

Accounting Department Overview

Accounting is the language of business. After completion of the Accounting Program, students will be capable of dealing with the facts and figures essential to intelligent decision making in business.

Students who train in accounting will find that our curriculum will prepare them for immediate employment upon completion of their program of study. The Accountant A.A.S. degree and the Accountant diploma will prepare students to take the Registered Accounting Practitioner (RAP) certification exam. It will also familiarize them with topics covered in the Certified Managerial Accountant (CMA) and Enrolled Agents (EA) certification exams.

Choose to earn your degree during the day, or through our new evening completion option. Online course options are also available.

Core Competencies

1. Analyze, interpret, communicate, and utilize financial information.
2. Complete all aspects of the accounting cycle.
3. Generate accurate and timely financial information using contemporary industry software.

Department Faculty

Al Bronnenberg, Harold Chromy, Dave Hammitt, Sonny Jirik, Jodi Olson, Doug Yentsch

Accounting Degrees

Accountant AAS Degree
Accounting Technician AAS Degree
Accounting Assistant Diploma
Accounting Technician Diploma
Payroll Clerk Certificate

Accountant

A.A.S. Degree • 72 Credits

AAS 2214/AAS 3230



Degree Description

The A.A.S. Degree in Accounting is designed to prepare people for employment in accounting. An accountant examines, analyzes, and interprets accounting data for the purpose of giving advice and preparing financial statements. Responsibilities may include recording receipts, recording disbursements, closing year end records, compiling financial statements, preparing internal management, and/or state and federal reports. Accountants perform these duties both manually and with computer assistance. Students enrolled will be required to take 18 credits of Liberal Arts and Sciences courses.

Admission Dates: Fall and Spring Semester

Offered on the Faribault and North Mankato Campuses

The course requirements listed below are specific to the 2013-2014 school year. If you need to view the program from previous years view our [Catalog Archive](#).

This credential is part of the Accounting department. [See the Accounting department page for more details](#)

Required Technical Courses (16 Courses)

Complete all of the following courses:

- [ACCT1800](#) Business Law (3 Credits)
- [ACCT1810](#) Financial Accounting (4 Credits)
- [ACCT1811](#) Managerial Accounting (4 Credits)
- [ACCT1814](#) Payroll Accounting (3 Credits)
- [ACCT1834](#) Computerized Accounting I (3 Credits)
- [ACCT1835](#) Computerized Accounting II (3 Credits)
- [ACCT1870](#) Professional Accounting Careers (1 Credit)
- [ACCT2821](#) Intermediate Accounting I (3 Credits)
- [ACCT2822](#) Intermediate Accounting II (3 Credits)
- [ACCT2847](#) Fraud, Auditing and Internal Controls (4 Credits)
- [ACCT2861](#) Cost Accounting I (4 Credits)
- [ACCT2862](#) Cost Accounting II (3 Credits)
- [ACCT2863](#) Fund/Nonprofit Accounting (3 Credits)
- [ACCT2864](#) Income Tax I (4 Credits)
- [ACCT2865](#) Income Tax II (3 Credits)
- [ACCT2900](#) Accounting Review (3 Credits)

Required Liberal Arts and Sciences (5 Courses)

To complete the Accountant AAS Degree, students must complete 18 MNTC credits from 3 of the 10 MNTC Goal areas.

The following courses are required:

- [ENGL100](#) Composition (4 Credits)
- [COMM140](#) Interpersonal Communication (3 Credits)
- [COMM110](#) Public Speaking (3 Credits)
- Or
- [COMM120](#) Small Group Communication (3 Credits)
- [ECON110](#) Principles of Macroeconomics (3 Credits)
- Or
- [ECON120](#) Principles of Microeconomics (3 Credits)

Elective Credits (3 Credits)

Choose 3 credits from ACCT, MKT,COMP,OTEC or ECON.

PLEASE NOTE: All program plans are preliminary and curriculum may change without notice. Your [catalog of record](#) may have different requirements.

Elective Liberal Arts and Sciences

You must select one additional credit from any MNTC goal area to reach the 18 credits required.

MATH115 Concepts in Math (4 Credits)

Or

MATH120 College Algebra (4 Credits)

Or

MATH154 Elementary Statistics (4 Credits)

Accountant - Associate of Applied Science Degree Course Descriptions**Business Law****ACCT1800 3.00 credits**

This course is an introduction to the principles of law as they apply to citizens and businesses. Topics include ethics, the court system, the legal system, contracts, negotiable instruments, agency and employment, bailments, business organizations, sales and insurance. (Prerequisites: None)

Managerial Accounting**ACCT1811 4.00 credits**

This course covers the accounting principles and concepts applicable to partnership and corporate organizations, accounting for current, contingent, and long-term liabilities, investments, cash flow statements, financial statement analysis, department and branch accounting, consolidated financial statements, plant assets, and intangible assets. Also considered are concepts applicable to analyzing financial statements, managerial and cost accounting principles, and budgeting. (Prerequisites: ACCT1810 with a grade of C or higher)

Computerized Accounting I**ACCT1834 3.00 credits**

This course is an introduction to the use of computers and related software used in the accounting function of the business environment. Topics include, but are not limited to general ledger accounting, payroll procedures, accounts receivable, and accounts payable. The student is also introduced to spreadsheet and database software and their interrelationship with a fully integrated accounting software program. Software for this program includes QuickBooks, Excel, and Access. (Prerequisites: None)

Professional Accounting Careers**ACCT1870 1.00 credits**

This course covers specific topics relating to applying for accounting positions. Topics covered in this course are your appearance, networking tips, exploring different accounting careers, meeting your job's expectations, preparing resumes, and interviewing techniques. Each student is required to have

Financial Accounting**ACCT1810 4.00 credits**

This course covers the fundamental accounting concepts and principles which are used in a business environment. Topics include recording transactions related to internal control, receivables, short-term investments, inventories, plant and equipment, intangible assets, and long-term investments. (Prerequisites: None)

Payroll Accounting**ACCT1814 3.00 credits**

This course covers various state and federal laws pertaining to the computation and payment of salaries and wages. Topics include preparation of employment records, payroll registers, time cards, employee earnings records, and state and federal reports. In addition, we will explore setting up and maintaining a payroll system using Quickbooks. (Prerequisite: None)

Computerized Accounting II**ACCT1835 3.00 credits**

This is the second of the two computerized accounting application series. Topics include, but are not limited to general ledger accounting, payroll procedures, accounts receivable, accounts payable, and job cost accounting. The student is also introduced to advanced functions of spreadsheet software and their interrelationship with a fully integrated accounting software program. Software for this program includes Peachtree and Excel Expert. (Prerequisites: ACCT1834)

Intermediate Accounting I**ACCT2821 3.00 credits**

This is the first of the two course intermediate accounting series. The content of this course covers an overview of the accounting process, the balance sheet, the income statement and statement of cash flows, the time value of money and other various components of the balance sheet. (Prerequisite:

one employment interview as part of this course.
(Prerequisites: None)

ACCT 1810)

Intermediate Accounting II

ACCT2822 3.00 credits

This is the second of the two course intermediate accounting series. The content of the course covers operational assets, investments, current liabilities and contingencies, long-term debt, leases, accounting for income taxes, accounting changes and error corrections and other advanced accounting topics. (Prerequisites: ACCT2821 or equivalent)

Cost Accounting I

ACCT2861 4.00 credits

This course covers managerial accounting cost concepts and behaviors. Examples of job order costing, process costing, and accounting for materials, direct labor, and factory overhead will be discussed. (Prerequisites: ACCT 1810, 1811 with a grade of C or higher)

Fund/Nonprofit Accounting

ACCT2863 3.00 credits

The purpose of this course is to assist students in gaining a knowledge of accounting and financial reporting currently recommended for state and local governmental entities, school districts, and other not-for-profit organizations. The course will assist the student in developing a knowledge of the accounting differences between governmental and not-for-profit entities and business enterprises. (Prerequisites: ACCT1810)

Income Tax II

ACCT2865 3.00 credits

This course provides an explanation and interpretation of the Internal Revenue Code as applied to sole proprietorships, partnerships, and corporations. Topics include business income, expenses, business tax credits, withholding and payment of established estate and trust tax issues, taxes, installment sales, and inventories. (Prerequisites: ACCT2864)

Composition

ENGL100 4.00 credits

Composition is concerned with developing, through theory and practice, the ability to communicate in written form for personal and professional reasons. Students will develop writing skills, analytical skills, and critical thinking skills. Students will complete readings, papers, grammar exercises, and in-class activities. Students will learn methods of writing informatively and persuasively. (Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or

Fraud, Auditing and Internal Controls

ACCT2847 4.00 credits

In this course students will learn about occupational fraud, basic auditing techniques and evaluation of internal controls. Covered topics include how and why fraud is committed, fraud detection, establishing and evaluating internal controls, and using internal auditing techniques to verify account balances. (Prerequisites: ACCT 1810)

Cost Accounting II

ACCT2862 3.00 credits

This course is an extension of ACCT 2861. This course covers budgeting, standard costing, direct costing, differential analysis, capital planning, transfer pricing, and decision making under uncertainty. (Prerequisites: ACCT 2861 or equivalent)

Income Tax I

ACCT2864 4.00 credits

The purpose of this course is to expose students to an explanation of Federal and Minnesota individual income tax as it relates to the preparation of the required tax returns. Tax research is also examined in this course. Students will have hands-on experience in preparing Federal and Minnesota income tax returns. (Prerequisites: None)

Accounting Review

ACCT2900 3.00 credits

This course reviews financial accounting, ethics and professional conduct, business law, taxation and managerial accounting concepts. This course will prepare the student for the ACAT Comprehensive Examination for Accreditations in Accountancy. (Prerequisites: ACCT 1800, 2821, 2861, 2864)

Interpersonal Communication

COMM140 3.00 credits

In this class, participants will examine key components of interpersonal communication theory, identify the interpersonal communication skills necessary for healthy relationships, assess their own interpersonal communication effectiveness, and practice and hone interpersonal communication skills necessary for healthy home and work relationships. This course will also address relevant issues of social interaction, including how human diversity/culture (age, race, gender, etc.)

completion of READ 0080 and READ 0090 with a grade of C or higher AND a score of 85.5 or higher on the Sentence Skills portion of the Accuplacer test or completion of ENGL 0080 and ENGL 0090 with a grade of C or higher)(MNTC 1: Communication) This course has an online option.

Public Speaking

COMM110 3.00 credits

This course develops or improves effective performance in acquiring, evaluating, organizing, and communicating information. Learners develop and apply critical and creative thinking to structuring arguments, making presentations, using multimedia, and supporting each other in impromptu and extemporaneous speaking. Course de-emphasizes competition and stresses personal and workplace effectiveness in communication skills. (Prerequisites: Must have a score of 86 or higher on the Sentence Skills portion of the Accuplacer test or completion of ENGL 0080 and ENGL 0090 with a grade of C or higher) (MNTC 1: Communication)

Principles of Macroeconomics

ECON110 3.00 credits

A study of aggregate economic behavior and current economic issues, policies and problems. Macroeconomics measures such as inflation, employment, and the growth of output are examined along with the tools a government can use to foster a stable economy. (Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher) (MNTC 5, 8: History/Social & Behavioral Science, Global Perspective)

Concepts in Math

MATH115 4.00 credits

Concepts in Mathematics is a general education survey course designed to spotlight the field as an important component of our cultural heritage. It introduces a broad range of topics from classical as well as modern mathematics. The emphasis is on problem solving and developing the logical skills to successfully defend solutions, while at the same time showing how mathematics is a creative human endeavor influencing how we perceive the world. Among the major topics considered are logic, set theory, axiomatic systems, number theory, number systems, analytic geometry, algebra, combinatorics, and elementary probability. (Prerequisites: Two years of high school algebra, completion of MATH 0085 with a grade of C or higher or a score of 75.5 or higher on the Elementary Algebra portion of the Accuplacer test) (MNTC 4: Math/Logical Reasoning)

Elementary Statistics

MATH154 4.00 credits

This course introduces the essential mathematical elements of

affects our interpersonal communication. (Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher)(MNTC 1: Communication)

Small Group Communication

COMM120 3.00 credits

This course develops or improves effective communication for leaders and participants in the small group setting. Learners develop and apply critical thinking and communication skills through class discussion, group activities, and group presentations. (Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher) (MNTC 1, 2: Communication, Critical Thinking)

Principles of Microeconomics

ECON120 3.00 credits

This course examines theories of how various types of product, service, and resource markets operate and the resulting implications for public policy. Topics include decision-making by consumers, business firms, and government as well as price determination, resource allocation, and income determination via markets. (Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher) (MNTC 5, 8: History/Social & Behavioral Sciences, Global Perspective).

College Algebra

MATH120 4.00 credits

This course is mainly concerned with functions, most of which are algebraic. It begins with a general treatment of equations and inequalities and then proceeds to cover linear functions, quadratic functions, other polynomial and rational functions, piecewise functions, equations involving radicals and absolute values, logarithms and exponentials, systems of equations and inequalities, permutations and combinations. (Prerequisites: Two years of high school algebra or completion of MATH 0085 with a grade of C or higher, or a score of 75.5 on the Elementary Algebra portion of the Accuplacer test AND a score of 49.5 or higher on the College Level Math portion of the Accuplacer test) (MNTC 4: Mathematical/Logical Reasoning)

statistics, applying them to a broad range of areas including business, manufacturing, economics, and the physical, biological and social sciences. Topics include descriptive measures of data, measures of central tendency, variability, standard probability distributions, tests of hypotheses, confidence intervals, and estimation. To put the treatment on a strong foundation, concepts of probability are developed throughout, and shown to form the unifying theme behind modern statistics. (Prerequisites: Two years of high school algebra, completion of MATH 0085 with a grade of C or higher or a score of 75.5 or higher on the Elementary Algebra portion of the Accuplacer test) (MNTC 4: Mathematical/Logical Reasoning)

Accounting Technician

A.A.S. Degree • 70 Credits

AAS 2242/AAS 3259



Degree Description

The A.A.S. degree in Accounting Technician is designed to prepare students for a crossfunctional position that emphasizes working in an advanced electronic office environment. Typical responsibilities would be installation and operation of accounting software packages, computerized processing of federal and state reporting forms, information processing, graphical presentation of reports, and database management. Students enrolled will be required to take 20 credits of Liberal Arts and Sciences courses.

Admission Dates: Fall and Spring Semester

Offered on the Faribault and North Mankato Campuses

The course requirements listed below are specific to the 2013-2014 school year. If you need to view the program from previous years view our [Catalog Archive](#).

This credential is part of the Accounting department. [See the Accounting department page for more details](#)

Required Technical Courses (14 Courses)

Complete all of the following courses:

- [ACCT1800](#) Business Law (3 Credits)
- [ACCT1810](#) Financial Accounting (4 Credits)
- [ACCT1811](#) Managerial Accounting (4 Credits)
- [ACCT1814](#) Payroll Accounting (3 Credits)
- [ACCT1834](#) Computerized Accounting I (3 Credits)
- [ACCT1835](#) Computerized Accounting II (3 Credits)
- [ACCT1870](#) Professional Accounting Careers (1 Credit)
- [ACCT2821](#) Intermediate Accounting I (3 Credits)
- [ACCT2847](#) Fraud, Auditing and Internal Controls (4 Credits)
- [ACCT2861](#) Cost Accounting I (4 Credits)
- [ACCT2864](#) Income Tax I (4 Credits)
- [COMP1200](#) PC Hardware and Software Essentials (4 Credits)
- [COMP1360](#) Introduction to Data Communications and Networking (4 Credits)

[OTEC1840](#) Business Presentations (3 Credits)

Or

[COMP1140](#) Web Development (4 Credits)

Required Liberal Arts and Sciences (5 Courses)

To complete the Accounting Technician AAS Degree, students must complete 18 MNTC credits from 3 of the 10 MNTC Goal areas.

The following courses are required:

- [ENGL100](#) Composition (4 Credits)
- [COMM140](#) Interpersonal Communication (3 Credits)
- [ECON110](#) Principles of Macroeconomics (3 Credits)
- Or
- [ECON120](#) Principles of Microeconomics (3 Credits)
- [MATH115](#) Concepts in Math (4 Credits)

Technical Electives (5 Credits)

Choose 5 credits from ACCT,COMP,MKT,COMP,OTEC,or ECON.

PLEASE NOTE: All program plans are preliminary and curriculum may change without notice. Your [catalog of record](#) may have different requirements.

Elective Liberal Arts and Sciences

You must select one additional credit from any MNTC goal area to reach the 18 credits required.

Or

[MATH120](#) College Algebra (4 Credits)

Or

[MATH154](#) Elementary Statistics (4 Credits)

[COMM110](#) Public Speaking (3 Credits)

Or

[COMM120](#) Small Group Communication (3 Credits)

Accounting Assistant

Diploma • 34 Credits

DIP 2229/DIP 3242



Degree Description

An accounting assistant performs any combination of routine calculating, posting, and verifying duties to obtain primary financial data for use in maintaining accounting records. In addition, the accounting assistant prepares daily bank deposits, writes checks, and maintains a cash disbursement system. All of the Accounting Assistant diploma courses can be applied toward an A.A.S. degree in Accounting.

Admission Dates: Fall and Spring Semester

Offered on the Faribault and North Mankato Campuses

The course requirements listed below are specific to the 2013-2014 school year. If you need to view the program from previous years view our [Catalog Archive](#).

This credential is part of the Accounting department. [See the Accounting department page for more details](#)

Required Technical Courses (8 Courses)

Complete the following courses:

- [ACCT1800](#) Business Law (3 Credits)
- [ACCT1810](#) Financial Accounting (4 Credits)
- [ACCT1811](#) Managerial Accounting (4 Credits)
- [ACCT1814](#) Payroll Accounting (3 Credits)
- [ACCT1834](#) Computerized Accounting I (3 Credits)
- [ACCT1835](#) Computerized Accounting II (3 Credits)
- [ACCT1870](#) Professional Accounting Careers (1 Credit)
- [ACCT2847](#) Fraud, Auditing and Internal Controls (4 Credits)

Required Liberal Arts and Sciences (1 Course)

Complete the following course:

- [ENGL100](#) Composition (4 Credits)

PLEASE NOTE: All program plans are preliminary and curriculum may change without notice. Your [catalog of record](#) may have different requirements.

Elective Credits (5 Credits)

Choose 5 credits from any of the following Technical and/or Liberal Arts and Sciences courses:

- [ACCT2827](#) Principles of Finance (3 Credits)
- [ACCT2850](#) Accounting Internship (1 - 8 Credits)
- [ACCT2863](#) Fund/Nonprofit Accounting (3 Credits)
- [ACCT2864](#) Income Tax I (4 Credits)

- [COMM110](#) Public Speaking (3 Credits)
- Or
- [COMM120](#) Small Group Communication (3 Credits)

Accounting Technician - Associate of Applied Science Degree Course Descriptions**Business Law****ACCT1800 3.00 credits**

This course is an introduction to the principles of law as they apply to citizens and businesses. Topics include ethics, the court system, the legal system, contracts, negotiable instruments, agency and employment, bailments, business organizations, sales and insurance. (Prerequisites: None)

Managerial Accounting**ACCT1811 4.00 credits**

This course covers the accounting principles and concepts applicable to partnership and corporate organizations, accounting for current, contingent, and long-term liabilities, investments, cash flow statements, financial statement analysis, department and branch accounting, consolidated financial statements, plant assets, and intangible assets. Also considered are concepts applicable to analyzing financial statements, managerial and cost accounting principles, and budgeting. (Prerequisites: ACCT1810 with a grade of C or higher)

Computerized Accounting I**ACCT1834 3.00 credits**

This course is an introduction to the use of computers and related software used in the accounting function of the business environment. Topics include, but are not limited to general ledger accounting, payroll procedures, accounts receivable, and accounts payable. The student is also introduced to spreadsheet and database software and their interrelationship with a fully integrated accounting software program. Software for this program includes QuickBooks, Excel, and Access. (Prerequisites: None)

Professional Accounting Careers**ACCT1870 1.00 credits**

This course covers specific topics relating to applying for accounting positions. Topics covered in this course are your appearance, networking tips, exploring different accounting careers, meeting your job's expectations, preparing resumes, and interviewing techniques. Each student is required to have

Financial Accounting**ACCT1810 4.00 credits**

This course covers the fundamental accounting concepts and principles which are used in a business environment. Topics include recording transactions related to internal control, receivables, short-term investments, inventories, plant and equipment, intangible assets, and long-term investments. (Prerequisites: None)

Payroll Accounting**ACCT1814 3.00 credits**

This course covers various state and federal laws pertaining to the computation and payment of salaries and wages. Topics include preparation of employment records, payroll registers, time cards, employee earnings records, and state and federal reports. In addition, we will explore setting up and maintaining a payroll system using Quickbooks. (Prerequisite: None)

Computerized Accounting II**ACCT1835 3.00 credits**

This is the second of the two computerized accounting application series. Topics include, but are not limited to general ledger accounting, payroll procedures, accounts receivable, accounts payable, and job cost accounting. The student is also introduced to advanced functions of spreadsheet software and their interrelationship with a fully integrated accounting software program. Software for this program includes Peachtree and Excel Expert. (Prerequisites: ACCT1834)

Intermediate Accounting I**ACCT2821 3.00 credits**

This is the first of the two course intermediate accounting series. The content of this course covers an overview of the accounting process, the balance sheet, the income statement and statement of cash flows, the time value of money and other various components of the balance sheet. (Prerequisite:

one employment interview as part of this course.
(Prerequisites: None)

ACCT 1810)

Fraud, Auditing and Internal Controls

ACCT2847 4.00 credits

In this course students will learn about occupational fraud, basic auditing techniques and evaluation of internal controls. Covered topics include how and why fraud is committed, fraud detection, establishing and evaluating internal controls, and using internal auditing techniques to verify account balances. (Prerequisites: ACCT 1810)

Income Tax I

ACCT2864 4.00 credits

The purpose of this course is to expose students to an explanation of Federal and Minnesota individual income tax as it relates to the preparation of the required tax returns. Tax research is also examined in this course. Students will have hands-on experience in preparing Federal and Minnesota income tax returns. (Prerequisites: None)

Introduction to Data Communications and Networking

COMP1360 4.00 credits

This course serves as a general introduction for students seeking to acquire a foundation in current network technologies for local area networks (LANs), wide area networks (WANs), and the Internet. The course provides an introduction to the hardware, software, terminology, components, design, and connections of a network. Network concepts such as the OSI model, topologies, and major protocols, as well as the basic functions of system administration and operation are also included. The course is operating system independent and provides an introduction to several popular network operating systems. (Prerequisite: COMP 1200 or instructor approval)

Web Development

COMP1140 4.00 credits

This course focuses on using XHTML to create attractive web presentations. Students will use basic XHTML page markup, good graphical design, planning a web presence, hyperlinks, FTP, using color and images, CSS, tables, multimedia, forms, and an introduction to JavaScript. Minimum typing speed of 20 wpm (35 wpm recommended) (Prerequisites: None)

Cost Accounting I

ACCT2861 4.00 credits

This course covers managerial accounting cost concepts and behaviors. Examples of job order costing, process costing, and accounting for materials, direct labor, and factory overhead will be discussed. (Prerequisites: ACCT 1810, 1811 with a grade of C or higher)

PC Hardware and Software Essentials

COMP1200 4.00 credits

PC Hardware and Software, presents an in-depth exposure to computer hardware and operating systems. Students learn the functionality of hardware and software components as well as suggested best practices in maintenance, and safety issues. Through hands on activities and labs, students learn how to assemble and configure a computer, install operating systems and software, and troubleshoot hardware and software problems. In addition, an introduction to networking is included. This course helps students prepare for CompTIA's A+ certification. (Prerequisites: None)

Business Presentations

OTEC1840 3.00 credits

This course is designed to teach students how to organize, analyze and present information in a professional setting. Students will learn the skills needed to build eye-catching presentations that communicate key information to audiences in business, academics, and organization settings. The learner will compose individual and composite presentations using text, graphs, sounds, and images. (Prerequisites: Basic Windows navigation skills required, applications software knowledge very helpful, speech course also helpful)

Composition

ENGL100 4.00 credits

Composition is concerned with developing, through theory and practice, the ability to communicate in written form for personal and professional reasons. Students will develop writing skills, analytical skills, and critical thinking skills. Students will complete readings, papers, grammar exercises, and in-class activities. Students will learn methods of writing informatively and persuasively. (Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher AND a score of 85.5 or higher on the Sentence Skills portion of the Accuplacer test or completion of ENGL 0080 and ENGL 0090 with a grade of C or higher)(MNTC 1:

Communication) This course has an online option.

Interpersonal Communication

COMM140 3.00 credits

In this class, participants will examine key components of interpersonal communication theory, identify the interpersonal communication skills necessary for healthy relationships, assess their own interpersonal communication effectiveness, and practice and hone interpersonal communication skills necessary for healthy home and work relationships. This course will also address relevant issues of social interaction, including how human diversity/culture (age, race, gender, etc.) affects our interpersonal communication. (Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher)(MNTC 1: Communication)

Principles of Microeconomics

ECON120 3.00 credits

This course examines theories of how various types of product, service, and resource markets operate and the resulting implications for public policy. Topics include decision-making by consumers, business firms, and government as well as price determination, resource allocation, and income determination via markets. (Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher) (MNTC 5, 8: History/Social & Behavioral Sciences, Global Perspective).

College Algebra

MATH120 4.00 credits

This course is mainly concerned with functions, most of which are algebraic. It begins with a general treatment of equations and inequalities and then proceeds to cover linear functions, quadratic functions, other polynomial and rational functions, piecewise functions, equations involving radicals and absolute values, logarithms and exponentials, systems of equations and inequalities, permutations and combinations. (Prerequisites: Two years of high school algebra or completion of MATH 0085 with a grade of C or higher, or a score of 75.5 on the Elementary Algebra portion of the Accuplacer test AND a score of 49.5 or higher on the College Level Math portion of the Accuplacer test) (MNTC 4: Mathematical/Logical Reasoning)

Public Speaking

COMM110 3.00 credits

Principles of Macroeconomics

ECON110 3.00 credits

A study of aggregate economic behavior and current economic issues, policies and problems. Macroeconomics measures such as inflation, employment, and the growth of output are examined along with the tools a government can use to foster a stable economy. (Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher) (MNTC 5, 8: History/Social & Behavioral Science, Global Perspective)

Concepts in Math

MATH115 4.00 credits

Concepts in Mathematics is a general education survey course designed to spotlight the field as an important component of our cultural heritage. It introduces a broad range of topics from classical as well as modern mathematics. The emphasis is on problem solving and developing the logical skills to successfully defend solutions, while at the same time showing how mathematics is a creative human endeavor influencing how we perceive the world. Among the major topics considered are logic, set theory, axiomatic systems, number theory, number systems, analytic geometry, algebra, combinatorics, and elementary probability. (Prerequisites: Two years of high school algebra, completion of MATH 0085 with a grade of C or higher or a score of 75.5 or higher on the Elementary Algebra portion of the Accuplacer test) (MNTC 4: Math/Logical Reasoning)

Elementary Statistics

MATH154 4.00 credits

This course introduces the essential mathematical elements of statistics, applying them to a broad range of areas including business, manufacturing, economics, and the physical, biological and social sciences. Topics include descriptive measures of data, measures of central tendency, variability, standard probability distributions, tests of hypotheses, confidence intervals, and estimation. To put the treatment on a strong foundation, concepts of probability are developed throughout, and shown to form the unifying theme behind modern statistics. (Prerequisites: Two years of high school algebra, completion of MATH 0085 with a grade of C or higher or a score of 75.5 or higher on the Elementary Algebra portion of the Accuplacer test) (MNTC 4: Mathematical/Logical Reasoning)

Small Group Communication

COMM120 3.00 credits

This course develops or improves effective performance in acquiring, evaluating, organizing, and communicating information. Learners develop and apply critical and creative thinking to structuring arguments, making presentations, using multimedia, and supporting each other in impromptu and extemporaneous speaking. Course de-emphasizes competition and stresses personal and workplace effectiveness in communication skills. (Prerequisites: Must have a score of 86 or higher on the Sentence Skills portion of the Accuplacer test or completion of ENGL 0080 and ENGL 0090 with a grade of C or higher) (MNTC 1: Communication)

This course develops or improves effective communication for leaders and participants in the small group setting. Learners develop and apply critical thinking and communication skills through class discussion, group activities, and group presentations. (Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher) (MNTC 1, 2: Communication, Critical Thinking)

Accounting Assistant - Diploma of Occupational Proficiency Course Descriptions**Business Law****ACCT1800 3.00 credits**

This course is an introduction to the principles of law as they apply to citizens and businesses. Topics include ethics, the court system, the legal system, contracts, negotiable instruments, agency and employment, bailments, business organizations, sales and insurance. (Prerequisites: None)

Managerial Accounting**ACCT1811 4.00 credits**

This course covers the accounting principles and concepts applicable to partnership and corporate organizations, accounting for current, contingent, and long-term liabilities, investments, cash flow statements, financial statement analysis, department and branch accounting, consolidated financial statements, plant assets, and intangible assets. Also considered are concepts applicable to analyzing financial statements, managerial and cost accounting principles, and budgeting. (Prerequisites: ACCT1810 with a grade of C or higher)

Computerized Accounting I**ACCT1834 3.00 credits**

This course is an introduction to the use of computers and related software used in the accounting function of the business environment. Topics include, but are not limited to general ledger accounting, payroll procedures, accounts receivable, and accounts payable. The student is also introduced to spreadsheet and database software and their interrelationship with a fully integrated accounting software program. Software for this program includes QuickBooks, Excel, and Access. (Prerequisites: None)

Professional Accounting Careers**ACCT1870 1.00 credits**

This course covers specific topics relating to applying for accounting positions. Topics covered in this course are your appearance, networking tips, exploring different accounting careers, meeting your job's expectations, preparing resumes, and interviewing techniques. Each student is required to have

Financial Accounting**ACCT1810 4.00 credits**

This course covers the fundamental accounting concepts and principles which are used in a business environment. Topics include recording transactions related to internal control, receivables, short-term investments, inventories, plant and equipment, intangible assets, and long-term investments. (Prerequisites: None)

Payroll Accounting**ACCT1814 3.00 credits**

This course covers various state and federal laws pertaining to the computation and payment of salaries and wages. Topics include preparation of employment records, payroll registers, time cards, employee earnings records, and state and federal reports. In addition, we will explore setting up and maintaining a payroll system using Quickbooks. (Prerequisite: None)

Computerized Accounting II**ACCT1835 3.00 credits**

This is the second of the two computerized accounting application series. Topics include, but are not limited to general ledger accounting, payroll procedures, accounts receivable, accounts payable, and job cost accounting. The student is also introduced to advanced functions of spreadsheet software and their interrelationship with a fully integrated accounting software program. Software for this program includes Peachtree and Excel Expert. (Prerequisites: ACCT1834)

Fraud, Auditing and Internal Controls**ACCT2847 4.00 credits**

In this course students will learn about occupational fraud, basic auditing techniques and evaluation of internal controls. Covered topics include how and why fraud is committed, fraud detection, establishing and evaluating internal controls, and using internal auditing techniques to verify account balances.

one employment interview as part of this course.
(Prerequisites: None)

(Prerequisites: ACCT 1810)

Composition

ENGL100 4.00 credits

Composition is concerned with developing, through theory and practice, the ability to communicate in written form for personal and professional reasons. Students will develop writing skills, analytical skills, and critical thinking skills. Students will complete readings, papers, grammar exercises, and in-class activities. Students will learn methods of writing informatively and persuasively. (Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher AND a score of 85.5 or higher on the Sentence Skills portion of the Accuplacer test or completion of ENGL 0080 and ENGL 0090 with a grade of C or higher)(MNTC 1: Communication) This course has an online option.

