester</b>		<b>20</b>
CAD121-E	Computer Aided Drafting II	3
CAD122-E	Computer Aided Drafting III	4
CAD230-E	Geometric Dimensioning and Tolerancing	2
MFG325-E	CAM I	3
MFG360-C	CNC Programming/Operation I	8
<b>Summer Term</b>		<b>8</b>
CAD250-E	Advanced CAD Applications	7
MFG170-C	Manufacturing Welding	1

\*You may select any communications course with A or E suffix.

NOTE: Satisfactory assessment scores and/or prerequisites are required for some courses.

**Diploma**  
 Two Semesters  
 • Fall semester entry

# GENERAL MACHINING

In General Machining, you learn to make “life-sensitive” parts that are critical in everything from tractors to medical equipment to jet engines. This highly technical field offers some of the best positions in the manufacturing world. As a General Machining student, you learn the latest techniques on state-of-the-art equipment. You learn to program and use Computer Numerical Control (CNC) machines to manufacture parts “hands-off.” In addition, you learn “hands-on” skills including the use of bench tools, measurement devices, drills, lathes, milling machines, grinders, and more. During the program, you also learn required math, blueprint reading, and communication skills.

Graduates work in machine shops, tool and die shops and manufacturing facilities.

Upon graduating from General Machining you can seek employment as a machinist or continue your education at NCC and obtain the Computerized Manufacturing Technology AAS degree.

Successful machinists must have good visualization and math skills. One semester of high school mechanical drafting is also recommended.

One year of high school algebra is required as a prerequisite for the math elective.

Course #	Title	Credits
<b>Fall Semester</b>		<b>18</b>
MAT123-E	Basic Algebra & Trigonometry	4
MFG119-C	Machine Trade Printreading	2
MFG181-C	Introduction to Machining	3
MFG180-C	Basic Machine Operations	2
MFG228-C	Machine Operations II	4
MFG232-C	Machine Operations III	3
<b>Spring Semester</b>		<b>19</b>
MFG360-C	CNC Programming/Operation I	8
MFG361-C	CNC Programming/Operation II	8
Elective	Communications*	3

\*You may select any Communications course with A or E suffix.  
 NOTE: Satisfactory assessment scores and/or prerequisites are required for some courses.



## Certificate

One Semester

- Fall & spring semester entry

# PRODUCTION WELDING

If you want a fast track to the manufacturing industry, NCC's Production Welding program allows you to learn the welding skills you will need.

The Production Welding program is highly personalized, which allows you to work at your own pace. You can practice on state-of-the-art equipment and gain extensive hands-on training in high-tech labs that were recently remodeled.

As a student, you will develop entry-level welding methods and techniques found in a manufacturing environment where production/repetitive welding is performed. These skills include flat, horizontal, and vertical cutting positions in shielded and gas metal arc welding.

The American Welding Society (AWS), American Petroleum Institute (API), and American Society of Mechanical Engineers (ASME) curriculum standards and guidelines are closely followed.

In the past several years, placement has been 100% for those graduates seeking employment in welding areas. There is currently a critical shortage of trained production welders.

Course #	Title	Credits
<b>Total Credits</b>		<b>12</b>
WEL152-C	Shielded Metal-Arc Welding Lab I*	3
WEL181-C	GMAW*	2
WEL212-C	Production Welding Certification Lab	7

\*Courses apply toward Diploma



**Diploma**

Two Semesters &amp; One Summer Term

- Fall semester entry
- Part-time enrollment may be possible

# WELDING

If you enjoy using high-tech equipment and want a great job in manufacturing or other industries, NCC's Welding program can help you achieve your goals. The Welding diploma program emphasizes all major welding and cutting processes.

As a Welding student you will gain hands-on knowledge of metallurgy, blueprint reading, the properties and identification of metals, welding symbols, and repair procedures. You will also learn to identify and understand welding defects, prevent distortion of metals, and design and fabricate products in a recently remodeled lab.

You can perfect your skills through extensive hands-on training on state-of-the-art equipment such as a robotic welder.

The Welding program offers certification of structural pipe using mild steel, stainless steel, and aluminum in AWS (American Welding Society), ASME (American Society of Mechanical Engineers), and API (American Petroleum Industry) Codes.

Job opportunities are endless. Current needs far outweigh qualified applicants in all areas. You could work as a production welder or pipe welder in countless industries. You could also work in construction welding for structural bridge and building contractors or in a welding repair shop. In the past several years, placement has been 100% for those graduates seeking employment in welding areas.