Principles of Finance

ACCT2827 3.00 credits

This course introduces the student to finance concepts for small to medium size businesses. Concepts covered in this course include financial markets, implication of interest rates to business, understanding of financial statements, risk versus return, use of debt financing, use of equity financing, capital budgeting concepts, cost of capital, determining the appropriate financing mix, forecasting techniques, working capital management, and liquid asset management. (Prerequisites: ACCT1810 & ACCT1811 with a grade of C or higher)

Accounting Internship

ACCT2850 1 - 8 credits

This course provides students with actual experiences in accounting careers. A competency-based internship plan will be developed for each student. The student can receive internship credit for participating in the Volunteer Income Tax Assistance (VITA) program at SCC in conjunction with the Internal Revenue Service, Minnesota Department of Revenue, and Minnesota Valley Action Council. (Prerequisite: Instructor approval)

Fund/Nonprofit Accounting

ACCT2863 3.00 credits

The purpose of this course is to assist students in gaining a knowledge of accounting and financial reporting currently recommended for state and local governmental entities, school districts, and other not-for-profit organizations. The course will assist the student in developing a knowledge of the accounting differences between governmental and not-for-profit entities and business enterprises. (Prerequisites: ACCT1810)

Income Tax I

ACCT2864 4.00 credits

The purpose of this course is to expose students to an explanation of Federal and Minnesota individual income tax as it relates to the preparation of the required tax returns. Tax research is also examined in this course. Students will have hands-on experience in preparing Federal and Minnesota income tax returns. (Prerequisites: None)

Public Speaking

COMM110 3.00 credits

This course develops or improves effective performance in acquiring, evaluating, organizing, and communicating information. Learners develop and apply critical and creative thinking to structuring arguments, making presentations, using multimedia, and supporting each other in impromptu and extemporaneous speaking. Course de-emphasizes competition and stresses personal and workplace effectiveness in communication skills. (Prerequisites: Must have a score of 86 or higher on the Sentence Skills portion of the Accuplacer test or completion of ENGL 0080 and ENGL 0090 with a grade of C or higher) (MNTC 1: Communication)

Small Group Communication

COMM120 3.00 credits

This course develops or improves effective communication for leaders and participants in the small group setting. Learners develop and apply critical thinking and communication skills through class discussion, group activities, and group presentations. (Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher) (MNTC 1, 2: Communication, Critical Thinking)

Accounting Technician

Diploma • 48 Credits

DIP 2213/DIP 3241



Degree Description

The Accounting Technician monitors and controls various types of electronic data processing equipment used to process accounting data. Applications would include automated general ledger and other sub-systems, spreadsheet applications, database management, and the use of graphics. All of the Accounting Technician diploma courses can be applied toward an Accountant AAS degree.

Admission Dates: Fall and Spring Semester

Offered on the Faribault and North Mankato Campuses

The course requirements listed below are specific to the 2013-2014 school year. If you need to view the program from previous years view our [Catalog Archive](#).

This credential is part of the Accounting department. [See the Accounting department page for more details](#)

Required Technical Courses (12 Courses)

Complete all of the following courses:

- [ACCT1800](#) Business Law (3 Credits)
- [ACCT1810](#) Financial Accounting (4 Credits)
- [ACCT1811](#) Managerial Accounting (4 Credits)
- [ACCT1814](#) Payroll Accounting (3 Credits)
- [ACCT1834](#) Computerized Accounting I (3 Credits)
- [ACCT1835](#) Computerized Accounting II (3 Credits)
- [ACCT1870](#) Professional Accounting Careers (1 Credit)
- [ACCT2821](#) Intermediate Accounting I (3 Credits)
- [ACCT2847](#) Fraud, Auditing and Internal Controls (4 Credits)
- [ACCT2861](#) Cost Accounting I (4 Credits)
- [ACCT2863](#) Fund/Nonprofit Accounting (3 Credits)
- [ACCT2864](#) Income Tax I (4 Credits)

Elective Credits (5 Credits)

Choose 5 credits from the following Technical and/or Liberal Arts and Sciences courses:

- [ACCT2827](#) Principles of Finance (3 Credits)
- [ACCT2850](#) Accounting Internship (1 - 8 Credits)
- [COMM110](#) Public Speaking (3 Credits)
- Or
- [COMM120](#) Small Group Communication (3 Credits)

Required Liberal Arts and Sciences (1 Course)

Complete the following course:

- [ENGL100](#) Composition (4 Credits)

PLEASE NOTE: All program plans are preliminary and curriculum may change without notice. Your [catalog of record](#) may have different requirements.

Accounting Technician - Diploma of Occupational Proficiency Course Descriptions**Business Law****ACCT1800 3.00 credits**

This course is an introduction to the principles of law as they apply to citizens and businesses. Topics include ethics, the court system, the legal system, contracts, negotiable instruments, agency and employment, bailments, business organizations, sales and insurance. (Prerequisites: None)

Managerial Accounting**ACCT1811 4.00 credits**

This course covers the accounting principles and concepts applicable to partnership and corporate organizations, accounting for current, contingent, and long-term liabilities, investments, cash flow statements, financial statement analysis, department and branch accounting, consolidated financial statements, plant assets, and intangible assets. Also considered are concepts applicable to analyzing financial statements, managerial and cost accounting principles, and budgeting. (Prerequisites: ACCT1810 with a grade of C or higher)

Computerized Accounting I**ACCT1834 3.00 credits**

This course is an introduction to the use of computers and related software used in the accounting function of the business environment. Topics include, but are not limited to general ledger accounting, payroll procedures, accounts receivable, and accounts payable. The student is also introduced to spreadsheet and database software and their interrelationship with a fully integrated accounting software program. Software for this program includes QuickBooks, Excel, and Access. (Prerequisites: None)

Professional Accounting Careers**ACCT1870 1.00 credits**

This course covers specific topics relating to applying for accounting positions. Topics covered in this course are your appearance, networking tips, exploring different accounting careers, meeting your job's expectations, preparing resumes, and interviewing techniques. Each student is required to have

Financial Accounting**ACCT1810 4.00 credits**

This course covers the fundamental accounting concepts and principles which are used in a business environment. Topics include recording transactions related to internal control, receivables, short-term investments, inventories, plant and equipment, intangible assets, and long-term investments. (Prerequisites: None)

Payroll Accounting**ACCT1814 3.00 credits**

This course covers various state and federal laws pertaining to the computation and payment of salaries and wages. Topics include preparation of employment records, payroll registers, time cards, employee earnings records, and state and federal reports. In addition, we will explore setting up and maintaining a payroll system using Quickbooks. (Prerequisite: None)

Computerized Accounting II**ACCT1835 3.00 credits**

This is the second of the two computerized accounting application series. Topics include, but are not limited to general ledger accounting, payroll procedures, accounts receivable, accounts payable, and job cost accounting. The student is also introduced to advanced functions of spreadsheet software and their interrelationship with a fully integrated accounting software program. Software for this program includes Peachtree and Excel Expert. (Prerequisites: ACCT1834)

Intermediate Accounting I**ACCT2821 3.00 credits**

This is the first of the two course intermediate accounting series. The content of this course covers an overview of the accounting process, the balance sheet, the income statement and statement of cash flows, the time value of money and other various components of the balance sheet. (Prerequisite:

one employment interview as part of this course.
(Prerequisites: None)

ACCT 1810)

Fraud, Auditing and Internal Controls

ACCT2847 4.00 credits

In this course students will learn about occupational fraud, basic auditing techniques and evaluation of internal controls. Covered topics include how and why fraud is committed, fraud detection, establishing and evaluating internal controls, and using internal auditing techniques to verify account balances. (Prerequisites: ACCT 1810)

Cost Accounting I

ACCT2861 4.00 credits

This course covers managerial accounting cost concepts and behaviors. Examples of job order costing, process costing, and accounting for materials, direct labor, and factory overhead will be discussed. (Prerequisites: ACCT 1810, 1811 with a grade of C or higher)

Fund/Nonprofit Accounting

ACCT2863 3.00 credits

The purpose of this course is to assist students in gaining a knowledge of accounting and financial reporting currently recommended for state and local governmental entities, school districts, and other not-for-profit organizations. The course will assist the student in developing a knowledge of the accounting differences between governmental and not-for-profit entities and business enterprises. (Prerequisites: ACCT1810)

Income Tax I

ACCT2864 4.00 credits

The purpose of this course is to expose students to an explanation of Federal and Minnesota individual income tax as it relates to the preparation of the required tax returns. Tax research is also examined in this course. Students will have hands-on experience in preparing Federal and Minnesota income tax returns. (Prerequisites: None)

Composition

ENGL100 4.00 credits

Composition is concerned with developing, through theory and practice, the ability to communicate in written form for personal and professional reasons. Students will develop writing skills, analytical skills, and critical thinking skills. Students will complete readings, papers, grammar exercises, and in-class activities. Students will learn methods of writing informatively and persuasively. (Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher AND a score of 85.5 or higher on the Sentence Skills portion of the Accuplacer test or completion of ENGL 0080 and ENGL 0090 with a grade of C or higher)(MNTC 1: Communication) This course has an online option.

Principles of Finance

ACCT2827 3.00 credits

This course introduces the student to finance concepts for small to medium size businesses. Concepts covered in this course include financial markets, implication of interest rates to business, understanding of financial statements, risk versus return, use of debt financing, use of equity financing, capital budgeting concepts, cost of capital, determining the appropriate financing mix, forecasting techniques, working capital management, and liquid asset management. (Prerequisites: ACCT1810 & ACCT1811 with a grade of C or higher)

Accounting Internship

ACCT2850 1 - 8 credits

This course provides students with actual experiences in accounting careers. A competency-based internship plan will be developed for each student. The student can receive internship credit for participating in the Volunteer Income Tax Assistance (VITA) program at SCC in conjunction with the Internal Revenue Service, Minnesota Department of Revenue, and Minnesota Valley Action Council. (Prerequisite: Instructor approval)

Public Speaking

COMM110 3.00 credits

This course develops or improves effective performance in acquiring, evaluating, organizing, and communicating information. Learners develop and apply critical and creative thinking to structuring arguments, making presentations, using multimedia, and supporting each other in impromptu and extemporaneous speaking. Course de-emphasizes competition and stresses personal and workplace effectiveness in communication skills. (Prerequisites: Must have a score of 86 or higher on the Sentence Skills portion of the Accuplacer test or completion of ENGL 0080 and ENGL 0090 with a grade of C or higher) (MNTC 1: Communication)

Small Group Communication

COMM120 3.00 credits

This course develops or improves effective communication for leaders and participants in the small group setting. Learners develop and apply critical thinking and communication skills through class discussion, group activities, and group presentations. (Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher) (MNTC 1, 2: Communication, Critical Thinking)

Payroll Clerk

Certificate • 23 Credits

CERT2248/CERT3270



Degree Description

A payroll clerk fills the need for timely and accurate payroll cost information. This certificate is a series of courses that provide entry-level skills in payroll accounting. This includes the recording function all the way through to the disbursement of the checks. With constant changes in the legal environment and technological advances, this occupation is critical. All of the Payroll Clerk certificate courses can be applied toward an A.A.S. degree in Accounting, the Accounting Assistant-Diploma and the Accounting Technician-Diploma.

Admission Dates: Fall and Spring Semester

Offered on the Faribault and North Mankato Campuses

The course requirements listed below are specific to the 2013-2014 school year. If you need to view the program from previous years view our [Catalog Archive](#).

This credential is part of the Accounting department. [See the Accounting department page for more details](#)

Required Technical Courses (5 Courses)

Complete all of the following courses:

- [ACCT1810](#) Financial Accounting (4 Credits)
- [ACCT1814](#) Payroll Accounting (3 Credits)
- [ACCT1834](#) Computerized Accounting I (3 Credits)
- [ACCT1835](#) Computerized Accounting II (3 Credits)
- [ACCT1870](#) Professional Accounting Careers (1 Credit)

Elective Credits (9 Credits)

Choose 9 credits from any of the following Technical and/or Liberal Arts and Sciences courses:

- [ACCT1811](#) Managerial Accounting (4 Credits)
- [ACCT2847](#) Fraud, Auditing and Internal Controls (4 Credits)
- [MKT 1930](#) Human Resource Management (3 Credits)
- [COMM140](#) Interpersonal Communication (3 Credits)

- [COMM110](#) Public Speaking (3 Credits)
- Or
- [COMM120](#) Small Group Communication (3 Credits)

PLEASE NOTE: All program plans are preliminary and curriculum may change without notice. Your [catalog of record](#) may have different requirements.

Payroll Clerk - Certificate of Training Course Descriptions**Financial Accounting****ACCT1810 4.00 credits**

This course covers the fundamental accounting concepts and principles which are used in a business environment. Topics include recording transactions related to internal control, receivables, short-term investments, inventories, plant and equipment, intangible assets, and long-term investments. (Prerequisites: None)

Computerized Accounting I**ACCT1834 3.00 credits**

This course is an introduction to the use of computers and related software used in the accounting function of the business environment. Topics include, but are not limited to general ledger accounting, payroll procedures, accounts receivable, and accounts payable. The student is also introduced to spreadsheet and database software and their interrelationship with a fully integrated accounting software program. Software for this program includes QuickBooks, Excel, and Access. (Prerequisites: None)

Professional Accounting Careers**ACCT1870 1.00 credits**

This course covers specific topics relating to applying for accounting positions. Topics covered in this course are your appearance, networking tips, exploring different accounting careers, meeting your job's expectations, preparing resumes, and interviewing techniques. Each student is required to have one employment interview as part of this course. (Prerequisites: None)

Fraud, Auditing and Internal Controls**ACCT2847 4.00 credits**

In this course students will learn about occupational fraud, basic auditing techniques and evaluation of internal controls. Covered topics include how and why fraud is committed, fraud detection, establishing and evaluating internal controls, and using internal auditing techniques to verify account balances.

Payroll Accounting**ACCT1814 3.00 credits**

This course covers various state and federal laws pertaining to the computation and payment of salaries and wages. Topics include preparation of employment records, payroll registers, time cards, employee earnings records, and state and federal reports. In addition, we will explore setting up and maintaining a payroll system using Quickbooks. (Prerequisite: None)

Computerized Accounting II**ACCT1835 3.00 credits**

This is the second of the two computerized accounting application series. Topics include, but are not limited to general ledger accounting, payroll procedures, accounts receivable, accounts payable, and job cost accounting. The student is also introduced to advanced functions of spreadsheet software and their interrelationship with a fully integrated accounting software program. Software for this program includes Peachtree and Excel Expert. (Prerequisites: ACCT1834)

Managerial Accounting**ACCT1811 4.00 credits**

This course covers the accounting principles and concepts applicable to partnership and corporate organizations, accounting for current, contingent, and long-term liabilities, investments, cash flow statements, financial statement analysis, department and branch accounting, consolidated financial statements, plant assets, and intangible assets. Also considered are concepts applicable to analyzing financial statements, managerial and cost accounting principles, and budgeting. (Prerequisites: ACCT1810 with a grade of C or higher)

Human Resource Management**MKT 1930 3.00 credits**

This course focuses on human resource management issues. The course covers the techniques and legal aspects of recruiting, hiring, firing, promotion, documentation, evaluation and other areas essential to the personnel function. (Prerequisites: None)

(Prerequisites: ACCT 1810)

Interpersonal Communication

COMM140 3.00 credits

In this class, participants will examine key components of interpersonal communication theory, identify the interpersonal communication skills necessary for healthy relationships, assess their own interpersonal communication effectiveness, and practice and hone interpersonal communication skills necessary for healthy home and work relationships. This course will also address relevant issues of social interaction, including how human diversity/culture (age, race, gender, etc.) affects our interpersonal communication. (Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher)(MNTC 1: Communication)

Small Group Communication

COMM120 3.00 credits

This course develops or improves effective communication for leaders and participants in the small group setting. Learners develop and apply critical thinking and communication skills through class discussion, group activities, and group presentations. (Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher) (MNTC 1, 2: Communication, Critical Thinking)

Public Speaking

COMM110 3.00 credits

This course develops or improves effective performance in acquiring, evaluating, organizing, and communicating information. Learners develop and apply critical and creative thinking to structuring arguments, making presentations, using multimedia, and supporting each other in impromptu and extemporaneous speaking. Course de-emphasizes competition and stresses personal and workplace effectiveness in communication skills. (Prerequisites: Must have a score of 86 or higher on the Sentence Skills portion of the Accuplacer test or completion of ENGL 0080 and ENGL 0090 with a grade of C or higher) (MNTC 1: Communication)

Agribusiness Production Department Overview

Emphasis Areas available include: Agronomy, Swine, Dairy, Diversified

Program emphasis areas provide students with an opportunity for study in the areas of plant and animal production. The crop production areas consist of selection, planning, management, harvesting, and marketing. Areas of soil science are also studied focusing on fertility, conservation, and tillage. The animal production study consists of areas in breeding, feeding, care, management and marketing. In addition, courses in farm machinery, buildings and structures, farm management, farm accounting, farm business analysis, and farm business reorganization provide a broad-based program of study. Students will be required to keep a complete farm record for analysis and interpretation. An on-the-farm internship will be required. The A.A.S. Degree includes 18 credits of Liberal Arts and Sciences and the Diploma includes up to 6 credits of Liberal Arts and Sciences respectively.

Core Competencies

1. Prepare and assess a livestock management plan
2. Develop and assess a soil and crop management plan
3. Perform farm business operations
4. Utilize a comprehensive farm business plan
5. Demonstrate approved management practices used to select, cultivate and harvest agricultural crops.
6. Demonstrate effective participation in an agribusiness team.

Department Faculty

Don Hermanson, Pete Neigebauer

Agribusiness Production Degrees

Agribusiness Production AAS Degree
Agribusiness Production Diploma

Agribusiness Production

A.A.S. Degree • 72 Credits

AAS 3152



Degree Description

Here is a list of courses required to earn the Agribusiness Production Associate of Applied Science Degree

Admission Dates: Fall and Spring Semester

Offered on the North Mankato Campus

The course requirements listed below are specific to the 2013-2014 school year. If you need to view the program from previous years view our [Catalog Archive](#).

This credential is part of the Agribusiness Production department. [See the Agribusiness Production department page for more details](#)

Required Technical Courses (11 Courses)

You must complete all of the following classes:

- [AGEC1100](#) Agricultural Economics (3 Credits)
- [AGEC1200](#) Principles of Farm Records (3 Credits)
- [AGEC2400](#) Marketing Principles (3 Credits)
- [AGEC2250](#) Farm Business Planning & Analysis (4 Credits)
- [AGEC2500](#) Agricultural Transfer and Law (2 Credits)
- [AGRI2700](#) Agricultural Technology Seminar (2 Credits)
- [ANSC1100](#) Livestock Production Principles (3 Credits)
- [MEAG1500](#) Facility Maintenance (3 Credits)
- [PLSC1100](#) Soils I (3 Credits)
- [PLSC1300](#) Agronomy I (2 Credits)
- [SGAG1000](#) Ag Orientation (1 Credit)

Agribusiness Emphasis Areas (14 Credits)

Select at least 14 credits from one of the following Agribusiness emphasis areas.

Animal Science Emphasis: ANSC1105,1200,1205,1305, ANSC2100, SWPR1050,1200,1300,1500,2000, PLSC1105, AGRI1800, AGEC2450,2600

Agronomy Emphasis: PLSC1105,1200,1205,1400,2100,2700, MEAG1610, AGRI1800, AGEC2450,2600

Diversified Emphasis: Select 14 credits from any of these departments: AGEC, AGBS, AGRI, ANSC, MEAG, PLSC or SWPR.

Additional Required Liberal Arts and Sciences

Select additional courses from MNTC Goal Areas 2 - 10 to total 18 credits.

Internship (11 Credits)

Complete 11 credits

[AGRI2780](#) Agribusiness Internship (1 - 9 Credits)

PLEASE NOTE: All program plans are preliminary and curriculum may change without notice. Your [catalog of record](#) may have different requirements.

Required Liberal Arts and Sciences (2 Courses)

To complete an AAS Degree, students must complete 18 MNTC credits from 3 of the 10 MNTC Goal Areas.

Two courses from MnTC Area 1 are required.

Agribusiness Production - Associate of Applied Science Degree Course Descriptions**Agricultural Economics****AGEC1100 3.00 credits**

This course covers agriculture's economic dimensions and impact, economic principles, calculation of economic returns, and evaluation of economic alternatives. Capital use, cost appraisal, risk considerations under a variety of economic conditions, farm credit sources and creditor relationships will also be discussed. (Prerequisites: None)

Marketing Principles**AGEC2400 3.00 credits**

This course covers futures market structure and function, futures commodity contract specifications, futures trading procedures, commodity futures trading strategies and introduction to commodity options. (Prerequisites: AGEC 1100)

Agricultural Transfer and Law**AGEC2500 2.00 credits**

This course covers farm estate planning. Topics include federal and state estate tax laws and their impact, estate-planning options, will preparation, and the role of life insurance. Course includes sources of law, basic contract types and components, personal and real property features, land descriptions, legal fences, animal control legalities, water rights, liability responsibilities, and bankruptcy provisions. (Prerequisites: None)

Livestock Production Principles**ANSC1100 3.00 credits****Principles of Farm Records****AGEC1200 3.00 credits**

This course covers types of records, setup and use of a computerized record keeping software package, completion of a sample farm record problem with a computerized record program, a review of various recordkeeping systems, and selection and implementation of computerized record programs. Students will initiate records on a current farming operation. (Prerequisites: None)

Farm Business Planning & Analysis**AGEC2250 4.00 credits**

This course covers closeout and analysis of a farm accounting problem or the student's own farm business. Also covered will be various analysis techniques, a comparative analysis of all farm production, efficiency and financial factors and a review of current tax management factors. The course will review enterprise, whole farm business and personal expenses in South Central Minnesota region. The course will also cover cash flows, business plans and enterprise budgeting. This course will focus on financial management records and the analysis of each production component of the business. Students will use FinPack software to complete their analysis and to develop business plans for their future business goals. (Prerequisites: AGEC 1200)

Agricultural Technology Seminar**AGRI2700 2.00 credits**

This seminar will provide students the opportunity to self-direct studies in agricultural technology in their areas of interest. Technologies to be considered could include but, are not limited to, plant protection, precision farming, application industries, livestock equipment, biotechnologies, financial resource management, sustainable agriculture, environmental impacts of agriculture, agricultural workforce, and agricultural production. Some organized events will be part of this course. The major emphasis will be self-directed learning. (Prerequisites: None)

Facility Maintenance**MEAG1500 3.00 credits**

This course covers animal production history and economic impact, breed development, animal anatomy and physiology, animal product features, gland and hormone functions, growth and lactation physiology, environmental animal production factors, and animal research. Course will focus on disease prevention and the means required to promote productive livestock production. Some time will be spent on analyzing specific diseases, describing symptoms, and treatment. (Prerequisites: None)

Soils I

PLSC1100 3.00 credits

This course has a lecture and a lab component. Areas of study will include the physical properties, chemical properties, biological properties, soil formation, classification, essential nutrient and soil survey. There will be emphasis on soil and water conservation and practices that can be used to reduce soil erosion. Evaluations of soil samples will be conducted in the agribusiness lab and in the field. (Prerequisites: None)

Ag Orientation

SGAG1000 1.00 credits

Students will become oriented to the careers in agriculture related to the specific field they plan to enter. Completion of interviews of industry professionals will be required and students will need to write a career plan relating to the path they have been oriented. (Prerequisite: None)

This course covers farm and residential electrical wiring. Practical 120/240-volt circuit wiring, electrical safety, device selection, installation methods, grounding, bonding and service entrance panels are included. Agricultural confinement housing wiring and electric motors for frame application are explained. Another component in this course includes both electric arc, gas welding and a short section on the wire welding system. Students will spend time in the welding lab completing welds. (Prerequisites: None)

Agronomy I

PLSC1300 2.00 credits

This course covers agronomy principles for midwest crops. The course covers basic components of plant growth, seed quality, plant parts, plant growth and development, plant classification, maturity systems and seeding rates. Corn and soybean production will be major crops of consideration. (Prerequisites: None)

Agribusiness Internship

AGRI2780 1 - 9 credits

This course is a cooperative educational program between the student, faculty, and the internship site/business. Students will apply competencies gained from previous coursework into an agribusiness industry workplace. Specific tasks to be completed by the student and will be identified in an individual training plan developed by the student, faculty and internship supervisor. Each training plan is specific to the individual student and business enterprise where the student is employed. (Prerequisite: Prior approval by the instructor and cooperating business supervisor along with a signed internship agreement)

Agribusiness Production

Diploma • 72 Credits

DIP 3153



Degree Description

Here is a list of courses required to earn the Agribusiness Production Diploma of Occupational Proficiency

Admission Dates: Fall and Spring Semester

Offered on the North Mankato Campus

The course requirements listed below are specific to the 2013-2014 school year. If you need to view the program from previous years view our [Catalog Archive](#).

This credential is part of the Agribusiness Production department. [See the Agribusiness Production department page for more details](#)

Required Technical Courses (14 Courses)

You must complete all of the following classes:

- [AGEC1100](#) Agricultural Economics (3 Credits)
- [AGEC1200](#) Principles of Farm Records (3 Credits)
- [AGEC2400](#) Marketing Principles (3 Credits)
- [AGEC2250](#) Farm Business Planning & Analysis (4 Credits)
- [AGEC2500](#) Agricultural Transfer and Law (2 Credits)
- [AGEC2450](#) Commodity Marketing Strategies (2 Credits)
- [AGRI1800](#) Employer/Employee Issues (2 Credits)
- [AGRI2700](#) Agricultural Technology Seminar (2 Credits)
- [ANSC1100](#) Livestock Production Principles (3 Credits)
- [MEAG1500](#) Facility Maintenance (3 Credits)
- [MEAG2200](#) Planning Farmstead Environments (3 Credits)
- [PLSC1100](#) Soils I (3 Credits)
- [PLSC1300](#) Agronomy I (2 Credits)
- [SGAG1000](#) Ag Orientation (1 Credit)

Internship (11 Credits)

Complete 11 credits

- [AGRI2780](#) Agribusiness Internship (1 - 9 Credits)

PLEASE NOTE: All program plans are preliminary and curriculum may change without notice. Your [catalog of record](#) may have different requirements.

Agribusiness Emphasis Areas (19 Credits)

Select at least 19 credits from one of the following Agribusiness emphasis areas.

Animal Science Emphasis: ANSC1105,1200,1205,1305, ANSC2100, SWPR1050,1200,1300,1500,2000, PLSC1105, AGEC2600

Agronomy Emphasis: PLSC1105,1200,1205,1400,2100,2700, MEAG1610, AGEC2600, AGBS2015

Diversified Emphasis: Select 19 credits from any of these departments: AGEC, AGBS, AGRI, ANSC, MEAG, PLSC or SWPR.

Required Liberal Arts and Sciences (1 Course)

Choose 1 course from MnTC Goal Area 1:

Additional Required Liberal Arts and Sciences (1 Course)

Choose 1 course from MnTC Goal Areas 2 through 10.

Agribusiness Production - Diploma of Occupational Proficiency Course Descriptions**Agricultural Economics****AGEC1100 3.00 credits**

This course covers agriculture's economic dimensions and impact, economic principles, calculation of economic returns, and evaluation of economic alternatives. Capital use, cost appraisal, risk considerations under a variety of economic conditions, farm credit sources and creditor relationships will also be discussed. (Prerequisites: None)

Marketing Principles**AGEC2400 3.00 credits**

This course covers futures market structure and function, futures commodity contract specifications, futures trading procedures, commodity futures trading strategies and introduction to commodity options. (Prerequisites: AGEC 1100)

Agricultural Transfer and Law**AGEC2500 2.00 credits**

This course covers farm estate planning. Topics include federal and state estate tax laws and their impact, estate-planning options, will preparation, and the role of life insurance. Course includes sources of law, basic contract types and components, personal and real property features, land descriptions, legal fences, animal control legalities, water rights, liability responsibilities, and bankruptcy provisions. (Prerequisites: None)

Employer/Employee Issues**AGRI1800 2.00 credits**

This course covers the principles of supervision and being supervised as they relate to the goals of agriculture

Principles of Farm Records**AGEC1200 3.00 credits**

This course covers types of records, setup and use of a computerized record keeping software package, completion of a sample farm record problem with a computerized record program, a review of various recordkeeping systems, and selection and implementation of computerized record programs. Students will initiate records on a current farming operation. (Prerequisites: None)

Farm Business Planning & Analysis**AGEC2250 4.00 credits**

This course covers closeout and analysis of a farm accounting problem or the student's own farm business. Also covered will be various analysis techniques, a comparative analysis of all farm production, efficiency and financial factors and a review of current tax management factors. The course will review enterprise, whole farm business and personal expenses in South Central Minnesota region. The course will also cover cash flows, business plans and enterprise budgeting. This course will focus on financial management records and the analysis of each production component of the business. Students will use FinPack software to complete their analysis and to develop business plans for their future business goals. (Prerequisites: AGEC 1200)

Commodity Marketing Strategies**AGEC2450 2.00 credits**

This course covers strategies of commodity marketing of agricultural products. Students will apply marketing principles in various market situations. Students will work with forward contracts, basis contracts, futures contracts, and option strategies in agriculture commodities. Students will develop market plans for agribusiness marketing and input needs. (Prerequisites: AGEC 1100, AGEC 2400)

Agricultural Technology Seminar**AGRI2700 2.00 credits**

This seminar will provide students the opportunity to self-direct studies in agricultural technology in their areas of interest.

businesses. Supervision problems with practical solutions will be emphasized. Personnel management techniques including determining personnel needs, finding and recruiting people, performance appraisals, training plans, promotions and terminations will be included. (Prerequisites: None)

Livestock Production Principles

ANSC1100 3.00 credits

This course covers animal production history and economic impact, breed development, animal anatomy and physiology, animal product features, gland and hormone functions, growth and lactation physiology, environmental animal production factors, and animal research. Course will focus on disease prevention and the means required to promote productive livestock production. Some time will be spent on analyzing specific diseases, describing symptoms, and treatment. (Prerequisites: None)

Planning Farmstead Environments

MEAG2200 3.00 credits

This course covers farm building materials and methods of construction. Farmstead planning concepts are examined and applied to the student's home farm situation. Design and drawing of various types of farm buildings are included. The storing, drying, processing and handling of grain and feed are included. Ventilation of livestock buildings and animal waste management is emphasized. Students will gain experience in sizing and selecting equipment for agricultural materials handling applications. (Prerequisite: None)

Agronomy I

PLSC1300 2.00 credits

This course covers agronomy principles for midwest crops. The course covers basic components of plant growth, seed quality, plant parts, plant growth and development, plant classification, maturity systems and seeding rates. Corn and soybean production will be major crops of consideration. (Prerequisites: None)

Agribusiness Internship

AGRI2780 1 - 9 credits

This course is a cooperative educational program between the student, faculty, and the internship site/business. Students will apply competencies gained from previous coursework into an agribusiness industry workplace. Specific tasks to be completed by the student and will be identified in an individual training plan developed by the student, faculty and internship supervisor. Each training plan is specific to the individual student and business enterprise where the student is employed. (Prerequisite: Prior approval by the instructor and cooperating business supervisor along with a signed

Technologies to be considered could include but, are not limited to, plant protection, precision farming, application industries, livestock equipment, biotechnologies, financial resource management, sustainable agriculture, environmental impacts of agriculture, agricultural workforce, and agricultural production. Some organized events will be part of this course. The major emphasis will be self-directed learning. (Prerequisites: None)

Facility Maintenance

MEAG1500 3.00 credits

This course covers farm and residential electrical wiring. Practical 120/240-volt circuit wiring, electrical safety, device selection, installation methods, grounding, bonding and service entrance panels are included. Agricultural confinement housing wiring and electric motors for frame application are explained. Another component in this course includes both electric arc, gas welding and a short section on the wire welding system. Students will spend time in the welding lab completing welds. (Prerequisites: None)

Soils I

PLSC1100 3.00 credits

This course has a lecture and a lab component. Areas of study will include the physical properties, chemical properties, biological properties, soil formation, classification, essential nutrient and soil survey. There will be emphasis on soil and water conservation and practices that can be used to reduce soil erosion. Evaluations of soil samples will be conducted in the agribusiness lab and in the field. (Prerequisites: None)

Ag Orientation

SGAG1000 1.00 credits

Students will become oriented to the careers in agriculture related to the specific field they plan to enter. Completion of interviews of industry professionals will be required and students will need to write a career plan relating to the path they have been oriented. (Prerequisite: None)

Agribusiness Service and Management Department Overview

Emphasis Areas available include: Agronomy, Animal Science, Diversified

These program areas are designed to prepare students to sell and deliver services as employees of agribusiness firms in the crop and livestock related industries. Duties include performance of retail and office procedural tasks, preparation and implementation of marketing programs, sales and sales management, preparation of financial and business reports, delivery of products and services and managing selected aspects of these businesses. The program includes technical agriculture courses in the areas of plant, soil and animal science as well as agricultural industry equipment operation and maintenance. The courses in business include the subject areas of accounting, business procedures, interpersonal communication, financial and business management, marketing, selling and computer operations. The A.A.S. Degree includes 18 credits of Liberal Arts and Sciences and the Diploma includes up to 6 credits of Liberal Arts and Sciences respectively. An 11 credit supervised occupational internship in an agribusiness firm is required.

Core Competencies

1. Demonstrate effective participation on an agribusiness team
2. Maintain and safely operate industry equipment
3. Demonstrate financial management skills
4. Demonstrate promotion and selling of agricultural services and products
5. Develop and maintain records required for successful employment.

Department Faculty

Don Hermanson, Pete Neigebauer, Bruce White

Agribusiness Service and Management Degrees

Agribusiness Service and Management AAS Degree
Agribusiness Service and Management Diploma

Agribusiness Service and Management

A.A.S. Degree • 72 Credits

AAS 3150



Degree Description

Here is a list of courses required to earn the Agribusiness Service and Management Associate of Applied Science Degree

Admission Dates: Fall and Spring Semester

Offered on the North Mankato Campus

The course requirements listed below are specific to the 2013-2014 school year. If you need to view the program from previous years view our [Catalog Archive](#).

This credential is part of the Agribusiness Service and Management department. [See the Agribusiness Service and Management department page for more details](#)

Required Technical Courses (9 Courses)

You must complete all of the following classes:

- [AGBS1100](#) Agricultural Selling Skills (3 Credits)
- [AGBS2150](#) Agribusiness Financial Management (4 Credits)
- [AGEC1100](#) Agricultural Economics (3 Credits)
- [AGEC2400](#) Marketing Principles (3 Credits)
- [AGRI2700](#) Agricultural Technology Seminar (2 Credits)
- [ANSC1100](#) Livestock Production Principles (3 Credits)
- [PLSC1100](#) Soils I (3 Credits)
- [PLSC1300](#) Agronomy I (2 Credits)
- [SGAG1000](#) Ag Orientation (1 Credit)

Agribusiness Emphasis Areas (19 Credits)

Select at least 19 credits from one of the following Agribusiness emphasis areas.

Animal Science Emphasis: ANSC1105,1200,1205,1305
ANSC2100, SWPR1050,1200,1300,1500,2000, PLSC1105,
AGRI1800, AGECE2450,2600

Agronomy Emphasis: PLSC1105,1200,1205,1400,2100,2700,
MEAG1500,1700, AGBS2105, AGECE2600

Diversified Emphasis: Select 19 credits from any of these departments: AGECE, AGBS, AGRI, ANSC, MEAG, PLSC or SWPR.

Additional Required Liberal Arts and Sciences

Select additional courses from MNTC Goal Areas 2 - 10 to total 18 credits.

Internship (11 Credits)

Complete 11 credits

- [AGRI2780](#) Agribusiness Internship (1 - 9 Credits)

PLEASE NOTE: All program plans are preliminary and curriculum may change without notice. Your [catalog of record](#) may have different requirements.

Required Liberal Arts and Sciences (2 Courses)

To complete an AAS Degree, students must complete 18 MNTC credits from 3 of the 10 MNTC Goal Areas.

Two courses from MnTC Area 1 are required.

Agribusiness Service and Management - Associate of Applied Science Degree Course Descriptions**Agricultural Selling Skills****AGBS1100 3.00 credits**

This course covers the basic and advanced principles and techniques used in selling agricultural merchandise and services. Agricultural Sales has taken on increased importance in recent years. The introduction of new products and services has magnified the need for technically competent knowledgeable sales personnel. Role-playing and advanced, in-depth sales presentations will be done in class. Students will also be required to make an industry visit and write appropriate letters. (Prerequisites: None)

Agribusiness Financial Management**AGBS2150 4.00 credits**

This course covers all major aspects of agribusiness financial management through extensive problem solving, financial analysis and financial planning. Students will describe and calculate 16 ratios, business cash flows, inventory controls, budgeting and borrowing considerations of various types of agribusinesses. Comparative analysis of various agribusiness companies will be used to demonstrate the application of the process in contemporary firms using 2005, 2006 or 2007 annual business reports. Application of computerized programs relevant to agribusiness financial analysis will be practiced. (Prerequisite: AGECE 1100)

Agricultural Economics**AGEC1100 3.00 credits**

This course covers agriculture's economic dimensions and impact, economic principles, calculation of economic returns, and evaluation of economic alternatives. Capital use, cost appraisal, risk considerations under a variety of economic conditions, farm credit sources and creditor relationships will also be discussed. (Prerequisites: None)

Marketing Principles**AGEC2400 3.00 credits**

This course covers futures market structure and function, futures commodity contract specifications, futures trading procedures, commodity futures trading strategies and introduction to commodity options. (Prerequisites: AGECE 1100)

Agricultural Technology Seminar**AGRI2700 2.00 credits**

This seminar will provide students the opportunity to self-direct studies in agricultural technology in their areas of interest. Technologies to be considered could include but, are not limited to, plant protection, precision farming, application industries, livestock equipment, biotechnologies, financial resource management, sustainable agriculture, environmental impacts of agriculture, agricultural workforce, and agricultural production. Some organized events will be part of this course. The major emphasis will be self-directed learning. (Prerequisites: None)

Livestock Production Principles**ANSC1100 3.00 credits**

This course covers animal production history and economic impact, breed development, animal anatomy and physiology, animal product features, gland and hormone functions, growth and lactation physiology, environmental animal production factors, and animal research. Course will focus on disease prevention and the means required to promote productive livestock production. Some time will be spent on analyzing specific diseases, describing symptoms, and treatment. (Prerequisites: None)

Soils I**PLSC1100 3.00 credits**

This course has a lecture and a lab component. Areas of study will include the physical properties, chemical properties, biological properties, soil formation, classification, essential

Agronomy I**PLSC1300 2.00 credits**

This course covers agronomy principles for midwest crops. The course covers basic components of plant growth, seed quality, plant parts, plant growth and development, plant

nutrient and soil survey. There will be emphasis on soil and water conservation and practices that can be used to reduce soil erosion. Evaluations of soil samples will be conducted in the agribusiness lab and in the field. (Prerequisites: None)

Ag Orientation

SGAG1000 1.00 credits

Students will become oriented to the careers in agriculture related to the specific field they plan to enter. Completion of interviews of industry professionals will be required and students will need to write a career plan relating to the path they have been oriented. (Prerequisite: None)

classification, maturity systems and seeding rates. Corn and soybean production will be major crops of consideration. (Prerequisites: None)

Agribusiness Internship

AGRI2780 1 - 9 credits

This course is a cooperative educational program between the student, faculty, and the internship site/business. Students will apply competencies gained from previous coursework into an agribusiness industry workplace. Specific tasks to be completed by the student and will be identified in an individual training plan developed by the student, faculty and internship supervisor. Each training plan is specific to the individual student and business enterprise where the student is employed. (Prerequisite: Prior approval by the instructor and cooperating business supervisor along with a signed internship agreement)

Agribusiness Service and Management

Diploma • 72 Credits

DIP 3151



Degree Description

Here is a list of courses required to earn the Agribusiness Service and Management Diploma of Occupational Proficiency

Admission Dates: Fall and Spring Semester

Offered on the North Mankato Campus

The course requirements listed below are specific to the 2013-2014 school year. If you need to view the program from previous years view our [Catalog Archive](#).

This credential is part of the Agribusiness Service and Management department. [See the Agribusiness Service and Management department page for more details](#)

Required Technical Courses (14 Courses)

You must complete all of the following classes:

- [AGBS1100](#) Agricultural Selling Skills (3 Credits)
- [AGBS2015](#) Commercial Driver's License (1 Credit)
- [AGBS2150](#) Agribusiness Financial Management (4 Credits)
- [AGEC1100](#) Agricultural Economics (3 Credits)
- [AGEC2400](#) Marketing Principles (3 Credits)
- [AGEC2450](#) Commodity Marketing Strategies (2 Credits)
- [AGEC2500](#) Agricultural Transfer and Law (2 Credits)
- [AGRI1800](#) Employer/Employee Issues (2 Credits)
- [AGRI2700](#) Agricultural Technology Seminar (2 Credits)
- [ANSC1100](#) Livestock Production Principles (3 Credits)
- [PLSC1100](#) Soils I (3 Credits)
- [PLSC1300](#) Agronomy I (2 Credits)
- [SGAG1000](#) Ag Orientation (1 Credit)
- [MEAG1500](#) Facility Maintenance (3 Credits)
- [MEAG1700](#) Agricultural Industry Machinery Maintenance (3 Credits)

Agribusiness Emphasis Areas (18 Credits)

Select at least 18 credits from one of the following Agribusiness emphasis areas.

Animal Science Emphasis: ANSC1105,1200,1205,1305, ANSC2100, SWPR1050,1200,1300,1500,2000, PLSC1105, AGECE2600

Agronomy Emphasis: PLSC1105,1200,1205,1400,2100,2700, AGECE2600, AGBS2990,2995

Diversified Emphasis: Select 18 credits from any of these departments: AGECE, AGBS, AGRI, ANSC, MEAG, PLSC or SWPR.

Additional Required Liberal Arts and Sciences (1 Course)

Choose 1 course from MnTC Goal Areas 2 through 10.

Internship (11 Credits)

Complete 11 credits

- [AGRI2780](#) Agribusiness Internship (1 - 9 Credits)

PLEASE NOTE: All program plans are preliminary and curriculum may change without notice. Your [catalog of record](#) may have different requirements.

Required Liberal Arts and Sciences (1 Course)

Choose 1 course from MnTC Goal Area 1:

Agribusiness Service and Management - Diploma of Occupational Proficiency Course Descriptions**Agricultural Selling Skills****AGBS1100 3.00 credits**

This course covers the basic and advanced principles and techniques used in selling agricultural merchandise and services. Agricultural Sales has taken on increased importance in recent years. The introduction of new products and services has magnified the need for technically competent knowledgeable sales personnel. Role-playing and advanced, in-depth sales presentations will be done in class. Students will also be required to make an industry visit and write appropriate letters. (Prerequisites: None)

Commercial Driver's License**AGBS2015 1.00 credits**

This course covers the MN Department of Public Safety information relating to safe driving of commercial vehicles utilized in the agribusiness industry. Information concerning vehicle pre-trip inspection, air brakes, hazardous materials, endorsements, and safety information are covered. Testing information concerning the general knowledge test, air brakes test, hazardous materials test, and tanker test areas are also covered. (Prerequisites: None)

Agribusiness Financial Management**AGBS2150 4.00 credits**

This course covers all major aspects of agribusiness financial management through extensive problem solving, financial analysis and financial planning. Students will describe and calculate sweet 16 ratios, business cash flows, inventory controls, budgeting and borrowing considerations of various types of agribusinesses. Comparative analysis of various agribusiness companies will be used to demonstrate the application of the process in contemporary firms using 2005, 2006 or 2007 annual business reports. Application of computerized programs relevant to agribusiness financial analysis will be practiced. (Prerequisite: AGEC 1100)

Agricultural Economics**AGEC1100 3.00 credits**

This course covers agriculture's economic dimensions and impact, economic principles, calculation of economic returns, and evaluation of economic alternatives. Capital use, cost appraisal, risk considerations under a variety of economic conditions, farm credit sources and creditor relationships will also be discussed. (Prerequisites: None)

Marketing Principles**AGEC2400 3.00 credits**

This course covers futures market structure and function, futures commodity contract specifications, futures trading procedures, commodity futures trading strategies and introduction to commodity options. (Prerequisites: AGEC 1100)

Commodity Marketing Strategies**AGEC2450 2.00 credits**

This course covers strategies of commodity marketing of agricultural products. Students will apply marketing principles in various market situations. Students will work with forward contracts, basis contracts, futures contracts, and option strategies in agriculture commodities. Students will develop market plans for agribusiness marketing and input needs. (Prerequisites: AGEC 1100, AGEC 2400)

Agricultural Transfer and Law**AGEC2500 2.00 credits**

This course covers farm estate planning. Topics include federal and state estate tax laws and their impact, estate-planning options, will preparation, and the role of life

Employer/Employee Issues**AGRI1800 2.00 credits**

This course covers the principles of supervision and being supervised as they relate to the goals of agriculture businesses. Supervision problems with practical solutions will

insurance. Course includes sources of law, basic contract types and components, personal and real property features, land descriptions, legal fences, animal control legalities, water rights, liability responsibilities, and bankruptcy provisions. (Prerequisites: None)

Agricultural Technology Seminar

AGRI2700 2.00 credits

This seminar will provide students the opportunity to self-direct studies in agricultural technology in their areas of interest. Technologies to be considered could include but, are not limited to, plant protection, precision farming, application industries, livestock equipment, biotechnologies, financial resource management, sustainable agriculture, environmental impacts of agriculture, agricultural workforce, and agricultural production. Some organized events will be part of this course. The major emphasis will be self-directed learning. (Prerequisites: None)

Soils I

PLSC1100 3.00 credits

This course has a lecture and a lab component. Areas of study will include the physical properties, chemical properties, biological properties, soil formation, classification, essential nutrient and soil survey. There will be emphasis on soil and water conservation and practices that can be used to reduce soil erosion. Evaluations of soil samples will be conducted in the agribusiness lab and in the field. (Prerequisites: None)

Ag Orientation

SGAG1000 1.00 credits

Students will become oriented to the careers in agriculture related to the specific field they plan to enter. Completion of interviews of industry professionals will be required and students will need to write a career plan relating to the path they have been oriented. (Prerequisite: None)

Agricultural Industry Machinery Maintenance

MEAG1700 3.00 credits

This course covers theory and service competencies necessary to maintain small engines, gasoline-powered vehicles, and diesel-powered vehicles. Students will gain an awareness of equipment maintenance programs. The course includes field trips and instruction in maintaining equipment found in feed mills, fertilizer plants, and grain elevators. The course will also cover tillage, crop protection and planting equipment. Students will learn all component parts and proper adjustment of the particular units. Machine adjustment maybe accomplished on demonstration units, operator manual examples or on actual industry equipment. The course will

be emphasized. Personnel management techniques including determining personnel needs, finding and recruiting people, performance appraisals, training plans, promotions and terminations will be included. (Prerequisites: None)

Livestock Production Principles

ANSC1100 3.00 credits

This course covers animal production history and economic impact, breed development, animal anatomy and physiology, animal product features, gland and hormone functions, growth and lactation physiology, environmental animal production factors, and animal research. Course will focus on disease prevention and the means required to promote productive livestock production. Some time will be spent on analyzing specific diseases, describing symptoms, and treatment. (Prerequisites: None)

Agronomy I

PLSC1300 2.00 credits

This course covers agronomy principles for midwest crops. The course covers basic components of plant growth, seed quality, plant parts, plant growth and development, plant classification, maturity systems and seeding rates. Corn and soybean production will be major crops of consideration. (Prerequisites: None)

Facility Maintenance

MEAG1500 3.00 credits

This course covers farm and residential electrical wiring. Practical 120/240-volt circuit wiring, electrical safety, device selection, installation methods, grounding, bonding and service entrance panels are included. Agricultural confinement housing wiring and electric motors for frame application are explained. Another component in this course includes both electric arc, gas welding and a short section on the wire welding system. Students will spend time in the welding lab completing welds. (Prerequisites: None)

Agribusiness Internship

AGRI2780 1 - 9 credits

This course is a cooperative educational program between the student, faculty, and the internship site/business. Students will apply competencies gained from previous coursework into an agribusiness industry workplace. Specific tasks to be completed by the student and will be identified in an individual training plan developed by the student, faculty and internship supervisor. Each training plan is specific to the individual student and business enterprise where the student is employed. (Prerequisite: Prior approval by the instructor and cooperating business supervisor along with a signed internship agreement)

also cover chemical, fertilizer, pesticide handling considerations. (Prerequisites: None)

Agribusiness Department Overview

Department Faculty

Don Hermanson, Pete Neigebauer, Megan Roberts, Bruce White, Jim Zwaschka

Agribusiness Degrees

Agricultural Education Technology Partnership AS Degree

Agribusiness Office Specialist/Manager AAS Degree

Ag Chemical Applicator Technician Certificate

Agricultural Education Technology Partnership

A.S. Degree • 60 Credits

AS 3129



Degree Description

The need for agricultural educators has created a unique partnership between South Central College and the University of Minnesota. The key is that this is not a regular transfer program. The 2 + 2 Partnership program allows you to complete your first two years at SCC and apply every course toward a 4-year Ag Education degree from the University of Minnesota. If you follow this curriculum, you can be certain that all of your SCC credits will be applied to a Bachelor of Science degree in Agricultural, Food and Environmental Education at the University of Minnesota, with a specialization in Agricultural Science and Technology Education. Your advisors will work with you to make sure that all your courses meet degree requirements. Please note that courses are subject to change. Some courses are delivered through interactive television (ITV) and online distance technologies. By working with the University of Minnesota to develop this partnership program, South Central College has given you a great start toward a life impacting career in Agricultural Education

Admission Dates: Fall and Spring Semester

Offered on the North Mankato Campus

The course requirements listed below are specific to the 2013-2014 school year. If you need to view the program from previous years view our [Catalog Archive](#).

This credential is part of the Agribusiness department. [See the Agribusiness department page for more details](#)

Required Technical Courses (7 Courses)

Complete all of the following courses:

- [AGBS1100](#) Agricultural Selling Skills (3 Credits)
- [ANSC1100](#) Livestock Production Principles (3 Credits)
- [ANSC2100](#) Principles of Animal Nutrition (3 Credits)
- [MEAG1610](#) Ag Equipment Maintenance (3 Credits)
- [PLSC1100](#) Soils I (3 Credits)
- [PLSC1300](#) Agronomy I (2 Credits)
- [PLSC1400](#) Agronomy II (3 Credits)

Required Liberal Arts and Sciences

Completing the Minnesota Transfer Curriculum (MnTC) requirements alone satisfies the lower division general education requirement at all Minnesota two and four-year colleges and universities.

To complete the Minnesota Transfer Curriculum, students must:

- A) Complete all 10 goals
- B) Complete at least 40 college-level credits from courses listed within the 10 goal areas of the MnTC.
- C) Earn a cumulative GPA of 2.0 or higher in all MnTC courses.

Other Recommended Courses

The following courses are offered through the University of Minnesota Twin Cities through distance education. These courses are not specifically required to complete your degree at South Central College

- [AFEE1001](#) Introduction to Agricultural Education and Extension (1 Credit)
- [AFEE1002](#) Principles of Career Planning for Ag Professionals (1 Credit)
- [AFEE2096](#) Professional Practicum in Ag Education: Early Experience (1 Credit)

PLEASE NOTE: All program plans are preliminary and curriculum may change without notice. Your [catalog of record](#) may have different requirements.

Agricultural Education Technology Partnership - Associate in Science Degree Course Descriptions**Agricultural Selling Skills****AGBS1100 3.00 credits**

This course covers the basic and advanced principles and techniques used in selling agricultural merchandise and services. Agricultural Sales has taken on increased importance in recent years. The introduction of new products and services has magnified the need for technically competent knowledgeable sales personnel. Role-playing and advanced, in-depth sales presentations will be done in class. Students will also be required to make an industry visit and write appropriate letters. (Prerequisites: None)

Livestock Production Principles**ANSC1100 3.00 credits**

This course covers animal production history and economic impact, breed development, animal anatomy and physiology, animal product features, gland and hormone functions, growth and lactation physiology, environmental animal production factors, and animal research. Course will focus on disease prevention and the means required to promote productive livestock production. Some time will be spent on analyzing specific diseases, describing symptoms, and treatment. (Prerequisites: None)

Principles of Animal Nutrition**ANSC2100 3.00 credits**

This course provides basic information about the fundamentals of nutrition and the essential nutritional requirements of livestock. Units of instruction will include: nutrients and digestion, evaluating feedstuffs, characteristics of feedstuffs, processing techniques of various feeds, feed formulations, commercial feeds and feed additives. This course includes the discussion of the feeding practices of swine, cattle, poultry, and equine. (Prerequisites: None)

Ag Equipment Maintenance**MEAG1610 3.00 credits**

This course covers basic harvesting, tillage and planting equipment. The student will learn all component parts and proper adjustments of equipment. Machine adjustment may be accomplished on demonstration units, operator manual examples, actual equipment or field trips. In the machinery operation, set-up, and reconditioning portion, the student identifies preventative maintenance, set-up and reconditioning procedures, follows the set-up and operators manual, uses a check sheet and torque chart. (Prerequisites: None)

Soils I**PLSC1100 3.00 credits**

This course has a lecture and a lab component. Areas of study will include the physical properties, chemical properties, biological properties, soil formation, classification, essential nutrient and soil survey. There will be emphasis on soil and water conservation and practices that can be used to reduce soil erosion. Evaluations of soil samples will be conducted in the agribusiness lab and in the field. (Prerequisites: None)

Agronomy I**PLSC1300 2.00 credits**

This course covers agronomy principles for midwest crops. The course covers basic components of plant growth, seed quality, plant parts, plant growth and development, plant classification, maturity systems and seeding rates. Corn and soybean production will be major crops of consideration. (Prerequisites: None)

Agronomy II**PLSC1400 3.00 credits**

This course covers the characteristics and identification of noxious and common weeds, methods of control, evaluation of herbicide performance and tolerance. Consideration of characteristics, formulations and application methods of herbicides will be taken into account in determining the best

Introduction to Agricultural Education and Extension**AFEE1001 1.00 credits**

Historical development of the discipline of agricultural education; orientation to career opportunities; areas and expectations of specialization; issues in the field. This course must be completed through the University of Minnesota Twin Cities.

control. Course covers the need for and application of weed and insect control measures, including consideration and identification of characteristics, and formulation and proper application of herbicides and insecticides. Safety measures and proper handling of chemicals will be addressed.
(Prerequisites: PLSC1300)

Principles of Career Planning for Ag Professionals

AFEE1002 1.00 credits

Self assessment and analysis of interests, skills and abilities. Analyses of occupations, employment potential, employee expectations for work. Use informational interviews to examine career options and employment portfolio for career planning. This course must be completed through the University of Minnesota Twin Cities.

Professional Practicum in Ag Education: Early Experience

AFEE2096 1.00 credits

Observe schools, extension offices, and agricultural oriented businesses to learn about the work and workplaces in agricultural education. This course must be completed through the University of Minnesota Twin Cities.

Agribusiness Office Specialist/Manager

A.A.S. Degree • 72 Credits

AAS 3126

Degree Description

The Agribusiness Office Specialist/Manager program prepares students with the understanding, knowledge and skills to manage or staff a modern farm or agribusiness firm office. The program provides specific office skills necessary to function in an agribusiness office setting, as well as the agricultural background to work with producers and customers.

Degree Core Competencies

1. Demonstrate effective participation on an agribusiness team
2. Demonstrate verbal and written business communications
3. Demonstrate input technology
4. Demonstrate promotion and selling of agricultural services and products
5. Utilize information organization and retrieval systems
6. Develop and maintain records required for successful employment
7. Apply knowledge of computer applications/operating system software

Admission Dates: Fall and Spring Semester

Offered on the North Mankato Campus

The course requirements listed below are specific to the 2013-2014 school year. If you need to view the program from previous years view our [Catalog Archive](#).