Course #	Title	Credits
<b>Fall Semester</b>		<b>19</b>
WEL118-C	General Welding Theory & Metallurgy	5
WEL152-C	Shielded Metal-Arc Welding Lab I	3
WEL135-C	Special Cutting Applications Lab	1
WEL181-C	Gas Metal Arc Welding	2
WEL190-C	Gas Tungsten Arc Welding	2
Elective	Math**	3
Elective	Communications*	3
<b>Spring Semester</b>		<b>20</b>
WEL115-C	Welding Blueprint Reading	5
WEL163-C	Arc Welding II (SMAW)	2
WEL193-C	Gas Tungsten Arc Welding II	2
WEL207-C	Welding Certification Codes Lab	2
WEL187-C	Advanced GMAW	4
WEL209-C	Advanced Welding Theory and Codes	5
<b>Summer Term — Option I</b>		<b>9</b>
WEL313-C	Pipe Welding Theory-Uphill	2
WEL314-C	Pipe Welding Lab-Uphill	7
<b>Summer Term — Option II</b>		<b>9</b>
WEL188-C	Advanced GMAW Theory	2
WEL189-C	GMAW Certification	7
<b>Summer Term — Option III</b>		<b>9</b>
WEL194-C	GTAW Advanced Theory	2
WEL195-C	GTAW Certification	7

\*You may select any communications course with A or E suffix.

\*\*You may select any math course with A, C, or E suffix.

NOTE: Satisfactory assessment scores and/or prerequisites are required for some courses.

# Transportation



“

Receiving a scholarship from NCC was the deciding factor for enrolling in school. Now I own my own business and people want me to build their cars.

”

—Jason Jones  
*Auto Body graduate*





**Diploma**

- Two Semesters & One Summer Term
- Fall semester entry for full-time students
- Part-time students may enter any term

# AUTOMOTIVE SERVICE

If you know you want to enter the automotive service industry and either plan to continue to the second year Automotive Technology program or plan to enter the workforce after one year, the Automotive Service program is for you.

Areas of study include brake systems, chassis and suspension, engine service, fuel and ignition systems, electrical systems, and heating and air conditioning systems.

Completing this program qualifies you for entry level employment in the undercar industry. "Undercar" includes brake and chassis repair, wheels and tire service, exhaust system service, and light engine and electrical repairs.

One year of high school algebra is required as a prerequisite for the math elective.

Course #	Title	Credits
<b>FIRST YEAR</b>		
<b>Fall Semester</b>		<b>19</b>
AUT861-C	Brakes & Chassis System	8
AUT168-C	Automotive Engine Repair	8
Elective	Communications*	3
<b>Spring Semester</b>		<b>19</b>
AUT638-C	Automotive Electricity	8
AUT707-C	Automotive Heating & Air Conditioning	7
AUT139-C	Basic Welding Theory & Application	1
Elective	Math**	3
<b>Summer Term</b>		<b>8</b>
AUT809-C	Automotive Engine Performance	8

\*You may select any communications course with A or E suffix.

\*\*You may select any math course with A or E suffix.

NOTE: Satisfactory assessment scores and/or prerequisites are required for some courses.



## Associate of Applied Science Degree

Four Semesters & Two Summer Terms

- Fall semester entry for full-time students
- Part-time students may enter any term

# AUTOMOTIVE SERVICE TECHNOLOGY

If you want to use your problem-solving and technical skills in the automotive industry, Automotive Service Technology is the program to consider.

This program has been selected 14 times since 1984 as the “Best Automotive Service Program in Iowa” and in 2005 was awarded 4th in the nation. The program is certified by NATEF (National Automotive Technicians Education Foundation). All our instructors are ASE (Automotive Service Excellence) certified. As an Automotive Service Technology student, you will study the vehicle from bumper to bumper, roof to road. This includes internal combustion engine service, hydraulic brake systems, chassis/suspension service, Drive Trains, fuel system designs, ignition systems, electrical systems, and passenger comfort systems. This program emphasizes engine performance and electronic theory and diagnosis necessary to service and repair today’s computerized vehicle system.

This program will prepare you to meet the demands of today’s auto service industry. Approximately seventy-five percent of your time will be spent working with equipment and vehicles. The work cooperative/internship provides you with experience working as an auto technician at a repair facility. With a working knowledge of complex automotive systems and well-developed problem solving skills, you will be ready to begin to diagnose and repair today’s automotive systems.