This credential is part of the Agribusiness department. [See the Agribusiness department page for more details](#)

Required Technical Courses (15 Courses)

Complete the following courses:

- [AGBS1100](#) Agricultural Selling Skills (3 Credits)
- [AGBS2150](#) Agribusiness Financial Management (4 Credits)
- [AGEC1100](#) Agricultural Economics (3 Credits)
- [AGRI1800](#) Employer/Employee Issues (2 Credits)
- [AGRI2700](#) Agricultural Technology Seminar (2 Credits)
- [AGRI2780](#) Agribusiness Internship (1 - 9 Credits)
- [ANSC1100](#) Livestock Production Principles (3 Credits)
- [OTEC1800](#) Keyboarding I (3 Credits)
- [OTEC1820](#) Business English (3 Credits)
- [OTEC1840](#) Business Presentations (3 Credits)
- [OTEC1875](#) Word Processing Concepts & Applications: Core (3 Credits)
- [OTEC2812](#) Office Procedures (3 Credits)
- [OTEC2835](#) Office Financial Applications II (3 Credits)
- [OTEC2870](#) Information Resource Management (3 Credits)
- [SGAG1000](#) Ag Orientation (1 Credit)

Required Liberal Arts and Sciences (3 Courses)

To complete an AAS Degree, students must complete 18 MnTC credits from 3 of the 10 MNTC Goal Areas.

The following courses are required:

- [ENGL100](#) Composition (4 Credits)
- [COMM140](#) Interpersonal Communication (3 Credits)

Technical Electives (9 Credits)

Choose 9 credits from the following courses:

- [AGBS2990](#) International Field Studies Seminar (3 Credits)
- [AGEC2400](#) Marketing Principles (3 Credits)
- [AGEC2450](#) Commodity Marketing Strategies (2 Credits)
- [AGEC2500](#) Agricultural Transfer and Law (2 Credits)
- [ANSC2100](#) Principles of Animal Nutrition (3 Credits)
- [OTEC2815](#) Employment Portfolio (3 Credits)
- [OTEC2820](#) Business Communications (3 Credits)
- [OTEC2830](#) Microsoft Publisher (3 Credits)
- [PLSC1100](#) Soils I (3 Credits)
- [PLSC1205](#) Precision Agriculture (3 Credits)
- [PLSC1300](#) Agronomy I (2 Credits)

PLEASE NOTE: All program plans are preliminary and curriculum may change without notice. Your [catalog of record](#) may have different requirements.

Elective Liberal Arts and Sciences

Select 8 additional MnTC credits in goals 1-10. Courses must be selected in consultation with advisor/faculty. Recommended courses are: COMM 110, BIOL 101, PSYC 100, PHIL 100.

ECON110 Principles of Macroeconomics (3 Credits)

Or

ECON120 Principles of Microeconomics (3 Credits)

Agribusiness Office Specialist/Manager - Associate of Applied Science Degree Course Descriptions**Agricultural Selling Skills****AGBS1100 3.00 credits**

This course covers the basic and advanced principles and techniques used in selling agricultural merchandise and services. Agricultural Sales has taken on increased importance in recent years. The introduction of new products and services has magnified the need for technically competent knowledgeable sales personnel. Role-playing and advanced, in-depth sales presentations will be done in class. Students will also be required to make an industry visit and write appropriate letters. (Prerequisites: None)

Agricultural Economics**AGEC1100 3.00 credits**

This course covers agriculture's economic dimensions and impact, economic principles, calculation of economic returns, and evaluation of economic alternatives. Capital use, cost appraisal, risk considerations under a variety of economic conditions, farm credit sources and creditor relationships will also be discussed. (Prerequisites: None)

Agricultural Technology Seminar**AGRI2700 2.00 credits**

This seminar will provide students the opportunity to self-direct studies in agricultural technology in their areas of interest. Technologies to be considered could include but, are not limited to, plant protection, precision farming, application industries, livestock equipment, biotechnologies, financial resource management, sustainable agriculture, environmental impacts of agriculture, agricultural workforce, and agricultural production. Some organized events will be part of this course. The major emphasis will be self-directed learning. (Prerequisites: None)

Livestock Production Principles**ANSC1100 3.00 credits**

This course covers animal production history and economic

Agribusiness Financial Management**AGBS2150 4.00 credits**

This course covers all major aspects of agribusiness financial management through extensive problem solving, financial analysis and financial planning. Students will describe and calculate sweet 16 ratios, business cash flows, inventory controls, budgeting and borrowing considerations of various types of agribusinesses. Comparative analysis of various agribusiness companies will be used to demonstrate the application of the process in contemporary firms using 2005, 2006 or 2007 annual business reports. Application of computerized programs relevant to agribusiness financial analysis will be practiced. (Prerequisite: AGECE 1100)

Employer/Employee Issues**AGRI1800 2.00 credits**

This course covers the principles of supervision and being supervised as they relate to the goals of agriculture businesses. Supervision problems with practical solutions will be emphasized. Personnel management techniques including determining personnel needs, finding and recruiting people, performance appraisals, training plans, promotions and terminations will be included. (Prerequisites: None)

Agribusiness Internship**AGRI2780 1 - 9 credits**

This course is a cooperative educational program between the student, faculty, and the internship site/business. Students will apply competencies gained from previous coursework into an agribusiness industry workplace. Specific tasks to be completed by the student and will be identified in an individual training plan developed by the student, faculty and internship supervisor. Each training plan is specific to the individual student and business enterprise where the student is employed. (Prerequisite: Prior approval by the instructor and cooperating business supervisor along with a signed internship agreement)

Keyboarding I**OTEC1800 3.00 credits**

This course reviews basic keyboarding techniques using the

impact, breed development, animal anatomy and physiology, animal product features, gland and hormone functions, growth and lactation physiology, environmental animal production factors, and animal research. Course will focus on disease prevention and the means required to promote productive livestock production. Some time will be spent on analyzing specific diseases, describing symptoms, and treatment. (Prerequisites: None)

Business English

OTEC1820 3.00 credits

This course is designed to provide students with comprehensive, up-to-date instruction in the correct use of English grammar, sentence structure, punctuation, capitalization, abbreviations, and number usage in written business communications. Students will develop proficiency in proofreading, identifying common errors, and using reference materials to correct sentences, paragraphs, and business documents. (Prerequisite: None)

Word Processing Concepts & Applications: Core

OTEC1875 3.00 credits

This course is designed to build an understanding of word processing using Microsoft Word software. It begins with the introduction of concepts such as file management, entering text, text editing, terminology, on-line help, spell checking, and printing. It continues with all the basic skills you will need to use the application at a core level of proficiency. (Prerequisites: None)

Office Financial Applications II

OTEC2835 3.00 credits

This course utilizes and builds upon the basic bookkeeping concepts introduced in Office Financial Applications I. Students will journalize/post transactions, complete a worksheet, perform end-of-month activities including adjusting and closing journal entries, financial statements, and reconciling a bank statement, and calculate and account for employee earnings. Students will learn how to complete tasks both manually and electronically using an automated accounting program. (Prerequisites: Basic Windows navigation skills; OTEC 1825 Office Financial Applications I)

Ag Orientation

SGAG1000 1.00 credits

Students will become oriented to the careers in agriculture related to the specific field they plan to enter. Completion of interviews of industry professionals will be required and students will need to write a career plan relating to the path they have been oriented. (Prerequisite: None)

touch method. Emphasis is on building speed and accuracy on a computer keyboard. Basic formatting concepts for producing documents such as letters, envelopes, memos, tables, and reports will be introduced. Proofreading skills will be emphasized. (Minimum keyboarding speed of 35 words per minute)

Business Presentations

OTEC1840 3.00 credits

This course is designed to teach students how to organize, analyze and present information in a professional setting. Students will learn the skills needed to build eye-catching presentations that communicate key information to audiences in business, academics, and organization settings. The learner will compose individual and composite presentations using text, graphs, sounds, and images. (Prerequisites: Basic Windows navigation skills required, applications software knowledge very helpful, speech course also helpful)

Office Procedures

OTEC2812 3.00 credits

Topics covered in this course may include aspects of the changing office; managing work, time and resources; using office technology and equipment; processing mail; providing customer service; making travel arrangements; planning meetings and conferences; using telecommunications; professional development and leadership, personal finance and investment strategies; and using Outlook for email, scheduling, contacts, tasks, and notes. (Prerequisite: OTEC 1875)

Information Resource Management

OTEC2870 3.00 credits

This course covers rules and procedures for coding, indexing, filing, and retrieving documents in alphabetical, numeric, geographic, and subject systems. Applications include simulated correspondence filing and card filing using both manual and electronic methods. Students will learn how to use database management software (Microsoft Access) to manage information. Records management topics emphasize records control and retention, final disposition of records, and records management issues and trends. (Prerequisites: None)

International Field Studies Seminar

AGBS2990 3.00 credits

This course covers an introduction to agricultural, food, and environmental systems in other countries of the world. The field study seminar consists of two major components: a series of pre-departure seminars and a two-week period within a host country. The field study will introduce students to the history, geography, cultures and socio-economic situations of the

country they will visit. Students will also explore the agricultural, food and environmental system of another country.

Marketing Principles

AGEC2400 3.00 credits

This course covers futures market structure and function, futures commodity contract specifications, futures trading procedures, commodity futures trading strategies and introduction to commodity options. (Prerequisites: AGEC 1100)

Agricultural Transfer and Law

AGEC2500 2.00 credits

This course covers farm estate planning. Topics include federal and state estate tax laws and their impact, estate-planning options, will preparation, and the role of life insurance. Course includes sources of law, basic contract types and components, personal and real property features, land descriptions, legal fences, animal control legalities, water rights, liability responsibilities, and bankruptcy provisions. (Prerequisites: None)

Employment Portfolio

OTEC2815 3.00 credits

This course is a capstone course for the Office Administration and Technology Program and will focus on developing knowledge that will serve as a foundation for the student's employment search process by assisting them in the development of successful marketing strategies for employment by providing the information necessary about the skills, knowledge, attitudes, and interpersonal skills required to secure positions of choice and be contributing and productive employees. As a capstone course, students are given online assessments on the use of software, keyboarding skills, and business English to ensure competence prior to graduation. Students will develop two distinctive portfolios to assist in their career search. Students will create a notebook portfolio consisting of their employment marketing strategy documents including different types of resumes, letters of application, interview strategies, interview follow up, as well as samples of their coursework presented professionally in a three-ring binder. The second portfolio will be designed as a digital portfolio. Students will develop through their creativity and use of technology a digital portfolio that will showcase their level of mastery in Office Administration and Technology. Students will use digital cameras, scanners, audio files, label software, presentation software, word processing software, page layout software, and the Internet among other areas of technology. (Prerequisites: OTEC 1825, 1840, 2810, 2820, 2870, 2875)

Microsoft Publisher

OTEC2830 3.00 credits

Commodity Marketing Strategies

AGEC2450 2.00 credits

This course covers strategies of commodity marketing of agricultural products. Students will apply marketing principles in various market situations. Students will work with forward contracts, basis contracts, futures contracts, and option strategies in agriculture commodities. Students will develop market plans for agribusiness marketing and input needs. (Prerequisites: AGEC 1100, AGEC 2400)

Principles of Animal Nutrition

ANSC2100 3.00 credits

This course provides basic information about the fundamentals of nutrition and the essential nutritional requirements of livestock. Units of instruction will include: nutrients and digestion, evaluating feedstuffs, characteristics of feedstuffs, processing techniques of various feeds, feed formulations, commercial feeds and feed additives. This course includes the discussion of the feeding practices of swine, cattle, poultry, and equine. (Prerequisites: None)

Business Communications

OTEC2820 3.00 credits

This course covers the principles of effective writing and requires students to plan, compose, and format a variety of business communications. Emphasis is on proofreading, editing, and revising communications not just to make them correct but also to make them better. Types of communications may include letters, memos, e-mail, announcements, instructions, form letters, and news releases. Specific letter or memo types may include request and response, claim and adjustment, persuasive, and goodwill communications. Students will learn about letter and envelope formats, international communication differences, and organizational approaches for writing correspondence. Students will learn about words to avoid, transitions, parallel structure, and the you attitude. Students will also be introduced to library and Internet research techniques and will analyze real-world documents. (Prerequisite: OTEC1820)

Soils I

PLSC1100 3.00 credits

Students will integrate word processing, graphics, and manipulate text graphics to produce professional quality publications. The topics covered are most useful to the student who has prior word processing experience and who needs to understand page compositions and typography for the purpose of preparing documents with flair. The course introduces the concepts, terminology, techniques, and applications of desktop publishing. Design concepts are limited to those useful in business applications and are not intended to present a "graphics/commercial art" focus. The emphasis will be on developing proficiency, preparing applications-based projects, and mastery of the software. (Prerequisites: None)

Precision Agriculture

PLSC1205 3.00 credits

The course objectives include basic understanding of precision agriculture, high-tech equipment, and strategies. Students will gain an understanding of the hardware, software and management strategies of precision agriculture. Areas of study will include GIS, GPS, remote sensing, differential correction, yield monitoring, and grid mapping. Farmworks software will be incorporated into the course.

Composition

ENGL100 4.00 credits

Composition is concerned with developing, through theory and practice, the ability to communicate in written form for personal and professional reasons. Students will develop writing skills, analytical skills, and critical thinking skills. Students will complete readings, papers, grammar exercises, and in-class activities. Students will learn methods of writing informatively and persuasively. (Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher AND a score of 85.5 or higher on the Sentence Skills portion of the Accuplacer test or completion of ENGL 0080 and ENGL 0090 with a grade of C or higher)(MNTC 1: Communication) This course has an online option.

Principles of Macroeconomics

ECON110 3.00 credits

A study of aggregate economic behavior and current economic issues, policies and problems. Macroeconomics measures such as inflation, employment, and the growth of output are examined along with the tools a government can use to foster a stable economy. (Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher) (MNTC 5, 8: History/Social & Behavioral Science, Global Perspective)

This course has a lecture and a lab component. Areas of study will include the physical properties, chemical properties, biological properties, soil formation, classification, essential nutrient and soil survey. There will be emphasis on soil and water conservation and practices that can be used to reduce soil erosion. Evaluations of soil samples will be conducted in the agribusiness lab and in the field. (Prerequisites: None)

Agronomy I

PLSC1300 2.00 credits

This course covers agronomy principles for midwest crops. The course covers basic components of plant growth, seed quality, plant parts, plant growth and development, plant classification, maturity systems and seeding rates. Corn and soybean production will be major crops of consideration. (Prerequisites: None)

Interpersonal Communication

COMM140 3.00 credits

In this class, participants will examine key components of interpersonal communication theory, identify the interpersonal communication skills necessary for healthy relationships, assess their own interpersonal communication effectiveness, and practice and hone interpersonal communication skills necessary for healthy home and work relationships. This course will also address relevant issues of social interaction, including how human diversity/culture (age, race, gender, etc.) affects our interpersonal communication. (Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher)(MNTC 1: Communication)

Principles of Microeconomics

ECON120 3.00 credits

This course examines theories of how various types of product, service, and resource markets operate and the resulting implications for public policy. Topics include decision-making by consumers, business firms, and government as well as price determination, resource allocation, and income determination via markets. (Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher) (MNTC 5, 8: History/Social & Behavioral Sciences, Global Perspective).

Ag Chemical Applicator Technician

Certificate • 30 Credits

CERT3117



Degree Description

The Ag Chemical Applicator Technician Program will provide hands-on training in all areas of agriculture, including crops, soil, fertilizers, equipment operation and maintenance and agribusiness sales and management. Students will gain proficiency with ultra-modern, high-tech chemical application equipment. Extensive use will be made of community-based resources to help provide private employment experience for students.

Certificate Core Competencies

1. Demonstrate effective participation on an agribusiness team
2. Perform maintenance and operate agribusiness industry equipment
3. Perform agribusiness industry computer functions
4. Promote and sell agricultural services and products
5. Develop and maintain agribusiness records systems
6. Demonstrate application of agricultural inputs

Admission Dates: Fall and Spring Semester

Offered on the North Mankato Campus

The course requirements listed below are specific to the 2013-2014 school year. If you need to view the program from previous years view our [Catalog Archive](#).

This credential is part of the Agribusiness department. [See the Agribusiness department page for more details](#)

Required Technical Courses (12 Courses)

Complete the following courses:

- [AGBS1100](#) Agricultural Selling Skills (3 Credits)
- [AGBS2015](#) Commercial Driver's License (1 Credit)
- [AGRI1800](#) Employer/Employee Issues (2 Credits)
- [AGRI2700](#) Agricultural Technology Seminar (2 Credits)
- [AGRI2780](#) Agribusiness Internship (1 - 9 Credits)
- [MEAG1700](#) Agricultural Industry Machinery Maintenance (3 Credits)
- [PLSC1100](#) Soils I (3 Credits)
- [PLSC1200](#) Soils II (3 Credits)
- [PLSC1205](#) Precision Agriculture (3 Credits)
- [PLSC1300](#) Agronomy I (2 Credits)
- [PLSC1400](#) Agronomy II (3 Credits)
- [SGAG1000](#) Ag Orientation (1 Credit)

Elective Courses (Suggested)

These courses are not required but are suggested as courses which may be beneficial to you in this career field. You will graduate from this program even if you do not complete these courses.

- [AGBS2990](#) International Field Studies Seminar (3 Credits)
- [AGBS2995](#) Individualized Study/Special Problems (1 - 6 Credits)
- [AGEC1100](#) Agricultural Economics (3 Credits)
- [PLSC1105](#) Forages and Pasture Management (2 Credits)
- [PLSC2100](#) Agronomy Lab (2 Credits)
- [PLSC2700](#) Advanced Agronomy (2 Credits)

PLEASE NOTE: All program plans are preliminary and curriculum may change without notice. Your [catalog of record](#) may have different requirements.

Ag Chemical Applicator Technician - Certificate of Training Course Descriptions**Agricultural Selling Skills****AGBS1100 3.00 credits**

This course covers the basic and advanced principles and techniques used in selling agricultural merchandise and services. Agricultural Sales has taken on increased importance in recent years. The introduction of new products and services has magnified the need for technically competent knowledgeable sales personnel. Role-playing and advanced, in-depth sales presentations will be done in class. Students will also be required to make an industry visit and write appropriate letters. (Prerequisites: None)

Commercial Driver's License**AGBS2015 1.00 credits**

This course covers the MN Department of Public Safety information relating to safe driving of commercial vehicles utilized in the agribusiness industry. Information concerning vehicle pre-trip inspection, air brakes, hazardous materials, endorsements, and safety information are covered. Testing information concerning the general knowledge test, air brakes test, hazardous materials test, and tanker test areas are also covered. (Prerequisites: None)

Employer/Employee Issues**AGRI1800 2.00 credits**

This course covers the principles of supervision and being supervised as they relate to the goals of agriculture businesses. Supervision problems with practical solutions will be emphasized. Personnel management techniques including determining personnel needs, finding and recruiting people, performance appraisals, training plans, promotions and terminations will be included. (Prerequisites: None)

Agricultural Technology Seminar**AGRI2700 2.00 credits**

This seminar will provide students the opportunity to self-direct studies in agricultural technology in their areas of interest. Technologies to be considered could include but, are not limited to, plant protection, precision farming, application industries, livestock equipment, biotechnologies, financial resource management, sustainable agriculture, environmental impacts of agriculture, agricultural workforce, and agricultural production. Some organized events will be part of this course. The major emphasis will be self-directed learning. (Prerequisites: None)

Agribusiness Internship**AGRI2780 1 - 9 credits**

This course is a cooperative educational program between the student, faculty, and the internship site/business. Students will apply competencies gained from previous coursework into an agribusiness industry workplace. Specific tasks to be completed by the student and will be identified in an individual training plan developed by the student, faculty and internship supervisor. Each training plan is specific to the individual student and business enterprise where the student is employed. (Prerequisite: Prior approval by the instructor and cooperating business supervisor along with a signed internship agreement)

Agricultural Industry Machinery Maintenance**MEAG1700 3.00 credits**

This course covers theory and service competencies necessary to maintain small engines, gasoline-powered vehicles, and diesel-powered vehicles. Students will gain an awareness of equipment maintenance programs. The course includes field trips and instruction in maintaining equipment found in feed mills, fertilizer plants, and grain elevators. The course will also cover tillage, crop protection and planting equipment. Students will learn all component parts and proper adjustment of the particular units. Machine adjustment maybe accomplished on demonstration units, operator manual examples or on actual industry equipment. The course will also cover chemical, fertilizer, pesticide handling considerations. (Prerequisites: None)

Soils I**Soils II**

PLSC1100 3.00 credits

This course has a lecture and a lab component. Areas of study will include the physical properties, chemical properties, biological properties, soil formation, classification, essential nutrient and soil survey. There will be emphasis on soil and water conservation and practices that can be used to reduce soil erosion. Evaluations of soil samples will be conducted in the agribusiness lab and in the field. (Prerequisites: None)

Precision Agriculture**PLSC1205 3.00 credits**

The course objectives include basic understanding of precision agriculture, high-tech equipment, and strategies. Students will gain an understanding of the hardware, software and management strategies of precision agriculture. Areas of study will include GIS, GPS, remote sensing, differential correction, yield monitoring, and grid mapping. Farmworks software will be incorporated into the course.

Agronomy II**PLSC1400 3.00 credits**

This course covers the characteristics and identification of noxious and common weeds, methods of control, evaluation of herbicide performance and tolerance. Consideration of characteristics, formulations and application methods of herbicides will be taken into account in determining the best control. Course covers the need for and application of weed and insect control measures, including consideration and identification of characteristics, and formulation and proper application of herbicides and insecticides. Safety measures and proper handling of chemicals will be addressed. (Prerequisites: PLSC1300)

International Field Studies Seminar**AGBS2990 3.00 credits**

This course covers an introduction to agricultural, food, and environmental systems in other countries of the world. The field study seminar consists of two major components: a series of pre-departure seminars and a two-week period within a host country. The field study will introduce students to the history, geography, cultures and socio-economic situations of the country they will visit. Students will also explore the agricultural, food and environmental system of another country.

Agricultural Economics**AGEC1100 3.00 credits**

This course covers agriculture's economic dimensions and impact, economic principles, calculation of economic returns,

PLSC1200 3.00 credits

This course covers both the technical and practical information that should be of assistance to a student who would farm or go into the fertilizer business. The course deals with the basic soil-plant relationships and the effects of fertility. Detailed information on fertilizer materials and the information of test results will also be covered. Students will put into practice many of the cropping practices that are required by someone pursuing a career in the fertilizer and/or chemical field. Students will determine the proper rates and application methods. (Prerequisites: PLSC1100)

Agronomy I**PLSC1300 2.00 credits**

This course covers agronomy principles for midwest crops. The course covers basic components of plant growth, seed quality, plant parts, plant growth and development, plant classification, maturity systems and seeding rates. Corn and soybean production will be major crops of consideration. (Prerequisites: None)

Ag Orientation**SGAG1000 1.00 credits**

Students will become oriented to the careers in agriculture related to the specific field they plan to enter. Completion of interviews of industry professionals will be required and students will need to write a career plan relating to the path they have been oriented. (Prerequisite: None)

Individualized Study/Special Problems**AGBS2995 1 - 6 credits**

This course allows the student to pursue special projects or areas of interest. The number of credits must be agreed upon by advisor/advisee prior to registration. (Prerequisites: Successful completion of two semesters of training or by special arrangement)

Forages and Pasture Management**PLSC1105 2.00 credits**

This course includes the study of the management and production of small grains and forages. Subject areas will

and evaluation of economic alternatives. Capital use, cost appraisal, risk considerations under a variety of economic conditions, farm credit sources and creditor relationships will also be discussed. (Prerequisites: None)

include varietal selection, planting, calculating yields, production costs, growth management, harvesting techniques and marketing techniques. The forage management will focus on alfalfa production, emphasis on establishment, winter survival, fertilization, cutting management and variety selection. (Prerequisites: None)

Agronomy Lab

PLSC2100 2.00 credits

This course covers the determination of grain quality, proper storage and handling. Laboratory exercises will be run on grain samples and student's home grains. Grain drying systems will be explained with advantages and disadvantages of each system identified. This course covers commercial grain grading practices including seed identification and grain grading. The course will also cover state grain marketing procedures and an introduction to USDA standards for corn, soybeans, wheat, oats, barley and sunflowers. (Prerequisite: None)

Advanced Agronomy

PLSC2700 2.00 credits

Management practices in corn and soybean production including variety selection, field crop insects and plant diseases, identification, damage symptoms, economic thresholds, recommended control options and field scouting. Planting and fertilizing considerations in reduced tillage systems. (Prerequisites: PLSC1300, 1400)

Architectural Drafting and Design Department Overview

Architectural Drafting and Design prepares students for application of basic building engineering principles and technical skills in support of architects, engineers and planners engaged in designing and developing commercial buildings.

Instruction includes commercial design, 3D modeling and drafting in the following areas: architectural, mechanical, electrical, plumbing and structural.

Graduates will be prepped for nationally recognized "Green" certification(s): Building Analyst, Envelop Professional and LEED Green Associate.

A laptop is required for this program. Please consult faculty before purchase. Due to the highly responsible nature of the work performed, no grade lower than C in any required course with a BDET prefix will be counted towards graduation.

Core Competencies

1. Create high quality construction documents.
2. Solve design/detail problems using research.
3. Apply energy-related systems and assemblies to design projects.
4. Apply building industry standards.
5. Demonstrate proficiency in 2D and 3D drawing software.

Department Faculty

Ryan Langemeier

Architectural Drafting and Design Degrees

Architectural Drafting and Design AAS Degree
Architectural Drafting and Design Diploma

Architectural Drafting and Design

A.A.S. Degree • 60 Credits

AAS 3496

Degree Description

This program prepares students for application of basic technical skills in support of Architects engaged in designing/developing commercial buildings.

Admission Dates: Fall and Spring Semester

Offered on the North Mankato Campus

The course requirements listed below are specific to the 2013-2014 school year. If you need to view the program from previous years view our [Catalog Archive](#).

This credential is part of the Architectural Drafting and Design department. [See the Architectural Drafting and Design department page for more details](#)

Required Technical Courses (16 Courses)

NOTE: Due to the highly responsible nature of the work performed, no grade lower than a C in any required course with a BDET prefix will be counted towards graduation.

You must complete all of the following classes:

- [BDET1100](#) Introduction to Building Design and Energy Technology (1 Credit)
- [BDET1110](#) Studio I (4 Credits)
- [BDET1120](#) Estimating Concepts (2 Credits)
- [BDET1130](#) Materials and Methods (3 Credits)
- [BDET1150](#) AutoCAD (2 Credits)
- [BDET1210](#) Studio II (4 Credits)
- [BDET1220](#) Building Analyst (3 Credits)
- [BDET1240](#) Construction Documents (2 Credits)
- [BDET1250](#) Revit (2 Credits)
- [BDET1260](#) Special Topics in Environmental Design (1 Credit)
- [BDET2110](#) Studio III (4 Credits)
- [BDET2120](#) Statics and Strengths of Materials (3 Credits)
- [BDET2130](#) MEP Systems (Mechanical, Electrical and Plumbing) (3 Credits)
- [BDET2140](#) Building Codes (2 Credits)
- [BDET2210](#) Studio IV (6 Credits)
- [BDET1320](#) Internship (3 Credits)

Liberal Arts and Sciences - Electives

Select an additional 4 credits from MnTC goals 2,3,5,6,7,8,9 or 10.

Required Liberal Arts & Sciences (3 Courses)

To complete an AAS degree, students must complete 15 MnTC credits from 3 of the 10 MnTC goal areas. The following courses are required:

- [ENGL100](#) Composition (4 Credits)
- [MATH120](#) College Algebra (4 Credits)
- [MATH125](#) Trigonometry (3 Credits)

PLEASE NOTE: All program plans are preliminary and curriculum may change without notice. Your [catalog of record](#) may have different requirements.

Architectural Drafting and Design - Associate of Applied Science Degree Course Descriptions**Introduction to Building Design and Energy Technology****BDET1100 1.00 credits**

Overview of academic preparation and career opportunities in the field of: Architectural, Mechanical-Electrical-Plumbing (MEP), structural, building design and energy technology. (Prerequisite: None)

Studio I**BDET1110 4.00 credits**

This is an introductory studio course for students interested in Building Design and Energy Technology. Studio I includes a combination of sketching and electronic drawing software applications. This course will cover, sketching techniques, dimensions, notations, organization, and measuring. This class advances into drawing a commercial wood-frame construction project while incorporating electronic drawing software into the design process. (Prerequisite: None)

Estimating Concepts**BDET1120 2.00 credits**

This course covers principles of quantity takeoffs, identification of symbols, and computation of materials from a set of commercial construction working drawings utilizing the CSI divisions. (Prerequisite: None)

Materials and Methods**BDET1130 3.00 credits**

The basic construction methods and materials used in building technologies are examined. Common building materials such as wood, masonry, concrete, and metals will be analyzed as it relates to commercial applications. The classification of materials and project delivery systems; application of principles of building science to construction sites; relationship between technology and sustainability will be addressed. (Prerequisite: None)

AutoCAD**BDET1150 2.00 credits**

This is an introductory 2D computer-aided drafting course that takes a practical hands-on approach to the use, operations, and methods of AutoCAD. It includes the following: drafting, line types, line widths, accuracy, and dimensioning, editing, drawing setup, scaling, and plotting. (Prerequisite: None)

Studio II**BDET1210 4.00 credits**

This course covers the materials, methods, and construction principles of a commercial project. Electronic drawing software and hand drawing will be utilized. Independent work, critical thinking, problem solving, and application are emphasized. A set of working drawings will be drawn incorporating construction documents. (Prerequisites: BDET 1110, 1150)

Building Analyst**BDET1220 3.00 credits**

This course will provide an understanding of technical standards for home performance and weatherization retrofit. The course will provide an introduction to building performance as it relates to the residential sector. The student will be introduced to the building shell components, combustion zone and blower door testing. In addition, the student will be aware of the auditing process and customer relations. This course will follow the Building Performance

Construction Documents**BDET1240 2.00 credits**

This course provides an overview of construction documents including working drawings, specifications, and other contract documents. Emphasis on the development of project manual, legal and ethical aspects, and divisions of work. (Prerequisites: BDET 1110)

Institute (BPI) standards and content for building analyst and envelop professional. (Prerequisites: BDET 1110, 1130)

Revit

BDET1250 2.00 credits

This is an introductory 3D computer-aided course that takes a practical hands-on approach to the use, operations, and methods of Revit. It includes the following: detailing and drafting views, construction documentation, and the basics of building modeling. (Prerequisites: BDET 1110, 1150)

Studio III

BDET2110 4.00 credits

Building Information Modeling (BIM) will be incorporated. Construction methods & materials, LEED principles, design process, preparation of details, research, and incorporation of applicable codes and ordinances shall be major factors in developing this coordinated set of working drawings. The International Building Code (IBC) and the American Disability Act (ADA) will be determining factors in this commercial project. This class will continue to further the students knowledge of construction, materials, and applications of various architectural and engineering design principles. (Prerequisites: BDET 1210)

MEP Systems (Mechanical, Electrical and Plumbing)

BDET2130 3.00 credits

This course provides students with a fundamental knowledge of Mechanical, Electrical, and Plumbing systems. HVAC, lighting, plumbing, and communication systems will be analyzed in reference to their impact on commercial design, space planning, construction cost, and sustainable design. (Prerequisites BDET 1210)

Studio IV

BDET2210 6.00 credits

This capstone course will advance the students knowledge of commercial building design. Building Information Modeling (BIM) will be incorporated. CAD skills, construction methods & materials, preparation of details, research, and incorporation of applicable codes and ordinances shall be major factors in developing this coordinated set of working drawings. The International Building Code (IBC) and the American Disability Act (ADA) will be determining factors in this commercial project. This class will continue to further the students knowledge of construction, materials, and applications of architectural and engineering disciplines as they pertain to the construction of a commercial project. (Prerequisites: BDET 2110)

Special Topics in Environmental Design

BDET1260 1.00 credits

This course will provide an understanding of addressing surrounding environmental parameters. These parameters may result when devising plans, programs, policies, buildings or products. The course will also provide an introduction to the human-designed environment. This introduction will relate to interdisciplinary areas such as architecture, urban planning, and product design and sustainability issues. (Prerequisite: BDET 1110)

Statics and Strengths of Materials

BDET2120 3.00 credits

This course covers an introduction to structural theory and calculation. It includes analysis of forces, vectors, calculations of forces, moments and internal stresses and strains in structural materials. It also includes tracing of load paths through the structure. (Prerequisites: Math 125, BDET 1210)

Building Codes

BDET2140 2.00 credits

The course will involve the current International Building Code (IBC), Chapter 1341 Minnesota Accessibility Code, International Residential Code, and Minnesota Energy Code. This class will address the understanding of the building codes as they relate to the residential and commercial sector. (Prerequisite: BDET 1210)

Internship

BDET1320 3.00 credits

This course covers applying classroom knowledge to the workplace. Students are responsible for finding an appropriate program related job. Course requirements will be adapted to the type of work performed by the student. (Prerequisites: BDET 2210, Advisor approval)

Composition

ENGL100 4.00 credits

Composition is concerned with developing, through theory and practice, the ability to communicate in written form for personal and professional reasons. Students will develop writing skills, analytical skills, and critical thinking skills. Students will complete readings, papers, grammar exercises, and in-class activities. Students will learn methods of writing informatively and persuasively. (Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher AND a score of 85.5 or higher on the Sentence Skills portion of the Accuplacer test or completion of ENGL 0080 and ENGL 0090 with a grade of C or higher)(MNTC 1: Communication) This course has an online option.

College Algebra

MATH120 4.00 credits

This course is mainly concerned with functions, most of which are algebraic. It begins with a general treatment of equations and inequalities and then proceeds to cover linear functions, quadratic functions, other polynomial and rational functions, piecewise functions, equations involving radicals and absolute values, logarithms and exponentials, systems of equations and inequalities, permutations and combinations. (Prerequisites: Two years of high school algebra or completion of MATH 0085 with a grade of C or higher, or a score of 75.5 on the Elementary Algebra portion of the Accuplacer test AND a score of 49.5 or higher on the College Level Math portion of the Accuplacer test) (MNTC 4: Mathematical/Logical Reasoning)

Trigonometry

MATH125 3.00 credits

A study of the six trigonometric functions, their inverses and their applications forms the heart of this course. First, the two common methods of angle measure are derived along with the related notions of length of arc and area of a sector. Then the trigonometric functions are defined in terms of the unit circle and their properties such as domain, range, period and amplitude are explored, along with their associated graphs. This leads to a study of identities and conditional equations. Triangle trigonometry and real-world applications follow, with an investigation of associated themes such as vectors, exponentials and logarithms. (Prerequisites: MATH 120 with a grade of C or better) (MNTC 4: Mathematical/Logical Reasoning)

Architectural Drafting and Design

Diploma • 32 Credits

DIP 3498

Degree Description

Building Design and Energy Technology prepares students to apply basic building engineering principles and technical skills in support of architects, engineers and planners engaged in designing and developing commercial buildings, and energy related systems. Instruction includes building design and modeling, engineering drawing, electronic drawing software, energy technology and building systems. Grads will be prepped for a nationally recognized "Green" certification, Building Analyst, and Envelop Certification.

Admission Dates: Fall Semester

Offered on the North Mankato Campus

The course requirements listed below are specific to the 2013-2014 school year. If you need to view the program from previous years view our [Catalog Archive](#).

This credential is part of the Architectural Drafting and Design department. [See the Architectural Drafting and Design department page for more details](#)

Required Technical Courses (10 Courses)

NOTE: Due to the highly responsible nature of the work performed, no grade lower than a C in any required course with a BDET prefix will be counted towards graduation.

You must complete all of the following classes:

- [BDET1100](#) Introduction to Building Design and Energy Technology (1 Credit)
- [BDET1110](#) Studio I (4 Credits)
- [BDET1120](#) Estimating Concepts (2 Credits)
- [BDET1130](#) Materials and Methods (3 Credits)
- [BDET1150](#) AutoCAD (2 Credits)
- [BDET1210](#) Studio II (4 Credits)
- [BDET1220](#) Building Analyst (3 Credits)
- [BDET1240](#) Construction Documents (2 Credits)
- [BDET1250](#) Revit (2 Credits)
- [BDET1260](#) Special Topics in Environmental Design (1 Credit)

Required Liberal Arts and Sciences (8 Credits)

Please complete both of the following courses:

- [ENGL100](#) Composition (4 Credits)
- [MATH120](#) College Algebra (4 Credits)

PLEASE NOTE: All program plans are preliminary and curriculum may change without notice. Your [catalog of record](#) may have different requirements.

Architectural Drafting and Design - Diploma of Occupational Proficiency Course Descriptions**Introduction to Building Design and Energy Technology****BDET1100 1.00 credits**

Overview of academic preparation and career opportunities in the field of: Architectural, Mechanical-Electrical-Plumbing (MEP), structural, building design and energy technology. (Prerequisite: None)

Studio I**BDET1110 4.00 credits**

This is an introductory studio course for students interested in Building Design and Energy Technology. Studio I includes a combination of sketching and electronic drawing software applications. This course will cover, sketching techniques, dimensions, notations, organization, and measuring. This class advances into drawing a commercial wood-frame construction project while incorporating electronic drawing software into the design process. (Prerequisite: None)

Estimating Concepts**BDET1120 2.00 credits**

This course covers principles of quantity takeoffs, identification of symbols, and computation of materials from a set of commercial construction working drawings utilizing the CSI divisions. (Prerequisite: None)

Materials and Methods**BDET1130 3.00 credits**

The basic construction methods and materials used in building technologies are examined. Common building materials such as wood, masonry, concrete, and metals will be analyzed as it relates to commercial applications. The classification of materials and project delivery systems; application of principles of building science to construction sites; relationship between technology and sustainability will be addressed. (Prerequisite: None)

AutoCAD**BDET1150 2.00 credits**

This is an introductory 2D computer-aided drafting course that takes a practical hands-on approach to the use, operations, and methods of AutoCAD. It includes the following: drafting, line types, line widths, accuracy, and dimensioning, editing, drawing setup, scaling, and plotting. (Prerequisite: None)

Studio II**BDET1210 4.00 credits**

This course covers the materials, methods, and construction principles of a commercial project. Electronic drawing software and hand drawing will be utilized. Independent work, critical thinking, problem solving, and application are emphasized. A set of working drawings will be drawn incorporating construction documents. (Prerequisites: BDET 1110, 1150)

Building Analyst**BDET1220 3.00 credits**

This course will provide an understanding of technical standards for home performance and weatherization retrofit. The course will provide an introduction to building performance as it relates to the residential sector. The student will be introduced to the building shell components, combustion zone and blower door testing. In addition, the student will be aware of the auditing process and customer relations. This course will follow the Building Performance

Construction Documents**BDET1240 2.00 credits**

This course provides an overview of construction documents including working drawings, specifications, and other contract documents. Emphasis on the development of project manual, legal and ethical aspects, and divisions of work. (Prerequisites: BDET 1110)

Institute (BPI) standards and content for building analyst and envelop professional. (Prerequisites: BDET 1110, 1130)

Revit

BDET1250 2.00 credits

This is an introductory 3D computer-aided course that takes a practical hands-on approach to the use, operations, and methods of Revit. It includes the following: detailing and drafting views, construction documentation, and the basics of building modeling. (Prerequisites: BDET 1110, 1150)

Composition

ENGL100 4.00 credits

Composition is concerned with developing, through theory and practice, the ability to communicate in written form for personal and professional reasons. Students will develop writing skills, analytical skills, and critical thinking skills. Students will complete readings, papers, grammar exercises, and in-class activities. Students will learn methods of writing informatively and persuasively. (Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher AND a score of 85.5 or higher on the Sentence Skills portion of the Accuplacer test or completion of ENGL 0080 and ENGL 0090 with a grade of C or higher)(MNTC 1: Communication) This course has an online option.

Special Topics in Environmental Design

BDET1260 1.00 credits

This course will provide an understanding of addressing surrounding environmental parameters. These parameters may result when devising plans, programs, policies, buildings or products. The course will also provide an introduction to the human-designed environment. This introduction will relate to interdisciplinary areas such as architecture, urban planning, and product design and sustainability issues. (Prerequisite: BDET 1110)

College Algebra

MATH120 4.00 credits

This course is mainly concerned with functions, most of which are algebraic. It begins with a general treatment of equations and inequalities and then proceeds to cover linear functions, quadratic functions, other polynomial and rational functions, piecewise functions, equations involving radicals and absolute values, logarithms and exponentials, systems of equations and inequalities, permutations and combinations. (Prerequisites: Two years of high school algebra or completion of MATH 0085 with a grade of C or higher, or a score of 75.5 on the Elementary Algebra portion of the Accuplacer test AND a score of 49.5 or higher on the College Level Math portion of the Accuplacer test) (MNTC 4: Mathematical/Logical Reasoning)

Auto Body and Collision Technology Department Overview

The Auto Body and Collision Technology program prepares students for entry-level employment in the Auto Body and Collision industry. Students will gain necessary skills, knowledge, and experience through classroom presentations, demonstrations, and hands-on shop work. Students may pursue either the diploma or the Associate of Applied Science Degree option. The diploma is designed to meet the needs of a student who wishes to concentrate on technical skills and 6 Liberal Arts & Sciences credits. The A.A.S. Degree option provides students with the opportunity to develop technical skills and to broaden personal horizons through the requirement of 15 Liberal Arts & Sciences credits. Individual students are required to have tools relative to the trade area.

Credentials: Instructors are Automotive Service Excellence (ASE) Certified and regularly receive advanced training from vehicle manufacturers and aftermarket suppliers.

Core Competencies

1. Practice and demonstrate safety and environmental awareness
2. Perform non structural (sheet metal) repair and damage analysis
3. Perform structural repair (frame and unibody) and damage analysis
4. Perform refinishing operations
5. Perform auto body welding
6. Perform glass, trim and hardware service operations
7. Conduct electrical and mechanical service

Department Faculty

Dan Boddy, Jay Winters

Auto Body and Collision Technology Degrees

Auto Body and Collision Technology AAS Degree
Auto Body and Collision Technology Diploma

Auto Body and Collision Technology

A.A.S. Degree • 72 Credits

AAS 3415

Degree Description

The Auto Body and Collision Technology program prepares students for entry-level employment in the Auto Body and Collision industry. Students will gain necessary skills, knowledge, and experience through classroom presentations, demonstrations, and hands-on shop work. Students may pursue either the diploma or the Associate of Applied Science Degree option. The diploma is designed to meet the needs of a student who wishes to concentrate on technical skills and 6 Liberal Arts & Sciences credits. The A.A.S. Degree option provides students with the opportunity to develop technical skills and to broaden personal horizons through the requirement of 15 Liberal Arts & Sciences credits. Individual students are required to have tools relative to the trade area.

Admission Dates: Fall Semester

Offered on the North Mankato Campus

The course requirements listed below are specific to the 2013-2014 school year. If you need to view the program from previous years view our [Catalog Archive](#).

This credential is part of the Auto Body and Collision Technology department. [See the Auto Body and Collision Technology department page for more details](#)

Required Technical Courses (18 Courses)

Select the following courses:

- [ABCT1805](#) Auto Body Collision Technology Fundamentals (2 Credits)
- [ABCT1801](#) Auto Body Lab I (4 Credits)
- [ABCT1810](#) Sheet Metal I (3 Credits)
- [ABCT1820](#) Priming and Refinish System Preparation (3 Credits)
- [ABCT1860](#) Auto Body Welding (3 Credits)
- [ABCT1802](#) Auto Body Lab II (4 Credits)
- [ABCT1850](#) Trim, Hardware and Glass (3 Credits)
- [ABCT1870](#) Refinishing (3 Credits)
- [ABCT1880](#) Sheet Metal II (3 Credits)
- [ABCT2800](#) Damage Appraisal and Shop Management (3 Credits)
- [ABCT2803](#) Auto Body Lab III (4 Credits)
- [ABCT1840](#) Auto Collision Mechanical I (3 Credits)
- [ABCT2810](#) Appearance Matching (3 Credits)
- [ABCT2820](#) Composites (2 Credits)
- [ABCT2830](#) Measuring and Pulling Systems (3 Credits)
- [ABCT2804](#) Auto Body Lab IV (4 Credits)
- [ABCT2850](#) Structural Repair (3 Credits)
- [ABCT2870](#) Auto Collision Mechanical II (3 Credits)

Technical Elective Credits (1 Credit)

Courses must be selected in consultation with advisor/faculty. Choose from the following courses or see advisor/faculty for additional offerings.

- [ABCT2910](#) Occupational Internship (1 - 9 Credits)
- [ABCT2920](#) Special Problems (1 - 6 Credits)
- [ABCT2805](#) Auto Body and Collision Air Conditioning (2 Credits)

PLEASE NOTE: All program plans are preliminary and curriculum may change without notice. Your [catalog of record](#) may have different requirements.

Required Liberal Arts & Sciences

To complete an AAS Degree, students must complete 15 MNTC credits from 3 of the 10 MNTC goal areas. Courses must be selected in consultation with advisor/faculty.

Auto Body and Collision Technology - Associate of Applied Science Degree Course Descriptions**Auto Body Collision Technology Fundamentals****ABCT1805 2.00 credits**

This course introduces students to the auto body industry, its careers and work standards. Basic shop procedures are covered in the course and students gain insight to the equipment, personal health, safety, and special tools used in auto body repair. (Prerequisites: None)

Sheet Metal I**ABCT1810 3.00 credits**

Students learn the characteristics of sheet metal repair processes in minor damage. Students practice sheet metal repair on panels or damage on vehicles. Students learn material product safety and safe use of body fillers.

Auto Body Welding**ABCT1860 3.00 credits**

This course covers safety procedures, setup and operation of MIG and oxyacetylene welding equipment. Flat, vertical, horizontal and overhead positions on automotive sheet metal will be practiced. Oxyacetylene and plasma arc cutting processes are included.

Trim, Hardware and Glass**ABCT1850 3.00 credits**

Students learn safe procedures for removal and replacement of stationary and movable glass. Also covered are various methods of trim and hardware attachments.

Sheet Metal II**ABCT1880 3.00 credits**

This course teaches advanced sheet metal repairs, replacement and sectioning on exterior cosmetic panels, panel adjustments, and fitting procedures.

Auto Body Lab I**ABCT1801 4.00 credits**

This course will allow the students to develop and to practice skills needed in the auto body industry through hands-on experience.

Priming and Refinish System Preparation**ABCT1820 3.00 credits**

This course teaches students refinishing safety, tools, equipment, surface preparation, and material application procedures.

Auto Body Lab II**ABCT1802 4.00 credits**

This course will allow the students to develop and to practice skills needed in the auto body industry through hands-on experience.

Refinishing**ABCT1870 3.00 credits**

This course teaches panel, blending, and overall refinish procedures using single and multi-stage refinish products.

Damage Appraisal and Shop Management**ABCT2800 3.00 credits**

This course includes identification and calculation of vehicle damage using manuals and computer assisted procedures. Shop management procedures will include inventory management, parts and repair ordering, customer relations, and communication skills.

Auto Body Lab III

ABCT2803 4.00 credits

This course will allow the students to develop and practice skills needed in the auto body industry through hands-on experience.

Appearance Matching

ABCT2810 3.00 credits

This course teaches students identification and correction of color match and appearance problems. The techniques of tinting, color correction, paint, and vehicle detailing will be covered.

Measuring and Pulling Systems

ABCT2830 3.00 credits

Students will use mechanical and computer assisted measuring systems to analyze and develop repair procedures on frame and unibody vehicles. Frame racks, bench, and floor pulling systems will be utilized to repair direct and indirect damage on open and closed panels.

Structural Repair

ABCT2850 3.00 credits

This course covers replacement, sectioning procedures and corrosion protection of the frame, unibody, and structural members and components. Wheel alignment as it applies during structural repair will be covered.

Occupational Internship

ABCT2910 1 - 9 credits

Students will work in a sponsoring auto body facility. A training plan will be developed and utilized. (Prerequisite: Instructor Approval)

Auto Body and Collision Air Conditioning

ABCT2805 2.00 credits

This course covers the principles of air conditioning. Various system types, collision damage analysis, malfunction diagnosis, testing, and repair are studied in the classroom. Practical work such as component replacement, system evacuation, charging, and performance testing will be included.(Prerequisites: None)

Auto Collision Mechanical I

ABCT1840 3.00 credits

This course covers the principles of removing and replacing mechanical components in front and rear wheel drive vehicles as related to the auto body industry. The course includes environmental issues.(Prerequisites: None)

Composites

ABCT2820 2.00 credits

This course teaches students identification and safe repair of interior and exterior automotive plastics including sheet molded compound and fiberglass.

Auto Body Lab IV

ABCT2804 4.00 credits

This course will allow the student to develop and to practice skills needed in the auto body industry through hands-on experience.

Auto Collision Mechanical II

ABCT2870 3.00 credits

This course teaches collision service techniques for chassis, electronic components, steering and suspension systems, antilock brake systems, air bags, and related vehicle safety systems.

Special Problems

ABCT2920 1 - 6 credits

This course will be of individual design to allow students hands-on or classroom as needed to practice skills required in the auto body industry.

Auto Body and Collision Technology

Diploma • 64 Credits

DIP 3414



Degree Description

The Auto Body and Collision Technology program prepares students for entry-level employment in the Auto Body and Collision industry. Students will gain necessary skills, knowledge, and experience through classroom presentations, demonstrations, and hands-on shop work. Students may pursue either the diploma or the Associate of Applied Science Degree option. The diploma is designed to meet the needs of a student who wishes to concentrate on technical skills and 6 Liberal Arts & Sciences credits. The A.A.S. Degree option provides students with the opportunity to develop technical skills and to broaden personal horizons through the requirement of 15 Liberal Arts & Sciences credits. Individual students are required to have tools relative to the trade area.

Admission Dates: Fall Semester

Offered on the North Mankato Campus

The course requirements listed below are specific to the 2013-2014 school year. If you need to view the program from previous years view our [Catalog Archive](#).

This credential is part of the Auto Body and Collision Technology department. [See the Auto Body and Collision Technology department page for more details](#)

Required Technical Courses (19 Courses)

Complete all of the following courses:

- [ABCT1805](#) Auto Body Collision Technology Fundamentals (2 Credits)
- [ABCT1801](#) Auto Body Lab I (4 Credits)
- [ABCT1810](#) Sheet Metal I (3 Credits)
- [ABCT1820](#) Priming and Refinish System Preparation (3 Credits)
- [ABCT1860](#) Auto Body Welding (3 Credits)
- [ABCT1802](#) Auto Body Lab II (4 Credits)
- [ABCT1850](#) Trim, Hardware and Glass (3 Credits)
- [ABCT1870](#) Refinishing (3 Credits)
- [ABCT1880](#) Sheet Metal II (3 Credits)
- [ABCT2800](#) Damage Appraisal and Shop Management (3 Credits)
- [ABCT2803](#) Auto Body Lab III (4 Credits)
- [ABCT1840](#) Auto Collision Mechanical I (3 Credits)
- [ABCT2810](#) Appearance Matching (3 Credits)
- [ABCT2820](#) Composites (2 Credits)
- [ABCT2830](#) Measuring and Pulling Systems (3 Credits)
- [ABCT2804](#) Auto Body Lab IV (4 Credits)
- [ABCT2805](#) Auto Body and Collision Air Conditioning (2 Credits)
- [ABCT2850](#) Structural Repair (3 Credits)
- [ABCT2870](#) Auto Collision Mechanical II (3 Credits)

Required Liberal Arts and Sciences (6 Credits)

To complete the diploma, students must complete 6 MNTC credits from 2 of the 10 MNTC goal areas. Courses must be approved by advisor/faculty.

PLEASE NOTE: All program plans are preliminary and curriculum may change without notice. Your [catalog of record](#) may have different requirements.

Elective Courses (Suggested)

These courses are not required but are suggested as courses which may be beneficial to you in this career field. You will graduate from this program even if you do not complete these courses.

- [ABCT2900](#) Auto Body Lab (1 - 4 Credits)
- [ABCT2910](#) Occupational Internship (1 - 9 Credits)

Auto Body and Collision Technology - Diploma of Occupational Proficiency Course Descriptions**Auto Body Collision Technology Fundamentals****ABCT1805 2.00 credits**

This course introduces students to the auto body industry, its careers and work standards. Basic shop procedures are covered in the course and students gain insight to the equipment, personal health, safety, and special tools used in auto body repair. (Prerequisites: None)

Sheet Metal I**ABCT1810 3.00 credits**

Students learn the characteristics of sheet metal repair processes in minor damage. Students practice sheet metal repair on panels or damage on vehicles. Students learn material product safety and safe use of body fillers.

Auto Body Welding**ABCT1860 3.00 credits**

This course covers safety procedures, setup and operation of MIG and oxyacetylene welding equipment. Flat, vertical, horizontal and overhead positions on automotive sheet metal will be practiced. Oxyacetylene and plasma arc cutting processes are included.

Trim, Hardware and Glass**ABCT1850 3.00 credits**

Students learn safe procedures for removal and replacement of stationary and movable glass. Also covered are various methods of trim and hardware attachments.

Sheet Metal II**ABCT1880 3.00 credits**

This course teaches advanced sheet metal repairs, replacement and sectioning on exterior cosmetic panels, panel adjustments, and fitting procedures.

Auto Body Lab I**ABCT1801 4.00 credits**

This course will allow the students to develop and to practice skills needed in the auto body industry through hands-on experience.

Priming and Refinish System Preparation**ABCT1820 3.00 credits**

This course teaches students refinishing safety, tools, equipment, surface preparation, and material application procedures.

Auto Body Lab II**ABCT1802 4.00 credits**

This course will allow the students to develop and to practice skills needed in the auto body industry through hands-on experience.

Refinishing**ABCT1870 3.00 credits**

This course teaches panel, blending, and overall refinish procedures using single and multi-stage refinish products.

Damage Appraisal and Shop Management**ABCT2800 3.00 credits**

This course includes identification and calculation of vehicle damage using manuals and computer assisted procedures. Shop management procedures will include inventory management, parts and repair ordering, customer relations, and communication skills.

Auto Body Lab III

ABCT2803 4.00 credits

This course will allow the students to develop and practice skills needed in the auto body industry through hands-on experience.

Appearance Matching

ABCT2810 3.00 credits

This course teaches students identification and correction of color match and appearance problems. The techniques of tinting, color correction, paint, and vehicle detailing will be covered.

Measuring and Pulling Systems

ABCT2830 3.00 credits

Students will use mechanical and computer assisted measuring systems to analyze and develop repair procedures on frame and unibody vehicles. Frame racks, bench, and floor pulling systems will be utilized to repair direct and indirect damage on open and closed panels.

Auto Body and Collision Air Conditioning

ABCT2805 2.00 credits

This course covers the principles of air conditioning. Various system types, collision damage analysis, malfunction diagnosis, testing, and repair are studied in the classroom. Practical work such as component replacement, system evacuation, charging, and performance testing will be included. (Prerequisites: None)

Auto Collision Mechanical II

ABCT2870 3.00 credits

This course teaches collision service techniques for chassis, electronic components, steering and suspension systems, antilock brake systems, air bags, and related vehicle safety systems.

Occupational Internship

ABCT2910 1 - 9 credits

Students will work in a sponsoring auto body facility. A training plan will be developed and utilized. (Prerequisite: Instructor Approval)

Auto Collision Mechanical I

ABCT1840 3.00 credits

This course covers the principles of removing and replacing mechanical components in front and rear wheel drive vehicles as related to the auto body industry. The course includes environmental issues. (Prerequisites: None)

Composites

ABCT2820 2.00 credits

This course teaches students identification and safe repair of interior and exterior automotive plastics including sheet molded compound and fiberglass.

Auto Body Lab IV

ABCT2804 4.00 credits

This course will allow the student to develop and to practice skills needed in the auto body industry through hands-on experience.

Structural Repair

ABCT2850 3.00 credits

This course covers replacement, sectioning procedures and corrosion protection of the frame, unibody, and structural members and components. Wheel alignment as it applies during structural repair will be covered.

Auto Body Lab

ABCT2900 1 - 4 credits

This course will allow the students to develop and practice skills needed in the auto body industry through hands-on experience. This is a variable credit offering.

Special Problems

ABCT2920 1 - 6 credits

This course will be of individual design to allow students hands-on or classroom as needed to practice skills required in the auto body industry.

Automotive Service Department Overview

Program Mission: Provide the opportunity for students to acquire the skills necessary for entrylevel employment in the automotive service industry.

Credentials: All Automotive Service instructors are Automotive Service Excellence (ASE) Certified Master Automobile Technicians and regularly receive advanced training from vehicle manufacturers and aftermarket suppliers. The Automotive Service department was evaluated by the National Automotive Technicians Education Foundation (NATEF) and has been an ASE Certified Automotive Training Program since 1998.

After Graduation: An individual completing this program will find employment opportunities available in a variety of settings. Graduates find entry level positions in dealerships, independent repair facilities and fleet services. With additional training and experience, many technicians become shop foreman, service advisor, service manager or open their own business.

Preparation: Individuals interested in a career in automotive service should be mechanically inclined, have good reading and math skills, and enjoy working on cars and trucks. High school training in automotive service is an advantage, as is any training in electronics and computer operation. But the most important factor may be your desire to succeed in this highly skilled profession.

The goal of the program is to provide intensive training and experience in the diagnosis, repair and service of contemporary vehicles.

Core Competencies

1. Perform engine diagnosis and repair
2. Diagnose and repair transmissions and drive trains
3. Service suspension and steering components
4. Inspect and repair braking systems
5. Demonstrate electrical/electronic component repairs
6. Maintain and service heating and air conditioning systems
7. Troubleshoot and repair engine performance
8. Demonstrate Professionalism

Department Faculty

Jim Brady, Dick Stelten

Automotive Service Degrees

Automotive Services AAS Degree
Automotive Service Diploma

Automotive Services

A.A.S. Degree • 72 Credits

AAS 3417



Degree Description

The Automotive Service program is designed to provide the opportunity to acquire the skills necessary for entry-level employment in the automotive service industry. An individual completing this program will find employment opportunities available in a variety of settings. Graduates find entry level positions in dealerships, independent repair facilities and fleet services. With additional training and experience, many technicians can become a shop foreman, service advisor, service manager or open their own business.

Admission Dates: Fall and Spring Semester

Offered on the North Mankato Campus

The course requirements listed below are specific to the 2013-2014 school year. If you need to view the program from previous years view our [Catalog Archive](#).