A valid driver’s license and a cumulative grade point of 2.0 is required to enroll in the Cooperative/Internship course.

One year of high school algebra is required as a prerequisite for the math elective.

Course #	Title	Credits
<b>FIRST YEAR</b>		
<b>Fall Semester</b>		<b>19</b>
AUT861-C	Brakes & Chassis System	8
AUT168-C	Automotive Engine Repair	8
Elective	Communications*	3
<b>Spring Semester</b>		<b>19</b>
AUT638-C	Automotive Electricity	8
AUT707-C	Automotive Heating & Air Conditioning	7
AUT139-C	Basic Welding Theory & Application	1
Elective	Math*	3
<b>Summer Term</b>		<b>6</b>
AUT911-C	Cooperative/Internship***	6
<b>SECOND YEAR</b>		
<b>Fall Semester</b>		<b>18</b>
AUT637-C	Automotive Electronics	7
AUT809-C	Automotive Engine Performance	8
Elective	Social Science/Humanities*	3
<b>Spring Semester</b>		<b>18</b>
AUT814-C	Automotive Engine Performance II	8
AUT250-C	Automotive Drive Trains	7
Elective	General Education**	3
<b>Summer Term</b>		<b>6</b>
AUT860-C	Brakes and Transmission Electronics	6

\*You may select any course with A or E suffix.

\*\*You may take any Math, Communications, or Humanities/ Social Science course with A or E suffix. You may also take Introduction to Computers (CSC110-A) or Introduction to Computers II (CSC115-A) to fulfill the general education elective.

\*\*\*A valid driver’s license and a cumulative grade point of 2.0 is required to enroll in the Cooperative/ Internship course.

NOTE: Satisfactory assessment scores and/or prerequisites are required for some courses.

## Diploma

Two Semesters & One Summer Term

- Fall semester entry

# COLLISION REPAIR & REFINISHING

If your interest lies in the automotive industry and you enjoy working with your hands and solving problems, a career in collision repair and refinishing may be just what you are looking for.

As a Collision Repair & Refinishing student, you will learn the latest repair techniques using up-to-date equipment. Classroom discussion is combined with lab work to learn the following skills:

- Oxyacetylene and gas metal arc welding (GMAW), welding aluminum
- Automotive stationary and moveable glass
- Sheet metal repair, replacement, and PDR techniques
- Welding and repairing plastic components
- Refinishing techniques including tricoat & air brush techniques
- Structural damage analysis and repair procedures
- Electronic estimating
- Structural adhesive use

Refinishing techniques are tested using the Spray Technique Analysis and Research (STAR) training methods. Skills you learn repairing late model vehicles prepare you for immediate entry into the workforce.

After you graduate, you can seek employment in independent shops, automotive dealerships, or become self-employed.

Course #	Title	Credits
<b>Fall Semester</b>		<b>19</b>
CRR110-C	Auto Body Welding	3
CRR407-C	Exterior Body Construction	7
CRR741-C	Estimating v2	2
CRR810-C	Automotive Refinishing I	4
Elective	Communications*	3
or		
Elective	Math**	3
<b>Spring Semester</b>		<b>20</b>
CRR450-C	Glass Service	2
CRR840-C	Automotive Refinishing II	4
CRR502-C	Frame Damage Analysis	2
CRR537-C	Structural Repair	7
CRR602-C	Mechanical Repairs	2
Elective	Communications*	3
or		
Elective	Math**	3
<b>Summer Term</b>		<b>9</b>
CRR577-C	Advanced Structural Repair	9

\*You may select any communications course with A or E suffix.

\*\*You may select any math course with A, C, or E suffix.

NOTE: Satisfactory assessment scores and/or prerequisites are required for some courses.



## Associate of Applied Science Degree

Four Semesters & One Summer Term

- Fall semester entry for full-time students
- Part-time students may enter any term during Automotive Service year only

# COLLISION REPAIR & REFINISHING TECHNOLOGY

Our Collision Repair & Refinishing Technology program is an excellent continuation of the Collision Repair & Refinishing program. Many times during a collision, more than just the body of the vehicle is damaged. As a student of this program, you will practice repairs with late model vehicles to prepare for immediate entry into the workforce. In addition you will acquire the skills needed to diagnose and repair mechanical systems such as heating and air conditioning, suspension, brakes, electrical, and drive train.

You may take Collision Repair & Refinishing the first year and Auto Service classes the second year or take Auto Service first and Collision Repair & Refinishing second.