This credential is part of the Automotive Service department. [See the Automotive Service department page for more details](#)

Required Technical Courses (23 Courses)

Complete all of the following courses:

- [AST 1112](#) Introduction to Auto Service (2 Credits)
- [AST 1121](#) Service Management (1 Credit)
- [AST 1212](#) Basic Electrical (2 Credits)
- [AST 1222](#) Advanced Electrical/Electronics (2 Credits)
- [AST 1233](#) Starting and Charging Systems (3 Credits)
- [AST 1311](#) Engine Diagnosis (1 Credit)
- [AST 1323](#) Lower Engine Service (3 Credits)
- [AST 1332](#) Upper Engine Service (2 Credits)
- [AST 1341](#) Engine Lab (1 Credit)
- [AST 1412](#) Clutch & Drive Line (2 Credits)
- [AST 1423](#) Manual Transmission/Transaxle & 4X4 (3 Credits)
- [AST 1513](#) Suspension/Steering & Wheel Alignment (3 Credits)
- [AST 1613](#) Brakes (3 Credits)
- [AST 1622](#) Advanced Brakes (2 Credits)
- [AST 1712](#) Basic Tune-up (Non-computer) (2 Credits)
- [AST 2432](#) Rear Axle/Differential (2 Credits)
- [AST 2442](#) Automatic Transmission I (2 Credits)
- [AST 2452](#) Automatic Transmission II (2 Credits)
- [AST 2462](#) Automatic Transmission III (2 Credits)
- [AST 2723](#) Fuel Systems I (3 Credits)
- [AST 2733](#) Introduction to Automotive Computers (3 Credits)
- [AST 2743](#) Fuel Systems II (3 Credits)
- [AST 2752](#) Engine Performance & Drivability (2 Credits)
- [AST 2812](#) Basic Air Conditioning (2 Credits)

Auto Lab (4 Credits)

NOTE: Qualified sophomores may substitute COE for two credits of Auto Lab. Choose all four of the following courses:

- [AST 2911](#) Auto Lab I (1 Credit)
- [AST 2921](#) Auto Lab II (1 Credit)
- [AST 2931](#) Auto Lab III (1 Credit)
- [AST 2941](#) Auto Lab IV (1 Credit)

PLEASE NOTE: All program plans are preliminary and curriculum may change without notice. Your [catalog of record](#) may have different requirements.

Elective Technical Courses (2 Credits)

Select at least two credits from the following:

- [AST 2951](#) Individualized Study (1 - 8 Credits)
- [AST 2961](#) Cooperative Occupational Experience (1 - 8 Credits)
- [AST 2822](#) Advanced Heating and Air Conditioning (2 Credits)

Liberal Arts and Sciences

To complete an AAS Degree, students must complete 15 MNTC credits from 3 of the 10 MNTC goal areas.

Automotive Services - Associate of Applied Science Degree Course Descriptions**Introduction to Auto Service****AST 1112 2.00 credits**

This course is a requisite for the Automotive Service program. The course will include the following topics: shop safety, shop practices and procedures, vehicle identification, use of electronic service information, proper use of hand tools, power tools, hoist and other shop equipment, basic fasteners, tires, lubricants and fluids. (Prerequisite: Admission into the Automotive Service program)

Basic Electrical**AST 1212 2.00 credits**

This course covers the fundamentals of electricity and electronics. Electrical circuits and components, magnetism, resistance, current flow, capacitance, instruments, diodes, and solid-state devices will be presented in a manner which relates the subject to the occupation. (Prerequisites: Admission into the Automotive Service program)

Starting and Charging Systems**AST 1233 3.00 credits**

This course covers the theory and operation of starting and charging systems. Instruction in parts identification, circuit operation, component testing, rebuilding procedures, and circuit diagnosis will be included. Prior knowledge gained by the successful completion of AST 1222 is required for student success in this course. (Prerequisite: Admission into the Automotive Service program)

Lower Engine Service**AST 1323 3.00 credits**

This course covers the theory of engine operation and construction, parts identification, measurements, and engine wear locations. Determining the service procedures an engine will require and the reconditioning of all lower engine components are included in this course. Prior knowledge gained by the successful completion of AST 1311 is required for student success in this course. (Prerequisite: Admission into the Automotive Service program)

Service Management**AST 1121 1.00 credits**

This course is designed for individuals who will be responsible for the operation of an automotive repair facility. It provides instruction in customer service, parts and service marketing, shop management, and business ethics in the automotive repair field. (Prerequisite: Admission into the Automotive Service program)

Advanced Electrical/Electronics**AST 1222 2.00 credits**

This course covers the operation and diagnosis of lighting systems, gauges and warning systems, horns, windshield wiper and washer systems, power locks, power windows and seats, and other automotive electrical systems. Prior knowledge gained by the successful completion of AST 1212 is required for student success in this course. (Prerequisites: Admission into the Automotive Service program)

Engine Diagnosis**AST 1311 1.00 credits**

This course covers engine diagnosis using various types of test equipment. This course focuses on developing the skills needed to diagnose and analyze basic engine problems. Prior knowledge gained by the successful completion of AST 1712 is required for student success in this course. (Prerequisite: Admission into the Automotive Service program)

Upper Engine Service**AST 1332 2.00 credits**

This course covers testing and rebuilding the cylinder head. The student will analyze cylinder compression and leakage to determine if valve and valve seat service is necessary. Hands-on experience consists of valve refacing, valve guide service, valve seat reconditioning, valve spring testing, shim selection, and proper assembly and installation. Prior knowledge gained by the successful completion of AST 1311 is required for student success in this course. (Prerequisite: Admission into the Automotive Service program)

Engine Lab

AST 1341 1.00 credits

Course Outline

This course is designed to allow students enrolled in the engine services sequence of courses, time to complete the assigned projects. Prior knowledge gained by the successful completion of AST 1323 and AST 1332 is required for student success in this course. (Prerequisite: Admission into the Automotive Service program)

Manual Transmission/Transaxle & 4X4

AST 1423 3.00 credits

This course covers the operation and the proper repair procedures for the types of manual transmissions/transaxles and transfer cases used in late model vehicles. Four wheel drive, locking hubs, axle disconnects, AWD, full-time, and part-time four-wheel drive systems will also be covered. Prior knowledge gained by successful completion of AST 1112 is required for student success in this class. (Prerequisite: Admission into the Automotive Service program)

Brakes

AST 1613 3.00 credits

This course covers the principles of friction and braking systems, disc and drum brakes, parking brakes, and power assist units. Emphasis will be placed on system operation, diagnosis, repair, and maintenance of the various types of braking systems. Prior knowledge gained by successful completion of AST 1112 is required for student success in this class. (Prerequisite: Admission into the Automotive Service program)

Basic Tune-up (Non-computer)

AST 1712 2.00 credits

This course covers the theory and principles of operation of automotive gasoline engines, fuel systems, ignition systems, and emission systems. Prior knowledge gained by the successful completion of AST 1212 is required for student success in this course. (Prerequisite: Admission into the Automotive Service program)

Automatic Transmission I

AST 2442 2.00 credits

This course covers how an automatic transmission works, the basic parts, functions, and power flow of the hydraulic circuits. This course also includes the basic theory of torque converters, planetary gears, clutches, bands, and hydraulic circuit operation. Prior knowledge gained by successful

Clutch & Drive Line

AST 1412 2.00 credits

This course covers standard automotive and light truck clutches. Content includes design, adjustment, overhaul, diagnosis, and repair. Also included are mechanical and hydraulic systems. The drive line section includes phasing, alignment, and balance. Prior knowledge gained by successful completion of AST 1112 is required for student success. (Prerequisites: Admission into the Automotive Service program)

Suspension/Steering & Wheel Alignment

AST 1513 3.00 credits

This course covers front and rear suspension systems, wheel balance, and steering systems and components. Students will be required to perform a front and rear wheel alignment. Prior knowledge gained by successful completion of AST 1112 is required for student success in this class. (Prerequisite: Admission into the Automotive Service program)

Advanced Brakes

AST 1622 2.00 credits

This course will cover anti-lock brake systems. Emphasis will be placed on system operation and controls. Diagnosis, repair, and maintenance of the various types of systems will also be included. Prior knowledge gained by successful completion of AST 1112 and AST 1613 is required for student success in this class. (Prerequisite: Admission into the Automotive Service program)

Rear Axle/Differential

AST 2432 2.00 credits

This course will cover the operation of and repair procedures of current differentials used on late model vehicles. Prior knowledge gained by successful completion of AST 1112 is required for student success in this class. (Prerequisite: Admission into the Automotive Service program)

Automatic Transmission II

AST 2452 2.00 credits

This course is a hands-on lab class in which various transmissions and transaxles are overhauled, adjusted, and bench tested. Basic overhaul techniques and special tool and gauge usage are included. Prior knowledge gained by successful completion of AST 1112 and AST 2442 is required

completion of AST 1112 is required for student success in this class. (Prerequisite: Admission into the Automotive Service program)

Automatic Transmission III

AST 2462 2.00 credits

The student after completing this course will have a basic understanding of troubleshooting, repairs, and adjustments of conventional and electronic shift automatic transmissions. Prior knowledge gained by successful completion of AST 1112, 2442, and 2452 is required for student success in this class. (Prerequisite: Admission into the Automotive Service program)

Introduction to Automotive Computers

AST 2733 3.00 credits

This course covers the theory and operating principles of automotive computers, sensors, and control devices. Prior knowledge gained by the successful completion of AST 1222, AST 1712, and AST 2723 is required for student success in this course. (Prerequisite: Admission into the Automotive Service program)

Engine Performance & Drivability

AST 2752 2.00 credits

This course emphasizes the accurate and efficient diagnosis and repair of drivability concerns associated with all aspects of engine operation. Particular attention will be placed on computerized engine management systems. Prior knowledge gained by the successful completion of AST 2743 is required for student success in this course. (Prerequisite: Admission into the Automotive Service program)

Auto Lab I

AST 2911 1.00 credits

This course is designed to provide students an opportunity to develop practical automotive repair skills. Auto Lab provides the student shop time to complete projects and lab assignments required in the Automotive Service program. This is a hands-on, performance based course where students work on diagnosing, maintaining and repairing vehicles. Prior knowledge gained by the successful completion of AST 1112 or concurrent enrollment in AST 1112 is required for student success in this course. (Prerequisite: Admission into the Automotive Service program)

for student success in this class. (Prerequisite: Admission into the Automotive Service program)

Fuel Systems I

AST 2723 3.00 credits

This course will cover the principles of operation of the automotive fuel and emission systems. Fuel system components and emission control devices associated with the fuel system will be included. System diagnosis and repair will be emphasized. Prior knowledge gained by the successful completion of AST 1712 is required for student success in this course. (Prerequisite: Admission into the Automotive Service program)

Fuel Systems II

AST 2743 3.00 credits

This course will cover throttle body, multi-port, and sequential fuel injection systems. This course focuses on preparing the student to inspect, test, diagnose, and repair automotive fuel injection systems. Prior knowledge gained by the successful completion of AST 2733 is required for student success in this course. (Prerequisite: Admission into the Automotive Service program)

Basic Air Conditioning

AST 2812 2.00 credits

This course covers the principles of air conditioning. Various system types, malfunction diagnosis, testing, and repair are studied in the classroom. Practical work such as component replacement, charging, and performance testing will be on actual systems. Prior knowledge gained by successful completion of AST 1112 is required for student success in this class. (Prerequisite: Admission into the Automotive Service program)

Auto Lab II

AST 2921 1.00 credits

This course is designed to provide students an opportunity to develop practical automotive repair skills, Auto Lab provides the student shop time to complete projects required in the Automotive Service program. This is a hands-on, performance based course where students work on diagnosing, maintaining and repairing vehicles. Students earn ♦Invoiced♦ or ♦Billed hours♦ for completing work assignments. Students are required to have their own tool set to complete lab assignments. This course is designed to provide students an opportunity develop practical automotive repair skills. Auto Lab provides the student shop time to complete projects and lab assignments required in the Automotive Service program. This is a hands-on, performance based course where students work on diagnosing, maintaining and repairing vehicles. Prior knowledge gained by successful completion of AST 1112 is

required for student success in this class. (Prerequisite: Admission into the Automotive Service program)

Auto Lab III

AST 2931 1.00 credits

This course is designed to provide students an opportunity to develop practical automotive repair skills. Auto Lab provides the student shop time to complete projects required in the Automotive Service program. This is a hands-on, performance based course where students work on diagnosing, maintaining and repairing vehicles. Prior knowledge gained by successful completion of AST 1112 is required for student success in this class. (Prerequisite: Admission into the Automotive Service program)

Auto Lab IV

AST 2941 1.00 credits

This course is designed to provide students an opportunity to develop practical automotive repair skills. Auto Lab provides the student shop time to complete projects and lab assignments required in the Automotive Service program. This is a hands-on, performance based course where students work on diagnosing, maintaining and repairing vehicles. Prior knowledge gained by the successful completion of AST 1112 or concurrent enrollment in AST 1112 is required for student success in this course. (Prerequisite: Admission into the Automotive Service program)

Individualized Study

AST 2951 1 - 8 credits

This course allows the student to design a program of study geared toward individual need and special interest. The student will specialize in developing skills and competencies in selected areas. (Prerequisites: Instructor approval)

Cooperative Occupational Experience

AST 2961 1 - 8 credits

Students will work in a sponsoring automotive service facility. The tasks and activities must be consistent with prior course work. The work schedule will be determined on a case-by-case basis. (Prerequisites: The student must be in the second year of the program and instructor approval is required. Credits are variable up to a maximum of 8)

Advanced Heating and Air Conditioning

AST 2822 2.00 credits

This course covers automatic temperature control systems operation, testing and repairs of vacuum and electrical controls, air flow distribution, and heater system controls. Prior knowledge gained by successful completion of AST 1112 and AST 2812 is required for student success in this class. (Prerequisite: Admission into the Automotive Service program)

Automotive Service

Diploma • 64 Credits

DIP 3416



Degree Description

The Automotive Service program is designed to provide the opportunity to acquire the skills necessary for entry-level employment in the automotive service industry. An individual completing this program will find employment opportunities available in a variety of settings. Graduates find entry level positions in dealerships, independent repair facilities and fleet services. With additional training and experience, many technicians can become a shop foreman, service advisor, service manager or open their own business.

Admission Dates: Fall and Spring Semester

Offered on the North Mankato Campus

The course requirements listed below are specific to the 2013-2014 school year. If you need to view the program from previous years view our [Catalog Archive](#).

This credential is part of the Automotive Service department. [See the Automotive Service department page for more details](#)

Required Technical Courses (28 Courses)

Complete all of the following courses: NOTE: For qualified sophomores, COE may be substituted for up to 2 credits of Auto Lab.

- [AST 1112](#) Introduction to Auto Service (2 Credits)
- [AST 1121](#) Service Management (1 Credit)
- [AST 1212](#) Basic Electrical (2 Credits)
- [AST 1222](#) Advanced Electrical/Electronics (2 Credits)
- [AST 1233](#) Starting and Charging Systems (3 Credits)
- [AST 1311](#) Engine Diagnosis (1 Credit)
- [AST 1323](#) Lower Engine Service (3 Credits)
- [AST 1332](#) Upper Engine Service (2 Credits)
- [AST 1341](#) Engine Lab (1 Credit)
- [AST 1412](#) Clutch & Drive Line (2 Credits)
- [AST 1423](#) Manual Transmission/Transaxle & 4X4 (3 Credits)
- [AST 1513](#) Suspension/Steering & Wheel Alignment (3 Credits)
- [AST 1613](#) Brakes (3 Credits)
- [AST 1622](#) Advanced Brakes (2 Credits)
- [AST 1712](#) Basic Tune-up (Non-computer) (2 Credits)
- [AST 2432](#) Rear Axle/Differential (2 Credits)
- [AST 2442](#) Automatic Transmission I (2 Credits)
- [AST 2452](#) Automatic Transmission II (2 Credits)
- [AST 2462](#) Automatic Transmission III (2 Credits)
- [AST 2723](#) Fuel Systems I (3 Credits)
- [AST 2733](#) Introduction to Automotive Computers (3 Credits)
- [AST 2743](#) Fuel Systems II (3 Credits)
- [AST 2752](#) Engine Performance & Drivability (2 Credits)
- [AST 2812](#) Basic Air Conditioning (2 Credits)
- [AST 2911](#) Auto Lab I (1 Credit)
- [AST 2921](#) Auto Lab II (1 Credit)
- [AST 2931](#) Auto Lab III (1 Credit)
- [AST 2941](#) Auto Lab IV (1 Credit)

Required Liberal Arts and Sciences (6 Credits)

Complete 6 MNTC credits from MNTC goals 1-10.

PLEASE NOTE: All program plans are preliminary and curriculum may change without notice. Your [catalog of record](#) may have different requirements.

Technical Electives (1 Credit)

Complete 1 credit from the following courses:

[AST 1622](#) Advanced Brakes (2 Credits)

[AST 2822](#) Advanced Heating and Air Conditioning (2 Credits)

[AST 2951](#) Individualized Study (1 - 8 Credits)

[AST 2961](#) Cooperative Occupational Experience (1 - 8 Credits)

Automotive Service - Diploma of Occupational Proficiency Course Descriptions**Introduction to Auto Service****AST 1112 2.00 credits**

This course is a requisite for the Automotive Service program. The course will include the following topics: shop safety, shop practices and procedures, vehicle identification, use of electronic service information, proper use of hand tools, power tools, hoist and other shop equipment, basic fasteners, tires, lubricants and fluids. (Prerequisite: Admission into the Automotive Service program)

Basic Electrical**AST 1212 2.00 credits**

This course covers the fundamentals of electricity and electronics. Electrical circuits and components, magnetism, resistance, current flow, capacitance, instruments, diodes, and solid-state devices will be presented in a manner which relates the subject to the occupation. (Prerequisites: Admission into the Automotive Service program)

Starting and Charging Systems**AST 1233 3.00 credits**

This course covers the theory and operation of starting and charging systems. Instruction in parts identification, circuit operation, component testing, rebuilding procedures, and circuit diagnosis will be included. Prior knowledge gained by the successful completion of AST 1222 is required for student success in this course. (Prerequisite: Admission into the Automotive Service program)

Lower Engine Service**AST 1323 3.00 credits**

This course covers the theory of engine operation and construction, parts identification, measurements, and engine wear locations. Determining the service procedures an engine will require and the reconditioning of all lower engine components are included in this course. Prior knowledge gained by the successful completion of AST 1311 is required for student success in this course. (Prerequisite: Admission into the Automotive Service program)

Service Management**AST 1121 1.00 credits**

This course is designed for individuals who will be responsible for the operation of an automotive repair facility. It provides instruction in customer service, parts and service marketing, shop management, and business ethics in the automotive repair field. (Prerequisite: Admission into the Automotive Service program)

Advanced Electrical/Electronics**AST 1222 2.00 credits**

This course covers the operation and diagnosis of lighting systems, gauges and warning systems, horns, windshield wiper and washer systems, power locks, power windows and seats, and other automotive electrical systems. Prior knowledge gained by the successful completion of AST 1212 is required for student success in this course. (Prerequisites: Admission into the Automotive Service program)

Engine Diagnosis**AST 1311 1.00 credits**

This course covers engine diagnosis using various types of test equipment. This course focuses on developing the skills needed to diagnose and analyze basic engine problems. Prior knowledge gained by the successful completion of AST 1712 is required for student success in this course. (Prerequisite: Admission into the Automotive Service program)

Upper Engine Service**AST 1332 2.00 credits**

This course covers testing and rebuilding the cylinder head. The student will analyze cylinder compression and leakage to determine if valve and valve seat service is necessary. Hands-on experience consists of valve refacing, valve guide service, valve seat reconditioning, valve spring testing, shim selection, and proper assembly and installation. Prior knowledge gained by the successful completion of AST 1311 is required for student success in this course. (Prerequisite: Admission into the Automotive Service program)

Engine Lab

AST 1341 1.00 credits

Course Outline

This course is designed to allow students enrolled in the engine services sequence of courses, time to complete the assigned projects. Prior knowledge gained by the successful completion of AST 1323 and AST 1332 is required for student success in this course. (Prerequisite: Admission into the Automotive Service program)

Manual Transmission/Transaxle & 4X4

AST 1423 3.00 credits

This course covers the operation and the proper repair procedures for the types of manual transmissions/transaxles and transfer cases used in late model vehicles. Four wheel drive, locking hubs, axle disconnects, AWD, full-time, and part-time four-wheel drive systems will also be covered. Prior knowledge gained by successful completion of AST 1112 is required for student success in this class. (Prerequisite: Admission into the Automotive Service program)

Brakes

AST 1613 3.00 credits

This course covers the principles of friction and braking systems, disc and drum brakes, parking brakes, and power assist units. Emphasis will be placed on system operation, diagnosis, repair, and maintenance of the various types of braking systems. Prior knowledge gained by successful completion of AST 1112 is required for student success in this class. (Prerequisite: Admission into the Automotive Service program)

Basic Tune-up (Non-computer)

AST 1712 2.00 credits

This course covers the theory and principles of operation of automotive gasoline engines, fuel systems, ignition systems, and emission systems. Prior knowledge gained by the successful completion of AST 1212 is required for student success in this course. (Prerequisite: Admission into the Automotive Service program)

Automatic Transmission I

AST 2442 2.00 credits

This course covers how an automatic transmission works, the basic parts, functions, and power flow of the hydraulic circuits. This course also includes the basic theory of torque converters, planetary gears, clutches, bands, and hydraulic circuit operation. Prior knowledge gained by successful

Clutch & Drive Line

AST 1412 2.00 credits

This course covers standard automotive and light truck clutches. Content includes design, adjustment, overhaul, diagnosis, and repair. Also included are mechanical and hydraulic systems. The drive line section includes phasing, alignment, and balance. Prior knowledge gained by successful completion of AST 1112 is required for student success. (Prerequisites: Admission into the Automotive Service program)

Suspension/Steering & Wheel Alignment

AST 1513 3.00 credits

This course covers front and rear suspension systems, wheel balance, and steering systems and components. Students will be required to perform a front and rear wheel alignment. Prior knowledge gained by successful completion of AST 1112 is required for student success in this class. (Prerequisite: Admission into the Automotive Service program)

Advanced Brakes

AST 1622 2.00 credits

This course will cover anti-lock brake systems. Emphasis will be placed on system operation and controls. Diagnosis, repair, and maintenance of the various types of systems will also be included. Prior knowledge gained by successful completion of AST 1112 and AST 1613 is required for student success in this class. (Prerequisite: Admission into the Automotive Service program)

Rear Axle/Differential

AST 2432 2.00 credits

This course will cover the operation of and repair procedures of current differentials used on late model vehicles. Prior knowledge gained by successful completion of AST 1112 is required for student success in this class. (Prerequisite: Admission into the Automotive Service program)

Automatic Transmission II

AST 2452 2.00 credits

This course is a hands-on lab class in which various transmissions and transaxles are overhauled, adjusted, and bench tested. Basic overhaul techniques and special tool and gauge usage are included. Prior knowledge gained by successful completion of AST 1112 and AST 2442 is required

completion of AST 1112 is required for student success in this class. (Prerequisite: Admission into the Automotive Service program)

Automatic Transmission III

AST 2462 2.00 credits

The student after completing this course will have a basic understanding of troubleshooting, repairs, and adjustments of conventional and electronic shift automatic transmissions. Prior knowledge gained by successful completion of AST 1112, 2442, and 2452 is required for student success in this class. (Prerequisite: Admission into the Automotive Service program)

Introduction to Automotive Computers

AST 2733 3.00 credits

This course covers the theory and operating principles of automotive computers, sensors, and control devices. Prior knowledge gained by the successful completion of AST 1222, AST 1712, and AST 2723 is required for student success in this course. (Prerequisite: Admission into the Automotive Service program)

Engine Performance & Drivability

AST 2752 2.00 credits

This course emphasizes the accurate and efficient diagnosis and repair of drivability concerns associated with all aspects of engine operation. Particular attention will be placed on computerized engine management systems. Prior knowledge gained by the successful completion of AST 2743 is required for student success in this course. (Prerequisite: Admission into the Automotive Service program)

Auto Lab I

AST 2911 1.00 credits

This course is designed to provide students an opportunity to develop practical automotive repair skills. Auto Lab provides the student shop time to complete projects and lab assignments required in the Automotive Service program. This is a hands-on, performance based course where students work on diagnosing, maintaining and repairing vehicles. Prior knowledge gained by the successful completion of AST 1112 or concurrent enrollment in AST 1112 is required for student success in this course. (Prerequisite: Admission into the Automotive Service program)

for student success in this class. (Prerequisite: Admission into the Automotive Service program)

Fuel Systems I

AST 2723 3.00 credits

This course will cover the principles of operation of the automotive fuel and emission systems. Fuel system components and emission control devices associated with the fuel system will be included. System diagnosis and repair will be emphasized. Prior knowledge gained by the successful completion of AST 1712 is required for student success in this course. (Prerequisite: Admission into the Automotive Service program)

Fuel Systems II

AST 2743 3.00 credits

This course will cover throttle body, multi-port, and sequential fuel injection systems. This course focuses on preparing the student to inspect, test, diagnose, and repair automotive fuel injection systems. Prior knowledge gained by the successful completion of AST 2733 is required for student success in this course. (Prerequisite: Admission into the Automotive Service program)

Basic Air Conditioning

AST 2812 2.00 credits

This course covers the principles of air conditioning. Various system types, malfunction diagnosis, testing, and repair are studied in the classroom. Practical work such as component replacement, charging, and performance testing will be on actual systems. Prior knowledge gained by successful completion of AST 1112 is required for student success in this class. (Prerequisite: Admission into the Automotive Service program)

Auto Lab II

AST 2921 1.00 credits

This course is designed to provide students an opportunity to develop practical automotive repair skills, Auto Lab provides the student shop time to complete projects required in the Automotive Service program. This is a hands-on, performance based course where students work on diagnosing, maintaining and repairing vehicles. Students earn ♦Invoiced♦ or ♦Billed hours♦ for completing work assignments. Students are required to have their own tool set to complete lab assignments. This course is designed to provide students an opportunity develop practical automotive repair skills. Auto Lab provides the student shop time to complete projects and lab assignments required in the Automotive Service program. This is a hands-on, performance based course where students work on diagnosing, maintaining and repairing vehicles. Prior knowledge gained by successful completion of AST 1112 is

required for student success in this class. (Prerequisite: Admission into the Automotive Service program)

Auto Lab III

AST 2931 1.00 credits

This course is designed to provide students an opportunity to develop practical automotive repair skills. Auto Lab provides the student shop time to complete projects required in the Automotive Service program. This is a hands-on, performance based course where students work on diagnosing, maintaining and repairing vehicles. Prior knowledge gained by successful completion of AST 1112 is required for student success in this class. (Prerequisite: Admission into the Automotive Service program)

Advanced Brakes

AST 1622 2.00 credits

This course will cover anti-lock brake systems. Emphasis will be placed on system operation and controls. Diagnosis, repair, and maintenance of the various types of systems will also be included. Prior knowledge gained by successful completion of AST 1112 and AST 1613 is required for student success in this class. (Prerequisite: Admission into the Automotive Service program)

Individualized Study

AST 2951 1 - 8 credits

This course allows the student to design a program of study geared toward individual need and special interest. The student will specialize in developing skills and competencies in selected areas. (Prerequisites: Instructor approval)

Auto Lab IV

AST 2941 1.00 credits

This course is designed to provide students an opportunity to develop practical automotive repair skills. Auto Lab provides the student shop time to complete projects and lab assignments required in the Automotive Service program. This is a hands-on, performance based course where students work on diagnosing, maintaining and repairing vehicles. Prior knowledge gained by the successful completion of AST 1112 or concurrent enrollment in AST 1112 is required for student success in this course. (Prerequisite: Admission into the Automotive Service program)

Advanced Heating and Air Conditioning

AST 2822 2.00 credits

This course covers automatic temperature control systems operation, testing and repairs of vacuum and electrical controls, air flow distribution, and heater system controls. Prior knowledge gained by successful completion of AST 1112 and AST 2812 is required for student success in this class. (Prerequisite: Admission into the Automotive Service program)

Cooperative Occupational Experience

AST 2961 1 - 8 credits

Students will work in a sponsoring automotive service facility. The tasks and activities must be consistent with prior course work. The work schedule will be determined on a case-by-case basis. (Prerequisites: The student must be in the second year of the program and instructor approval is required. Credits are variable up to a maximum of 8)

Biology Department Overview

South Central College is pleased to be adding a Biology Associate in Science (AS) degree. This major allows you to take the first two years of your Biology degree at SCC and then transfer to complete your Bachelor's degree at a 4-year institution. We are proud to have an articulation agreement with Minnesota State University, Mankato to make your transfer an easy one!

Pursuing a career in Biology can be immensely rewarding and exciting. You'll learn to ask questions, make observations, evaluate evidence and solve problems. Studying Biology provides insight on how living things work, how they interact with one another and how they evolve.

There are several career paths you can follow as a Biologist including: research, healthcare, environmental management and conservation as well as biology education.

Department Faculty

Emily Flynn, Renee Guyer, Holly Munch, Shawn Schroeder, Sue Steck

Biology Degrees

Biology AS Degree

Biology

A.S. Degree • 60 Credits

AS 3513



Degree Description

The Biology program at South Central College was developed to provide students with the first two years of a broad based education in Biology and its supporting sciences. It is specifically designed to prepare students to transfer into the junior year of a Biology major at a four year college. This program articulates with the Biology program at Minnesota State University, Mankato.

Admission Dates: Fall and Spring Semester

Offered on the North Mankato Campus

The course requirements listed below are specific to the 2013-2014 school year. If you need to view the program from previous years view our [Catalog Archive](#).

This credential is part of the Biology department. [See the Biology department page for more details](#)

Required Courses (5 Courses)

Complete the following courses:

- [BIOL115](#) General Biology I (4 Credits)
- [BIOL116](#) General Biology II (4 Credits)
- [BIOL211](#) Genetics (4 Credits)
- [BIOL250](#) Biology Capstone (2 Credits)
- [CHEM121](#) Principles of Chemistry II (5 Credits)

Additional Required Liberal Arts and Sciences (5 Courses)

Choose the following courses:

- [PHYS211](#) Principles in Physics I (4 Credits)
- [CHEM120](#) Principles of Chemistry I (5 Credits)
- [ENGL100](#) Composition (4 Credits)
- [COMM110](#) Public Speaking (3 Credits)

Biology Electives (11 Credits)

Choose 11 credits from the following courses:

- [BIOL220](#) Human Anatomy (4 Credits)
- [BIOL230](#) Human Physiology (4 Credits)
- [BIOL270](#) Microbiology (4 Credits)
- [CHEM121](#) Principles of Chemistry II (5 Credits)
- [CHEM220](#) Organic Chemistry I (5 Credits)
- [CHEM221](#) Organic Chemistry II (5 Credits)

Liberal Arts and Sciences Electives

To complete an AS degree in Biology, students must complete 30 MNTC credits from 6 of the 10 MnTC Goal Areas. Courses should be selected in consultation with advisor/faculty.

Select an additional 14 credits to fulfill three other MNTC goal areas (MNTC Goals 2,4,5,6,7,8,9,10).

PLEASE NOTE: All program plans are preliminary and curriculum may change without notice. Your [catalog of record](#) may have different requirements.

Biology - Associate in Science Course Descriptions**General Biology I****BIOL115 4.00 credits**

This course covers biological processes at the cellular and molecular level. It serves as an introduction to macromolecules and metabolism, cell biology, Mendelian genetics, gene expression and development. This course involves a weekly three hour lab. (Prerequisites: Score of 86 or above on the Sentence Skills portion of the Accuplacer test or completion of ENGL 0090 with a grade of C or higher and a score of 50 or above on the College Level Math portion of the Accuplacer test or complete of MATH 0085 with a grade of C or higher) (MNTC 3: Natural Sciences)

General Biology II**BIOL116 4.00 credits**

This course covers biology at the organismal population and system level. It will emphasize organismal diversity, population and community ecology and ecosystems. Students will gain an understanding of how evolutionary advances have occurred among organisms within a kingdom due to natural selection. This course involves a weekly three hour lab. (Prerequisites: Score of 86 or above on the Sentence Skills portion of the Accuplacer test or completion of ENGL 0090 with a grade of C or higher and a score of 50 or above on the College Level Math portion of the Accuplacer test or complete of MATH 0085 with a grade of C or higher) (MNTC 3: Natural Sciences)

Genetics**BIOL211 4.00 credits**

This is an introductory Genetics course which covers the study of biologically inherited traits. It will emphasize Mendelian genetics as well as molecular genetics. Students will explore classical, population and molecular genetics. Students will learn genetics through lecture, solving genetics problems and demonstrating concepts from lecture through laboratory experimentation. (Prerequisites: BIOL 115, 116, CHEM 121) (MNTC 3: Natural Sciences)

Biology Capstone**BIOL250 2.00 credits**

Biology Capstone is a course that is required before completion of an AS degree in Biology. It is a project based course in which students will demonstrate a culmination of the skills developed while at South Central College. The student enrolled in this course will complete a scientific research project and present the findings by writing a research paper and giving a poster presentation. In addition, students may be required to participate in all assessment activities as directed by the instructor and the Biology program. This course should be taken during the last semester before completion of an A.S. degree in Biology. (Prerequisite: Instructor permission or student should be in the last semester before completing an A.S. degree in Biology) (MNTC 1, 3: Communication, Natural Sciences)

Principles of Chemistry II**CHEM121 5.00 credits**

Principles of Chemistry II is the second in a series of Chemistry courses designed for students who plan to major in a scientific or health related field. Topics include kinetics, chemical equilibria, acids and bases, buffers, precipitation reactions, thermodynamics, and electrochemistry. Lab topics reinforce lecture concepts. (Prerequisite: CHEM 120) (MNTC 3: Natural Sciences)

Human Anatomy**BIOL220 4.00 credits**

This course takes an in-depth look at the anatomy of the human body systems. The course emphasizes structure and anatomical function at the cellular, tissue, organ and systemic level. Dysfunctions are included but the body in homeostasis is emphasized. This course includes a lab with dissection. (Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher) (MNTC 3: Natural Sciences).

Human Physiology

BIOL230 4.00 credits

This course provides an in-depth study of the functioning of most body systems, including muscle, nervous, cardiovascular, respiratory, digestive, urinary, and endocrine systems at both the cellular and systemic level. An emphasis is placed on normal physiology, but dysfunction will also be discussed. This course contains a laboratory component. (Prerequisites: Successful completion of BIOL 220 with a grade of C or better AND successful completion of CHEM 108 or CHEM 120 with a grade of C or better) (MNTC 3: Natural Sciences)

Principles of Chemistry II

CHEM121 5.00 credits

Principles of Chemistry II is the second in a series of Chemistry courses designed for students who plan to major in a scientific or health related field. Topics include kinetics, chemical equilibria, acids and bases, buffers, precipitation reactions, thermodynamics, and electrochemistry. Lab topics reinforce lecture concepts. (Prerequisite: CHEM 120) (MNTC 3: Natural Sciences)

Organic Chemistry II

CHEM221 5.00 credits

Course created for eCatalog only.

Principles of Chemistry I

CHEM120 5.00 credits

This course introduces the student to the basic principles of chemistry, including atomic and molecular structure, bonding, chemical reactions, solution chemistry, stoichiometry, thermochemistry, periodicity, and states of matter. Laboratory reinforces lecture concepts. (Prerequisite: MATH 120, CHEM 108 or high school chemistry) (MNTC 3: Natural Sciences)

Public Speaking

Microbiology

BIOL270 4.00 credits

This course is an introduction to the general principles and methods used in the study of microorganisms. It includes a survey of prokaryotic and eukaryotic microorganisms emphasizing bacteria and viruses. Topics include microbial cell structure and function, metabolism, microbial genetics, and the role of microorganisms in disease, immunity, and other selected applied areas. Laboratory techniques include isolating, culturing, and identifying microorganisms. (Prerequisites: CHEM 108 or CHEM 120 or BIOL 225) (MNTC 3: Natural Sciences)

Organic Chemistry I

CHEM220 5.00 credits

Organic Chemistry I is the first course in a two semester sequence which covers the structure, stereochemistry, physical properties, reactivity, reaction mechanisms and synthesis of carbon-containing compounds. Emphasis on alkanes, alkenes, alkynes, alcohols, alkyl halides, aldehydes, ketones, and carboxylic acids and their derivatives. Laboratory experiments will integrate green methods into common synthetic techniques and the preparation and reactions of functional groups. (Prerequisite: CHEM 121)

Principles in Physics I

PHYS211 4.00 credits

This is the first half of a one-year sequence in physics. It covers the general background in algebra-based physics. Topics include classical mechanics, fluid mechanics, wave and sound, thermal physics. Lecture and laboratory. (Prerequisites: MATH 120 and 125, or MATH 130) (MNTC: 3, Natural Sciences)

Composition

ENGL100 4.00 credits

Composition is concerned with developing, through theory and practice, the ability to communicate in written form for personal and professional reasons. Students will develop writing skills, analytical skills, and critical thinking skills. Students will complete readings, papers, grammar exercises, and in-class activities. Students will learn methods of writing informatively and persuasively. (Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher AND a score of 85.5 or higher on the Sentence Skills portion of the Accuplacer test or completion of ENGL 0080 and ENGL 0090 with a grade of C or higher)(MNTC 1: Communication) This course has an online option.

COMM110 3.00 credits

This course develops or improves effective performance in acquiring, evaluating, organizing, and communicating information. Learners develop and apply critical and creative thinking to structuring arguments, making presentations, using multimedia, and supporting each other in impromptu and extemporaneous speaking. Course de-emphasizes competition and stresses personal and workplace effectiveness in communication skills. (Prerequisites: Must have a score of 86 or higher on the Sentence Skills portion of the Accuplacer test or completion of ENGL 0080 and ENGL 0090 with a grade of C or higher) (MNTC 1: Communication)

Child Development Careers Department Overview

The Child Development program is designed to establish foundations in early childhood education, improve the quality of early childhood services, and increase professionalism in the field. Students will learn skills, such as; guidance techniques, health and safety, cultural sensitivity, curriculum planning, enhancing literacy, and interpersonal communication.

Education for early childhood licensure is provided by South Central College according to the Minnesota Department of Human Services requirements. Individuals will be prepared for careers in a variety of early childhood and educational settings. Graduates may pursue positions such as early childhood teachers or assistants, or as paraprofessionals within a school system.

The program is designed to meet the needs of full-time and part-time students. A grade of C or higher is required in Child Development technical courses.

Student Background Studies:

Minnesota law requires that any person who provides services that involve direct contact with patients and residents at a health care or child care facility licensed by the Minnesota Department of Health have a background study conducted by the state. An individual who is disqualified from having direct patient contact as a result of the background study, and whose disqualification is not set aside by the Commissioner of Health, will not be permitted to participate in a clinical placement in a Minnesota licensed health care or child care facility. Failure to participate in a clinical placement required by the academic program could result in ineligibility to qualify for a degree in that program.

Core Competencies

1. Display knowledge of guidance techniques that promote positive adult child relationships.
2. Understand developmental milestones.
3. Demonstrate the ability to choose age appropriate activities; plan, develop and implement lesson plans.
4. Demonstrate knowledge of appropriate physical environments for learning.
5. Demonstrate techniques for observing, recording and analyzing observations.
6. Identify and implement techniques of collaboration with parents, colleagues, children and community services.

Department Faculty

Lynn Michel, Pam Schweim, Darci Stanford

Child Development Careers Degrees

Child Development AS Degree
Administration of Child Care Programs AAS Degree
Child Development AAS Degree
Child Development Diploma
Administration of Child Care Programs - Advanced Certificate
Child Development Certificate

Child Development

A.S. Degree • 60 Credits

AS 3510



Degree Description

The Child Development program is designed to establish foundations in early childhood education, improve the quality of early childhood services, and increase professionalism in the field. Students will learn skills, such as; guidance techniques, health and safety, cultural sensitivity, curriculum planning, enhancing literacy, and interpersonal communication..

Admission Dates: Fall and Spring Semester

Offered on the North Mankato Campus

The course requirements listed below are specific to the 2013-2014 school year. If you need to view the program from previous years view our [Catalog Archive](#).

This credential is part of the Child Development Careers department. [See the Child Development Careers department page for more details](#)

Required Technical Courses (11 Courses)

Complete the following courses:

- [CDEV1210](#) Child Growth and Development (3 Credits)
- [CDEV1220](#) Health, Safety & Nutrition (3 Credits)
- [CDEV1240](#) Working with Diverse Families and Children (3 Credits)
- [CDEV1260](#) Observation & Assessment 1 (1 Credit)
- [CDEV1270](#) Learning Environment & Curriculum (3 Credits)
- [CDEV1310](#) Infant-Toddler Development and Learning Experiences (3 Credits)
- [CDEV2210](#) Observation and Assessment 2 (2 Credits)
- [CDEV2510](#) Internship 1 (3 Credits)
- [CDEV2310](#) Children with Differing Abilities (3 Credits)
- [CDEV2530](#) Curriculum Planning (3 Credits)
- [CDEV2560](#) Language and Literacy Development (3 Credits)

Liberal Arts and Sciences Electives

Select an additional 19 credits to fulfill four other MNTC Goal Areas (MNTC Goals 2,3,5,6,7,8,9,10).

Required Liberal Arts & Sciences (3 Courses)

To complete the Child Development AS Degree, students must complete 30 MNTC credits from 6 of the 10 MNTC Goal areas.

The following courses are required:

- [ENGL100](#) Composition (4 Credits)
- [COMM110](#) Public Speaking (3 Credits)
- [MATH120](#) College Algebra (4 Credits)

PLEASE NOTE: All program plans are preliminary and curriculum may change without notice. Your [catalog of record](#) may have different requirements.

Child Development - Associate in Science Degree Course Descriptions**Child Growth and Development****CDEV1210 3.00 credits**

This course is the first in a series of courses that is required for a certificate, diploma, or degree in Child Development Careers. The course provides an overview of typical and atypical child development across cultures, from prenatal through school age. It includes physical, social, emotional, language, cognitive, aesthetic, and identity/individual development. This course integrates developmental theory with appropriate practices in a variety of early childhood care and educational settings. (Prerequisites: None)

Working with Diverse Families and Children**CDEV1240 3.00 credits**

Examines how to work with many types of families. Investigates the importance of the family/school partnership, study methods of effectively communicating with families, and identify community organizations and networks that support families. Various classroom strategies will be explored emphasizing culturally and linguistically appropriate anti-bias approaches supporting all children in becoming competent members of a diverse society. (Prerequisites: None)

Learning Environment & Curriculum**CDEV1270 3.00 credits**

This course presents an overview of skills to provide appropriate learning environments for young children. It examines the role of the teacher in providing learning experiences to meet each child's needs, capabilities, and interests, and ways to implement the principles of developmentally appropriate practices. (Prerequisite: None)

Observation and Assessment 2**CDEV2210 2.00 credits**

This course focuses on the appropriate use of assessment and observation strategies to document development, growth, play and learning to join with families and professionals in promoting children's success. Recording strategies, rating

Health, Safety & Nutrition**CDEV1220 3.00 credits**

This course will guide the student in obtaining skills needed to establish and maintain a physically and psychologically safe and healthy learning environment for young children. Topics include preventing illness and accidents, handling emergencies, providing health, safety, and nutrition educational experiences, meeting children's basic nutritional needs, child abuse, and current health-related issues. This course does NOT include CPR or first aid certification.

Observation & Assessment 1**CDEV1260 1.00 credits**

This course introduces students to the most common observation methods used in early childhood programs. It will explore the fundamentals of using observation and evaluation techniques. (Prerequisites: None)

Infant-Toddler Development and Learning Experiences**CDEV1310 3.00 credits**

This course will examine infant and toddler development as it applies to early childhood educational settings. Students will integrate strategies that support diversity and anti-bias perspectives, analyze development, correlate prenatal conditions with development, summarize child development theories, analyze the role of heredity and the environment, examine research-based curriculum models, and examine culturally and developmentally appropriate environments for infants and toddlers. (Prerequisite: CDEV 1210)

Internship 1**CDEV2510 3.00 credits**

This course provides an opportunity to apply knowledge and skill in an actual child development setting. Students will observe and assess children's behavior, facilitate free choice play, implement adult-directed learning experiences, and

systems, multiple assessment tools and portfolios are explored. There will be a focus on increasing objectivity in observing and interpreting children's behavior, observing developmental characteristics and increasing the awareness of normal patterns of behavior. (Prerequisite: CDEV 1260)

Children with Differing Abilities

CDEV2310 3.00 credits

This course examines the development of children with differing abilities. Students will integrate strategies that support diversity and anti-bias perspectives, providing inclusive programs for children, apply legal and ethical requirements including ADA and IDEA (Individuals with Disabilities Education Act). Exploration of differing abilities of children with physical, cognitive, health/medical, communication, and/or emotional/behavioral disorders, adapt curriculum to meet the needs of children with developmental differences, and cultivate partnerships with families who have children with differing abilities. (Prerequisites: CDEV 1210)

Language and Literacy Development

CDEV2560 3.00 credits

This course provides an overview of language and literacy learning experiences in home, school, or center-based settings. Students integrate knowledge of child development, learning environments, and teaching methods to promote literacy, conversation, literature, literacy, and bilingualism. (Prerequisite: CDEV 1210)

Public Speaking

COMM110 3.00 credits

This course develops or improves effective performance in acquiring, evaluating, organizing, and communicating information. Learners develop and apply critical and creative thinking to structuring arguments, making presentations, using multimedia, and supporting each other in impromptu and extemporaneous speaking. Course de-emphasizes competition and stresses personal and workplace effectiveness in communication skills. (Prerequisites: Must have a score of 86 or higher on the Sentence Skills portion of the Accuplacer test or completion of ENGL 0080 and ENGL 0090 with a grade of C or higher) (MNTC 1: Communication)

maintain professional relationships. (Prerequisites: CDEV 1340 or concurrent)

Curriculum Planning

CDEV2530 3.00 credits

This course provides an advanced level of curriculum planning. Emphasis is on organizing, implementing, and evaluating developmentally appropriate curricula. (Prerequisite: CDEV 1270)

Composition

ENGL100 4.00 credits

Composition is concerned with developing, through theory and practice, the ability to communicate in written form for personal and professional reasons. Students will develop writing skills, analytical skills, and critical thinking skills. Students will complete readings, papers, grammar exercises, and in-class activities. Students will learn methods of writing informatively and persuasively. (Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher AND a score of 85.5 or higher on the Sentence Skills portion of the Accuplacer test or completion of ENGL 0080 and ENGL 0090 with a grade of C or higher)(MNTC 1: Communication) This course has an online option.

College Algebra

MATH120 4.00 credits

This course is mainly concerned with functions, most of which are algebraic. It begins with a general treatment of equations and inequalities and then proceeds to cover linear functions, quadratic functions, other polynomial and rational functions, piecewise functions, equations involving radicals and absolute values, logarithms and exponentials, systems of equations and inequalities, permutations and combinations. (Prerequisites: Two years of high school algebra AND completion of MATH 0085 with a grade of C or higher, or a score of 75.5 on the Elementary Algebra portion of the Accuplacer test AND a score of 49.5 or higher on the College Level Math portion of the Accuplacer test) (MNTC 4: Mathematical/Logical Reasoning)

Administration of Child Care Programs

A.A.S. Degree • 60 Credits

AAS 2512/AAS 3512



Degree Description

A manager of an early childhood or afterschool program has complex responsibilities that require a wide range of knowledge and skills. The Administration of Child Care Programs is designed to build students knowledge and abilities to adequately and effectively evaluate the qualifications and performance of employees, develop sound personnel practices, oversee the purchase, care and maintenance of equipment, develop and evaluate sound curricula, build and maintain professional relationships with parents, staff and colleagues, and respond sensitively to the diverse needs of children, their parents, and staff.

The skills obtained in this degree will prepare students for career opportunities such as a Director, Assistant Director, Site Coordinator, Early Childhood Teacher or Paraprofessional.

Admission Dates: Fall and Spring Semester

Offered on the Faribault and North Mankato Campuses

The course requirements listed below are specific to the 2013-2014 school year. If you need to view the program from previous years view our [Catalog Archive](#).

This credential is part of the Child Development Careers department. [See the Child Development Careers department page for more details](#)

Required Technical Courses (18 Courses)

Complete the following courses:

- [CDEV1210](#) Child Growth and Development (3 Credits)
- [CDEV1220](#) Health, Safety & Nutrition (3 Credits)
- [CDEV1230](#) Guiding Children's Behavior (3 Credits)
- [CDEV1240](#) Working with Diverse Families and Children (3 Credits)
- [CDEV1260](#) Observation & Assessment 1 (1 Credit)
- [CDEV1270](#) Learning Environment & Curriculum (3 Credits)
- [CDEV1310](#) Infant-Toddler Development and Learning Experiences (3 Credits)
- [CDEV1312](#) Preschool Development and Learning Experiences (3 Credits)
- [CDEV2210](#) Observation and Assessment 2 (2 Credits)
- [CDEV2310](#) Children with Differing Abilities (3 Credits)
- [CDEV2510](#) Internship 1 (3 Credits)
- [MKT 1900](#) Principles of Management (3 Credits)
- [MKT 1930](#) Human Resource Management (3 Credits)
-
- [ACCT1814](#) Payroll Accounting (3 Credits)
- Or
- [ACCT1810](#) Financial Accounting (4 Credits)
-
- [CDEV2940](#) Managing Multiple Sites (1 Credit)
- [CDEV2990](#) Practicum Project (1 Credit)
-
- [HLTH1950](#) CPR (1 Credit)
- Or
- [HLTH1952](#) First Aid (1 Credit)
- Or
- [HLTH1954](#) Safety (1 Credit)

Liberal Arts and Sciences - MNTC Goal 1 (1 Course)

Select one ENGL or COMM course from MNTC Goal 1.

PLEASE NOTE: All program plans are preliminary and curriculum may change without notice. Your [catalog of record](#) may have different requirements.

Liberal Arts and Sciences - MNTC Goal 5 (1 Course)

Select one SOC or PSYC course from MNTC Goal 5.

Additional Liberal Arts and Sciences (9-11 Credits)

To complete an AAS Degree, students must complete 15 MNTC credits from 3 of the 10 MNTC goal areas. At least one course must be from outside MNTC Goal Areas 1 and 5.

Administration of Child Care Programs - Associate of Applied Science Degree Course Descriptions**Child Growth and Development****CDEV1210 3.00 credits**

This course is the first in a series of courses that is required for a certificate, diploma, or degree in Child Development Careers. The course provides an overview of typical and atypical child development across cultures, from prenatal through school age. It includes physical, social, emotional, language, cognitive, aesthetic, and identity/individual development. This course integrates developmental theory with appropriate practices in a variety of early childhood care and educational settings. (Prerequisites: None)

Guiding Children's Behavior**CDEV1230 3.00 credits**

This course examines positive child guidance techniques for individual and group situations. Emphasis on problem prevention and positive guidance strategies, communication, setting limits, problem solving and behavior modification. Examines ways to establish supportive relationships with children and guide them in order to enhance learning, development, and well-being. (Prerequisites: None)

Observation & Assessment 1**CDEV1260 1.00 credits**

This course introduces students to the most common observation methods used in early childhood programs. It will explore the fundamentals of using observation and evaluation techniques. (Prerequisites: None)

Infant-Toddler Development and Learning Experiences**CDEV1310 3.00 credits**

This course will examine infant and toddler development as it applies to early childhood educational settings. Students will integrate strategies that support diversity and anti-bias perspectives, analyze development, correlate prenatal conditions with development, summarize child development theories, analyze the role of heredity and the environment, examine research-based curriculum models, and examine

Health, Safety & Nutrition**CDEV1220 3.00 credits**

This course will guide the student in obtaining skills needed to establish and maintain a physically and psychologically safe and healthy learning environment for young children. Topics include preventing illness and accidents, handling emergencies, providing health, safety, and nutrition educational experiences, meeting children's basic nutritional needs, child abuse, and current health-related issues. This course does NOT include CPR or first aid certification.

Working with Diverse Families and Children**CDEV1240 3.00 credits**

Examines how to work with many types of families. Investigates the importance of the family/school partnership, study methods of effectively communicating with families, and identify community organizations and networks that support families. Various classroom strategies will be explored emphasizing culturally and linguistically appropriate anti-bias approaches supporting all children in becoming competent members of a diverse society. (Prerequisites: None)

Learning Environment & Curriculum**CDEV1270 3.00 credits**

This course presents an overview of skills to provide appropriate learning environments for young children. It examines the role of the teacher in providing learning experiences to meet each child's needs, capabilities, and interests, and ways to implement the principles of developmentally appropriate practices. (Prerequisite: None)

Preschool Development and Learning Experiences**CDEV1312 3.00 credits**

This course provides an overview of preschool theory and development in home or center-based settings. Students will integrate knowledge of developmental needs, developmentally appropriate environments, effective caregiving, teaching strategies, and observation methods. (Prerequisite: CDEV 1210)

culturally and developmentally appropriate environments for infants and toddlers. (Prerequisite: CDEV 1210)

Observation and Assessment 2

CDEV2210 2.00 credits

This course focuses on the appropriate use of assessment and observation strategies to document development, growth, play and learning to join with families and professionals in promoting children's success. Recording strategies, rating systems, multiple assessment tools and portfolios are explored. There will be a focus on increasing objectivity in observing and interpreting children's behavior, observing developmental characteristics and increasing the awareness of normal patterns of behavior. (Prerequisite: CDEV 1260)

Internship 1

CDEV2510 3.00 credits

This course provides an opportunity to apply knowledge and skill in an actual child development setting. Students will observe and assess children's behavior, facilitate free choice play, implement adult-directed learning experiences, and maintain professional relationships. (Prerequisites: CDEV 1340 or concurrent)

Human Resource Management

MKT 1930 3.00 credits

This course focuses on human resource management issues. The course covers the techniques and legal aspects of recruiting, hiring, firing, promotion, documentation, evaluation and other areas essential to the personnel function. (Prerequisites: None)

Financial Accounting

ACCT1810 4.00 credits

This course covers the fundamental accounting concepts and principles which are used in a business environment. Topics include recording transactions related to internal control, receivables, short-term investments, inventories, plant and equipment, intangible assets, and long-term investments. (Prerequisites: None)

Practicum Project

CDEV2990 1.00 credits

During this project you will gain a broad view of program quality from an organizational perspective, learn how to

Children with Differing Abilities

CDEV2310 3.00 credits

This course examines the development of children with differing abilities. Students will integrate strategies that support diversity and anti-bias perspectives, providing inclusive programs for children, apply legal and ethical requirements including ADA and IDEA (Individuals with Disabilities Education Act). Exploration of differing abilities of children with physical, cognitive, health/medical, communication, and/or emotional/behavioral disorders, adapt curriculum to meet the needs of children with developmental differences, and cultivate partnerships with families who have children with differing abilities. (Prerequisites: CDEV 1210)

Principles of Management

MKT 1900 3.00 credits

This course will introduce the student to the responsibilities and roles of managers and supervisors. Course focus will be on topics related to the management functions of planning, organizing, leading and controlling. Project management, the decision-making process, organizational structures and team skills will be explored. Students will also be exposed to financial, economic and productivity tools for use in management.

Payroll Accounting

ACCT1814 3.00 credits

This course covers various state and federal laws pertaining to the computation and payment of salaries and wages. Topics include preparation of employment records, payroll registers, time cards, employee earnings records, and state and federal reports. In addition, we will explore setting up and maintaining a payroll system using Quickbooks. (Prerequisite: None)

Managing Multiple Sites

CDEV2940 1.00 credits

This course will examine challenges unique to managing multiple sites. It provides practical information and tools to help managers close the communication gaps created by distance, and get peak performance from employees they don't see everyday. (Prerequisites: CDEV majors only)

CPR

HLTH1950 1.00 credits

This course covers the skills of infant, child and adult single and two rescue CPR as well as relief of foreign body airway

administer and score the Program Administration Scale, learn how to analyze the results of the PAS and structure program improvements based on these results. (Prerequisites: CDEV 2910, 2920, 2930, 2940)

obstruction procedures for infant, child and adult. Automated external defibrillators, bag-valve masks and pocket masks are also used. Signs and symptoms of stroke and heart attack are also discussed. This course meets the criteria of the American Heart Association 2010 Guidelines for CPR and ECC.

First Aid

HLTH1952 1.00 credits

This course includes emergency care training for initial treatment of illness and injury. Patient assessment, bleeding control, shock management, soft tissue injury, orthopedic injury, diabetic problems, seizures, poisons, heat exposure, and cold exposure are some of the topics covered in this course. This course is appropriate for anyone who may need to render immediate care. The items covered in the course are just as applicable to an industrial or a business work setting, as they are to a daycare facility, or even at home. (Prerequisite: None).

Safety

HLTH1954 1.00 credits

This course includes basic OSHA safety standards. Hearing protection, eye protection, back injuries, lockout/tagout procedures, Hazard Communication standard, bloodborne pathogens, and substance abuse in the workplace are examples of topics covered in this course. The consequences of disregarding safety practices are explored. This course is appropriate for individuals who may be entering a new vocation. The topics covered include items from the health care realm to items concerning business, manufacturing, and industrial issues. (Prerequisite: None)

Child Development

A.A.S. Degree • 60 Credits

AAS 2507/AAS 3507



Degree Description

Education for early childhood licensure is provided by South Central College according to the Minnesota Department of Human Services requirements. Individuals will be prepared for careers in a variety of early childhood and educational settings. Graduates may pursue positions such as early childhood teachers or assistants, or as paraprofessionals within a school system.

Graduates receiving an A.A.S. Degree in Child Development Careers may transfer the degree to Metropolitan State University to pursue a B.A.S. Degree in the Early Childhood Studies, Psychology Department. This articulation agreement may be revised when program changes are made in the B.A.S. Degree in the Early Childhood Studies, Psychology Department at Metropolitan State University.

Admission Dates: Fall and Spring Semester

Offered on the Faribault and North Mankato Campuses

The course requirements listed below are specific to the 2013-2014 school year. If you need to view the program from previous years view our [Catalog Archive](#).

This credential is part of the Child Development Careers department. [See the Child Development Careers department page for more details](#)

Required Technical Courses (16 Courses)

Complete the following courses:

- [CDEV1210](#) Child Growth and Development (3 Credits)
- [CDEV1220](#) Health, Safety & Nutrition (3 Credits)
- [CDEV1230](#) Guiding Children's Behavior (3 Credits)
- [CDEV1240](#) Working with Diverse Families and Children (3 Credits)
- [CDEV1260](#) Observation & Assessment 1 (1 Credit)
- [CDEV1270](#) Learning Environment & Curriculum (3 Credits)
- [CDEV1310](#) Infant-Toddler Development and Learning Experiences (3 Credits)
- [CDEV1312](#) Preschool Development and Learning Experiences (3 Credits)
- [CDEV2210](#) Observation and Assessment 2 (2 Credits)
- [CDEV2510](#) Internship 1 (3 Credits)
- [CDEV2310](#) Children with Differing Abilities (3 Credits)
- [CDEV2520](#) Children with Challenging Behaviors (3 Credits)
- [CDEV2530](#) Curriculum Planning (3 Credits)

Liberal Arts and Sciences - Sociology or Psychology (1 Course)

Select at least one course from MNTC Goal Area 5 in PSYC or SOC.