One year of high school algebra is required as a prerequisite for the math elective.



Course #	Title	Credits
<b>FIRST YEAR</b>		
<b>Fall Semester</b>		<b>19</b>
CRR110-C	Auto Body Welding	3
CRR407-C	Exterior Body Construction	7
CRR741-C	Estimating v2	2
CRR810-C	Automotive Refinishing I	4
Elective	Communications*	3
or		
Elective	Math**	3
<b>Spring Semester</b>		<b>20</b>
CRR450-C	Glass Service	2
CRR840-C	Automotive Refinishing II	4
CRR502-C	Frame Damage Analysis	2
CRR537-C	Structural Repair	7
CRR602-C	Mechanical Repairs	2
Elective	Communications*	3
or		
Elective	Math**	3
<b>Summer Term</b>		<b>9</b>
CRR577-C	Advanced Structural Repair	9

<b>SECOND YEAR</b>		
<b>Fall Semester</b>		<b>19</b>
AUT861-C	Brakes and Chassis System	8
AUT168-C	Automotive Engine Repair	8
Elective	General Education***	3
<b>Spring Semester</b>		<b>18</b>
AUT638-C	Automotive Electricity	8
AUT707-C	Automotive Heating and Air Conditioning	7
Elective	Social Science/Humanities	3

\*You may select any communications course with A or E suffix.

\*\*You may select any math course with A or E suffix.

\*\*\*You may take any Math, Communications, or Humanities/ Social Science course with A or E suffix. You may also take Introduction to Computers (CSC110-A) or Introduction to Computers II (CSC115-A) to fulfill the general education elective.

NOTE: Satisfactory assessment scores and/or prerequisites are required for some courses.



**Associate of Applied Science Degree**

Four Semesters &amp; Two Summer Terms

- Fall semester entry for full-time students
- Part-time students may enter any term during Automotive year only

## TRUCK & DIESEL TECHNOLOGY

If you have good mechanical aptitude and enjoy working with large machinery, Truck and Diesel Technology may be just what you are looking for.

As a student in the Truck and Diesel Technology program, you will learn the latest truck and diesel repair and diagnostic techniques using up-to-date equipment. Instruction is provided in facilities using actual components and vehicles.

You will be trained in the diagnosis and repair of heavy-duty transmissions, power differentials, diesel engines, electrical systems, hydraulic systems, and diesel fuel systems. Emphasis is placed on the use of diagnostic equipment, technical manuals, and hand and power tools.

Truck and diesel technicians are employed by truck dealerships, heavy equipment dealerships, truck fleet operators, construction contractors, farm implement dealerships, and independent truck repair shops.

One year of high school algebra is required as a prerequisite for the math elective.

Course #	Title	Credits
<b>FIRST YEAR</b>		
<b>Fall Semester</b>		<b>19</b>
AUT861-C	Brakes and Chassis System	8
AUT168-C	Automotive Engine Repair	8
Elective	Communications*	3
<b>Spring Semester</b>		<b>19</b>
AUT638-C	Automotive Electricity	8
AUT707-C	Automotive Heating and Air Conditioning	7
AUT139-C	Basic Welding Theory and Application	1
Elective	Math*	3
<b>Summer Term</b>		<b>8</b>
AUT809-C	Automotive Engine Performance	8

NOTE: Satisfactory assessment scores and/or prerequisites are required for some courses.

<b>SECOND YEAR</b>		
<b>Fall Semester</b>		<b>17</b>
DSL801-C	Truck and Trailer Service	1
DSL631-C	Air Systems and Brakes	1
DSL352-C	Introduction to Diesel Engines	2
DSL810-C	Truck and Diesel Lab I	10
Elective	Humanities/Social Science*	3
<b>Spring Semester</b>		<b>17</b>
DSL591-C	Power Trains and Suspension	1
DSL601-C	Hydraulics	1
DSL820-C	Truck and Diesel Lab II	10
DSL402-C	Diesel Engine Electronics I	2
Elective	General Education**	3
<b>Summer Term</b>		<b>6</b>
DSL824-C	Truck and Diesel Lab III	4
DSL412-C	Diesel Engines Electronics II	2

\*You may select any course with A or E suffix.

\*\*You may take any Math, Communications, or Humanities / Social Science course with A or E suffix. You may also take Introduction to Computers (CSC110-A) or Introduction to Computers II (CSC115-A) to fulfill the general education elective.