PLEASE NOTE: All program plans are preliminary and curriculum may change without notice. Your [catalog of record](#) may have different requirements.

[CDEV2550](#) Cognitive Development (3 Credits)

[CDEV2560](#) Language and Literacy Development (3 Credits)

[CDEV2590](#) Social-Emotional Development and Learning (3 Credits)

Liberal Arts and Sciences - Communication (1 Course)

Select at least one ENGL or COMM course from MNTC Goal Area 1.

Required Liberal Arts & Sciences

To complete an AAS Degree, students must complete 15 MNTC credits from 3 of the 10 MNTC goal areas.

Child Development - Associate of Applied Science Degree Course Descriptions**Child Growth and Development****CDEV1210 3.00 credits**

This course is the first in a series of courses that is required for a certificate, diploma, or degree in Child Development Careers. The course provides an overview of typical and atypical child development across cultures, from prenatal through school age. It includes physical, social, emotional, language, cognitive, aesthetic, and identity/individual development. This course integrates developmental theory with appropriate practices in a variety of early childhood care and educational settings. (Prerequisites: None)

Guiding Children's Behavior**CDEV1230 3.00 credits**

This course examines positive child guidance techniques for individual and group situations. Emphasis on problem prevention and positive guidance strategies, communication, setting limits, problem solving and behavior modification. Examines ways to establish supportive relationships with children and guide them in order to enhance learning, development, and well-being. (Prerequisites: None)

Observation & Assessment 1**CDEV1260 1.00 credits**

This course introduces students to the most common observation methods used in early childhood programs. It will explore the fundamentals of using observation and evaluation techniques. (Prerequisites: None)

Infant-Toddler Development and Learning Experiences**CDEV1310 3.00 credits**

This course will examine infant and toddler development as it applies to early childhood educational settings. Students will integrate strategies that support diversity and anti-bias perspectives, analyze development, correlate prenatal conditions with development, summarize child development theories, analyze the role of heredity and the environment, examine research-based curriculum models, and examine

Health, Safety & Nutrition**CDEV1220 3.00 credits**

This course will guide the student in obtaining skills needed to establish and maintain a physically and psychologically safe and healthy learning environment for young children. Topics include preventing illness and accidents, handling emergencies, providing health, safety, and nutrition educational experiences, meeting children's basic nutritional needs, child abuse, and current health-related issues. This course does NOT include CPR or first aid certification.

Working with Diverse Families and Children**CDEV1240 3.00 credits**

Examines how to work with many types of families. Investigates the importance of the family/school partnership, study methods of effectively communicating with families, and identify community organizations and networks that support families. Various classroom strategies will be explored emphasizing culturally and linguistically appropriate anti-bias approaches supporting all children in becoming competent members of a diverse society. (Prerequisites: None)

Learning Environment & Curriculum**CDEV1270 3.00 credits**

This course presents an overview of skills to provide appropriate learning environments for young children. It examines the role of the teacher in providing learning experiences to meet each child's needs, capabilities, and interests, and ways to implement the principles of developmentally appropriate practices. (Prerequisite: None)

Preschool Development and Learning Experiences**CDEV1312 3.00 credits**

This course provides an overview of preschool theory and development in home or center-based settings. Students will integrate knowledge of developmental needs, developmentally appropriate environments, effective caregiving, teaching strategies, and observation methods. (Prerequisite: CDEV 1210)

culturally and developmentally appropriate environments for infants and toddlers. (Prerequisite: CDEV 1210)

Observation and Assessment 2

CDEV2210 2.00 credits

This course focuses on the appropriate use of assessment and observation strategies to document development, growth, play and learning to join with families and professionals in promoting children's success. Recording strategies, rating systems, multiple assessment tools and portfolios are explored. There will be a focus on increasing objectivity in observing and interpreting children's behavior, observing developmental characteristics and increasing the awareness of normal patterns of behavior. (Prerequisite: CDEV 1260)

Children with Differing Abilities

CDEV2310 3.00 credits

This course examines the development of children with differing abilities. Students will integrate strategies that support diversity and anti-bias perspectives, providing inclusive programs for children, apply legal and ethical requirements including ADA and IDEA (Individuals with Disabilities Education Act). Exploration of differing abilities of children with physical, cognitive, health/medical, communication, and/or emotional/behavioral disorders, adapt curriculum to meet the needs of children with developmental differences, and cultivate partnerships with families who have children with differing abilities. (Prerequisites: CDEV 1210)

Curriculum Planning

CDEV2530 3.00 credits

This course provides an advanced level of curriculum planning. Emphasis is on organizing, implementing, and evaluating developmentally appropriate curricula. (Prerequisite: CDEV 1270)

Language and Literacy Development

CDEV2560 3.00 credits

This course provides an overview of language and literacy learning experiences in home, school, or center-based settings. Students integrate knowledge of child development, learning environments, and teaching methods to promote literacy, conversation, literature, literacy, and bilingualism. (Prerequisite: CDEV 1210)

Internship 1

CDEV2510 3.00 credits

This course provides an opportunity to apply knowledge and skill in an actual child development setting. Students will observe and assess children's behavior, facilitate free choice play, implement adult-directed learning experiences, and maintain professional relationships. (Prerequisites: CDEV 1340 or concurrent)

Children with Challenging Behaviors

CDEV2520 3.00 credits

This course supports students' understanding of children's behavioral problems and identifies intervention strategies to prevent and resolve problem behaviors. Effective behavior modification techniques and designing behavior plans will be explored. (Prerequisite: CDEV 1230)

Cognitive Development

CDEV2550 3.00 credits

This course provides an overview of cognitive and multimedia learning experiences in home, school or center-based settings. Students integrate knowledge of child development, learning environments, and teaching methods to promote curiosity, attention, perception, memory, problem solving, logical thinking, and media literacy. (Prerequisite: CDEV 1210)

Social-Emotional Development and Learning

CDEV2590 3.00 credits

This course provides an overview of social-emotional learning experiences. Students integrate knowledge of child development, learning environments, and teaching methods to promote emotional development, moral development, self concept, self esteem, social skills, diversity awareness, and social studies. (Prerequisite: CDEV 1210)

Child Development

Diploma • 33 Credits

DIP 2506/DIP 3506



Degree Description

The Child Development program is designed to establish foundations in early childhood education, improve the quality of early childhood services, and increase professionalism in the field. Students will learn skills, such as; guidance techniques, health and safety, cultural sensitivity, curriculum planning, enhancing literacy, and interpersonal communication.

Admission Dates: Fall and Spring Semester

Offered on the Faribault and North Mankato Campuses

The course requirements listed below are specific to the 2013-2014 school year. If you need to view the program from previous years view our [Catalog Archive](#).

This credential is part of the Child Development Careers department. [See the Child Development Careers department page for more details](#)

Required Technical Courses (10 Courses)

Complete the following courses:

- [CDEV1210](#) Child Growth and Development (3 Credits)
- [CDEV1220](#) Health, Safety & Nutrition (3 Credits)
- [CDEV1230](#) Guiding Children's Behavior (3 Credits)
- [CDEV1240](#) Working with Diverse Families and Children (3 Credits)
- [CDEV1260](#) Observation & Assessment 1 (1 Credit)
- [CDEV1270](#) Learning Environment & Curriculum (3 Credits)
- [CDEV1310](#) Infant-Toddler Development and Learning Experiences (3 Credits)
- [CDEV1312](#) Preschool Development and Learning Experiences (3 Credits)
- [CDEV2210](#) Observation and Assessment 2 (2 Credits)
- [CDEV2510](#) Internship 1 (3 Credits)

Required Liberal Arts & Sciences (6 Credits)

Students must complete 6 MnTC credits from courses in MnTC goal areas 1-10. Courses must be selected consultation with advisor/faculty.

PLEASE NOTE: All program plans are preliminary and curriculum may change without notice. Your [catalog of record](#) may have different requirements.

Child Development - Diploma of Occupational Proficiency Course Descriptions**Child Growth and Development****CDEV1210 3.00 credits**

This course is the first in a series of courses that is required for a certificate, diploma, or degree in Child Development Careers. The course provides an overview of typical and atypical child development across cultures, from prenatal through school age. It includes physical, social, emotional, language, cognitive, aesthetic, and identity/individual development. This course integrates developmental theory with appropriate practices in a variety of early childhood care and educational settings. (Prerequisites: None)

Guiding Children's Behavior**CDEV1230 3.00 credits**

This course examines positive child guidance techniques for individual and group situations. Emphasis on problem prevention and positive guidance strategies, communication, setting limits, problem solving and behavior modification. Examines ways to establish supportive relationships with children and guide them in order to enhance learning, development, and well-being. (Prerequisites: None)

Observation & Assessment 1**CDEV1260 1.00 credits**

This course introduces students to the most common observation methods used in early childhood programs. It will explore the fundamentals of using observation and evaluation techniques. (Prerequisites: None)

Infant-Toddler Development and Learning Experiences**CDEV1310 3.00 credits**

This course will examine infant and toddler development as it applies to early childhood educational settings. Students will integrate strategies that support diversity and anti-bias perspectives, analyze development, correlate prenatal conditions with development, summarize child development theories, analyze the role of heredity and the environment, examine research-based curriculum models, and examine

Health, Safety & Nutrition**CDEV1220 3.00 credits**

This course will guide the student in obtaining skills needed to establish and maintain a physically and psychologically safe and healthy learning environment for young children. Topics include preventing illness and accidents, handling emergencies, providing health, safety, and nutrition educational experiences, meeting children's basic nutritional needs, child abuse, and current health-related issues. This course does NOT include CPR or first aid certification.

Working with Diverse Families and Children**CDEV1240 3.00 credits**

Examines how to work with many types of families. Investigates the importance of the family/school partnership, study methods of effectively communicating with families, and identify community organizations and networks that support families. Various classroom strategies will be explored emphasizing culturally and linguistically appropriate anti-bias approaches supporting all children in becoming competent members of a diverse society. (Prerequisites: None)

Learning Environment & Curriculum**CDEV1270 3.00 credits**

This course presents an overview of skills to provide appropriate learning environments for young children. It examines the role of the teacher in providing learning experiences to meet each child's needs, capabilities, and interests, and ways to implement the principles of developmentally appropriate practices. (Prerequisite: None)

Preschool Development and Learning Experiences**CDEV1312 3.00 credits**

This course provides an overview of preschool theory and development in home or center-based settings. Students will integrate knowledge of developmental needs, developmentally appropriate environments, effective caregiving, teaching strategies, and observation methods. (Prerequisite: CDEV 1210)

culturally and developmentally appropriate environments for infants and toddlers. (Prerequisite: CDEV 1210)

Observation and Assessment 2

CDEV2210 2.00 credits

This course focuses on the appropriate use of assessment and observation strategies to document development, growth, play and learning to join with families and professionals in promoting children's success. Recording strategies, rating systems, multiple assessment tools and portfolios are explored. There will be a focus on increasing objectivity in observing and interpreting children's behavior, observing developmental characteristics and increasing the awareness of normal patterns of behavior. (Prerequisite: CDEV 1260)

Internship 1

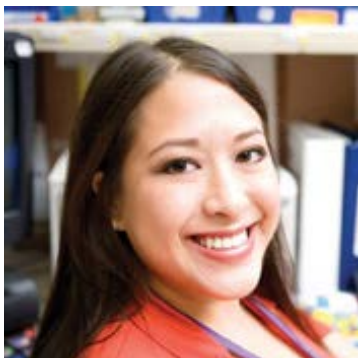
CDEV2510 3.00 credits

This course provides an opportunity to apply knowledge and skill in an actual child development setting. Students will observe and assess children's behavior, facilitate free choice play, implement adult-directed learning experiences, and maintain professional relationships. (Prerequisites: CDEV 1340 or concurrent)

Administration of Child Care Programs

Certificate • 11 Credits

CERT2511/CERT3511



Degree Description

A manager of an early childhood or afterschool program has complex responsibilities that require a wide range of knowledge and skills. The Administration of Child Care Programs advanced certificate is designed to build students knowledge and abilities to adequately and effectively evaluate the qualifications and performance of employees, develop sound personnel practices, oversee the purchase, care and maintenance of equipment, develop and evaluate sound curricula, build and maintain professional relationships with parents, staff and colleagues, and respond sensitively to the diverse needs of children, their parents, and staff. To be enrolled in the Advanced Certificate students must have 17 credits in Child Development Careers, a related field, or advisor approval.

A National Association for the Education of Young Children (NAEYC) Approved Director's Credential.

Admission Dates: Fall and Spring Semester

Offered on the Faribault and North Mankato Campuses

The course requirements listed below are specific to the 2013-2014 school year. If you need to view the program from previous years view our [Catalog Archive](#).

This credential is part of the Child Development Careers department. [See the Child Development Careers department page for more details](#)

Required Technical Courses (5 Courses)

[MKT 1900](#) Principles of Management (3 Credits)

[MKT 1930](#) Human Resource Management (3 Credits)

[ACCT1814](#) Payroll Accounting (3 Credits)

Or

[ACCT1810](#) Financial Accounting (4 Credits)

[CDEV2940](#) Managing Multiple Sites (1 Credit)

[CDEV2990](#) Practicum Project (1 Credit)

PLEASE NOTE: All program plans are preliminary and curriculum may change without notice. Your [catalog of record](#) may have different requirements.

Administration of Child Care Programs - Advanced - Certificate of Training Course Descriptions**Principles of Management****MKT 1900 3.00 credits**

This course will introduce the student to the responsibilities and roles of managers and supervisors. Course focus will be on topics related to the management functions of planning, organizing, leading and controlling. Project management, the decision-making process, organizational structures and team skills will be explored. Students will also be exposed to financial, economic and productivity tools for use in management.

Payroll Accounting**ACCT1814 3.00 credits**

This course covers various state and federal laws pertaining to the computation and payment of salaries and wages. Topics include preparation of employment records, payroll registers, time cards, employee earnings records, and state and federal reports. In addition, we will explore setting up and maintaining a payroll system using Quickbooks. (Prerequisite: None)

Managing Multiple Sites**CDEV2940 1.00 credits**

This course will examine challenges unique to managing multiple sites. It provides practical information and tools to help managers close the communication gaps created by distance, and get peak performance from employees they don't see everyday. (Prerequisites: CDEV majors only)

Human Resource Management**MKT 1930 3.00 credits**

This course focuses on human resource management issues. The course covers the techniques and legal aspects of recruiting, hiring, firing, promotion, documentation, evaluation and other areas essential to the personnel function. (Prerequisites: None)

Financial Accounting**ACCT1810 4.00 credits**

This course covers the fundamental accounting concepts and principles which are used in a business environment. Topics include recording transactions related to internal control, receivables, short-term investments, inventories, plant and equipment, intangible assets, and long-term investments. (Prerequisites: None)

Practicum Project**CDEV2990 1.00 credits**

During this project you will gain a broad view of program quality from an organizational perspective, learn how to administer and score the Program Administration Scale, learn how to analyze the results of the PAS and structure program improvements based on these results. (Prerequisites: CDEV 2910, 2920, 2930, 2940)

Child Development

Certificate • 16 Credits

CERT2505/CERT3508



Degree Description

The Child Development program is designed to establish foundations in early childhood education, improve the quality of early childhood services, and increase professionalism in the field. Students will learn skills, such as; guidance techniques, health and safety, cultural sensitivity, curriculum planning, enhancing literacy, and interpersonal communication.

Admission Dates: Fall and Spring Semester

Offered on the Faribault and North Mankato Campuses

The course requirements listed below are specific to the 2013-2014 school year. If you need to view the program from previous years view our [Catalog Archive](#).

This credential is part of the Child Development Careers department. [See the Child Development Careers department page for more details](#)

Required Technical Courses (6 Courses)

Choose the following courses

[CDEV1210](#) Child Growth and Development (3 Credits)

[CDEV1220](#) Health, Safety & Nutrition (3 Credits)

[CDEV1230](#) Guiding Children's Behavior (3 Credits)

[CDEV1240](#) Working with Diverse Families and Children (3 Credits)

[CDEV1260](#) Observation & Assessment 1 (1 Credit)

[CDEV1270](#) Learning Environment & Curriculum (3 Credits)

PLEASE NOTE: All program plans are preliminary and curriculum may change without notice. Your [catalog of record](#) may have different requirements.

Child Development - Certificate of Training Course Descriptions**Child Growth and Development****CDEV1210 3.00 credits**

This course is the first in a series of courses that is required for a certificate, diploma, or degree in Child Development Careers. The course provides an overview of typical and atypical child development across cultures, from prenatal through school age. It includes physical, social, emotional, language, cognitive, aesthetic, and identity/individual development. This course integrates developmental theory with appropriate practices in a variety of early childhood care and educational settings. (Prerequisites: None)

Guiding Children's Behavior**CDEV1230 3.00 credits**

This course examines positive child guidance techniques for individual and group situations. Emphasis on problem prevention and positive guidance strategies, communication, setting limits, problem solving and behavior modification. Examines ways to establish supportive relationships with children and guide them in order to enhance learning, development, and well-being. (Prerequisites: None)

Observation & Assessment 1**CDEV1260 1.00 credits**

This course introduces students to the most common observation methods used in early childhood programs. It will explore the fundamentals of using observation and evaluation techniques. (Prerequisites: None)

Health, Safety & Nutrition**CDEV1220 3.00 credits**

This course will guide the student in obtaining skills needed to establish and maintain a physically and psychologically safe and healthy learning environment for young children. Topics include preventing illness and accidents, handling emergencies, providing health, safety, and nutrition educational experiences, meeting children's basic nutritional needs, child abuse, and current health-related issues. This course does NOT include CPR or first aid certification.

Working with Diverse Families and Children**CDEV1240 3.00 credits**

Examines how to work with many types of families. Investigates the importance of the family/school partnership, study methods of effectively communicating with families, and identify community organizations and networks that support families. Various classroom strategies will be explored emphasizing culturally and linguistically appropriate anti-bias approaches supporting all children in becoming competent members of a diverse society. (Prerequisites: None)

Learning Environment & Curriculum**CDEV1270 3.00 credits**

This course presents an overview of skills to provide appropriate learning environments for young children. It examines the role of the teacher in providing learning experiences to meet each child's needs, capabilities, and interests, and ways to implement the principles of developmentally appropriate practices. (Prerequisite: None)

Community Health Worker Department Overview

The Community Health Worker (CHW) Certificate Program is designed to prepare students for careers in community health, health care or social services. Community Health workers are members of a specific community trained to help clients access resources and effectively manage their own health. They typically collaborate as part of the health and/or social services team with other professionals in clinics, community health centers, public health departments, hospitals, and other organizations. CHWs significantly lower health disparities in the U.S. by improving access to care, the quality and the cultural competence of care. Students who receive a CHW certificate can qualify as a Medicaid Enrolled Provider and receive Medicaid reimbursement in Minnesota for their services.

This program was also designed to offer students a pathway to advance their academic career in other health and social service related fields such as nursing, medical assistant, social work and more. This program was funded in part by a grant from the U.S. Department of Labor.

Student Background Studies

Minnesota law requires that any person who provides services that involve direct contact with patients and residents at a health care or child care facility licensed by the Minnesota Department of Health have a background study conducted by the state. An individual who is disqualified from having direct patient contact as a result of the background study, and whose disqualification is not set aside by the Commissioner of Health, will not be permitted to participate in a clinical placement in a Minnesota licensed health care or child care facility. Failure to participate in a clinical placement required by the academic program could result in ineligibility to qualify for a degree in that program.

Department Faculty

Anne Ganey, MPH

Community Health Worker Degrees

Community Health Worker Certificate

Community Health Worker

Certificate • 16 Credits

CERT2287/CERT3287



Degree Description

Here is a list of courses required to earn the Community Health Worker Certificate of Training

Admission Dates: Fall and Spring Semester

Offered on the Faribault and North Mankato Campuses

The course requirements listed below are specific to the 2013-2014 school year. If you need to view the program from previous years view our [Catalog Archive](#).

This credential is part of the Community Health Worker department. [See the Community Health Worker department page for more details](#)

Required Technical Courses (8 Courses)

Complete all of the following courses:

- [CHW 1000](#) Role, Advocacy and Outreach (2 Credits)
- [CHW 1015](#) Organization and Resources (1 Credit)
- [CHW 1025](#) Teaching and Capacity Building (2 Credits)
- [CHW 1035](#) The Community Health Worker: Legal & Ethical Responsibilities (1 Credit)
- [CHW 1045](#) Community Health Worker: Coordination, Documentation & Reporting (1 Credit)
- [CHW 1055](#) Communication Skills and Cultural Competence (2 Credits)
- [CHW 1065](#) Community Health Worker Health Promotion (3 Credits)
- [CHW 1075](#) Internship (2 Credits)

Complete two credits of HC 1500 Healthcare Foundation: (2 Credits)

Intro to Health Careers

[HC 1500](#) Healthcare Foundation: Introduction to Health Careers (1 - 3 Credits)

PLEASE NOTE: All program plans are preliminary and curriculum may change without notice. Your [catalog of record](#) may have different requirements.

Community Health Worker - Certificate of Training Course Descriptions**Role, Advocacy and Outreach****CHW 1000 2.00 credits**

This course focuses on the role of the community health workers' personal safety, self care, and personal wellness and the promotion of health and disease prevention of clients. (Prerequisites: None)

Teaching and Capacity Building**CHW 1025 2.00 credits**

This course focuses on the community health worker's role in teaching and increasing the capacity of the community and of the client to access the health care system. Emphasis is on establishing healthy lifestyles and clients' developing agreements to take responsibility for achieving health goals. You will learn about and practice methods for planning, developing and implementing plans with clients to promote wellness. (Prerequisites: None)

Community Health Worker: Coordination, Documentation & Reporting**CHW 1045 1.00 credits**

This course focuses on the importance and ability of the community health worker to gather, document and report on client visits and other activities. The emphasis is on appropriate, accurate and clear documentation with consideration of legal and agency requirements. (Prerequisites: None)

Community Health Worker Health Promotion**CHW 1065 3.00 credits**

This course focuses on the knowledge and skills a CHW needs in order to assist clients in realizing healthy eating patterns, controlling their weight, integrating exercise into their lives, taking their medications, talking with their doctors, controlling substances such as tobacco, managing stress, achieving life balance, and attaining personal and family wellness. Emphasis will be on learning strategies that can be used to aid in client awareness, and assist clients in

Organization and Resources**CHW 1015 1.00 credits**

This course focuses on the community health worker's knowledge of the community and their ability to prioritize and organize their work. Emphasis is on the use and critical analysis of resources and information problem solving. (Prerequisites: None)

The Community Health Worker: Legal & Ethical Responsibilities**CHW 1035 1.00 credits**

This course focuses on the legal and ethical dimensions of the community health workers' role. You will study the boundaries of the community health worker position, agency policies, confidentiality, liability, mandatory reporting and cultural issues that can influence legal and ethical responsibilities.

Communication Skills and Cultural Competence**CHW 1055 2.00 credits**

This course provides the content and skills in communication to assist community health workers in effectively interacting with a variety of clients, their families and a range of healthcare providers. You will learn about communicating verbally and nonverbally, listening and interviewing, networking, building trust and working in teams. You will practice communication skills in the context of a community's culture and the cultural implications that can affect client communication. (Prerequisites: CHW 1000)

Internship**CHW 1075 2.00 credits**

The CHW internship is an on-site, agency experience that offers continuous opportunities for CHW students to prepare for work in the Community Health Worker Role. CHWs work within their assigned agency to achieve competencies of the defined core roles of Community Health Workers. Upon successful completion, graduates will have achieved the competencies to make them eligible to work, with minimal supervision, as a CHW in an employing agency.

understanding and linking to services in heart disease and stroke, maternal care, diabetes, cancer, oral health and mental health. (Prerequisite: None) (Prerequisites: CHW 1000)

Healthcare Foundation: Introduction to Health Careers

HC 1500 1 - 3 credits

This course will focus on the requirements needed by healthcare workers to effectively work in a variety of healthcare settings with a diverse population of clients. Students will explore workplace skills such as accountability and responsibility, standard of dress, workplace behavior, approaches to assist clients, and expectations of teams and team members. Also included is discussion about how healthcare workers can impact the quality of health care and balance their work and personal life to maintain personal wellness. In addition, students will examine the emotional, spiritual, and social needs of clients as well as the type of care needed by different populations. The course also provides a framework for healthcare workers to interact with diverse clients and staff. Included are belief systems, cultural practices, and respect and sensitivity to cultural, gender, and age issues. (Prerequisite: None)

Community Social Service - Certificate of Training Course Descriptions**Direct Service Professionalism****CSS 1801 3.00 credits**

This course gives an overview of how service providers/paraprofessionals work with each another in order to assure the delivery of optimal supports. Topics which the course reviews include: the use of support teams (effective team work/interdisciplinary cooperation, team dynamics, communication skills, promotion of independence and autonomy, and problem solving skills), working with families, direct support provider roles and responsibilities, diversity, confidentiality, and advocacy issues. (Prerequisites: None)

Physical Developmental Supports I**CSS 1802 3.00 credits**

This course will compare and contrast the community supports model to the former medical model. Students will review an introduction to a variety of disabilities, specific support issues including common signs and symptoms of health concerns, standard precautions and blood borne pathogens, appropriate responses to emergency situation, basic medication concerns, and documentation techniques. In addition, students will learn about relationship and sexuality issues, inclusion issues, and community resources in the environment of the individuals they will support. (Prerequisites: None)

Person Centered Planning**CSS 1804 3.00 credits**

This course will introduce you to a variety of strategies and techniques used to facilitate person centered planning for individualized and real life goals. Students will learn how the Civil Rights Movement was the impetus for change which lead to our current disability laws and rules. Self-advocacy and self-determination within an interdisciplinary team planning process will be explored. This is not about program planning, but more about what it takes to get what is really necessary to ensure an individual with disabilities can live an independent and average life style with dignity and respect utilizing only the supports the individual really needs and desires. (Prerequisites: None)

Facilitating Positive Behaviors**CSS 1811 4.00 credits**

This course provides an in-depth look at positive supports for children and adults with challenging behaviors and reviews human development, learning styles, and teaching techniques. Emphasis is placed on understanding and supporting the individual's learning barriers by using positive approaches, as well as understanding and responding to behaviors with positive supports. Students will explore how their individual values and personal experiences influence the ways in which they respond to and assess individual's abilities. Students will also acquire knowledge and skills related to basic approaches and principles, completing various types of functional assessments, the importance of using non-aversive interventions and the selection and use of appropriate non-aversive behavioral supports. Methods for designing, planning, developing and implementing skill orientated support plans are taught in this course. Completing functional assessments, observing, documenting and reporting progress on learning plans are learned through practical experience. The student will be able to write basic learning/behavior support programs. (Prerequisites: None)

Basic Nursing 101 (CNA)**HCTC1886 4.00 credits**

This course meets federal and state criteria for eligibility to take the state test to become a NAR, HHA, as well as the requirements for Basic Nursing 101, a requirement for the Practical Nursing Program. It introduces concepts of basic human needs, the health/illness continuum and focuses on preparing the student to safely perform basic nursing skills needed to function as a Nursing Assistant or Home Health

Aide. (Prerequisites: None)

Community Social Service - Diploma of Occupational Proficiency Course Descriptions**Direct Service Professionalism****CSS 1801 3.00 credits**

This course gives an overview of how service providers/paraprofessionals work with each another in order to assure the delivery of optimal supports. Topics which the course reviews include: the use of support teams (effective team work/interdisciplinary cooperation, team dynamics, communication skills, promotion of independence and autonomy, and problem solving skills), working with families, direct support provider roles and responsibilities, diversity, confidentiality, and advocacy issues. (Prerequisites: None)

Physical Developmental Supports I**CSS 1802 3.00 credits**

This course will compare and contrast the community supports model to the former medical model. Students will review an introduction to a variety of disabilities, specific support issues including common signs and symptoms of health concerns, standard precautions and blood borne pathogens, appropriate responses to emergency situation, basic medication concerns, and documentation techniques. In addition, students will learn about relationship and sexuality issues, inclusion issues, and community resources in the environment of the individuals they will support. (Prerequisites: None)

Person Centered Planning**CSS 1804 3.00 credits**

This course will introduce you to a variety of strategies and techniques used to facilitate person centered planning for individualized and real life goals. Students will learn how the Civil Rights Movement was the impetus for change which lead to our current disability laws and rules. Self-advocacy and self-determination within an interdisciplinary team planning process will be explored. This is not about program planning, but more about what it takes to get what is really necessary to ensure an individual with disabilities can live an independent and average life style with dignity and respect utilizing only the supports the individual really needs and desires. (Prerequisites: None)

Facilitating Positive Behaviors**CSS 1811 4.00 credits**

This course provides an in-depth look at positive supports for children and adults with challenging behaviors and reviews human development, learning styles, and teaching techniques. Emphasis is placed on understanding and supporting the individual's learning barriers by using positive approaches, as well as understanding and responding to behaviors with positive supports. Students will explore how their individual values and personal experiences influence the ways in which they respond to and assess individual's abilities. Students will also acquire knowledge and skills related to basic approaches and principles, completing various types of functional assessments, the importance of using non-aversive interventions and the selection and use of appropriate non-aversive behavioral supports. Methods for designing, planning, developing and implementing skill orientated support plans are taught in this course. Completing functional assessments, observing, documenting and reporting progress on learning plans are learned through practical experience. The student will be able to write basic learning/behavior support programs. (Prerequisites: None)

Physical Developmental Supports II**CSS 1902 3.00 credits**

This course will review specific types of developmental, physical, and mental disabilities including: Cerebral Palsy, Autism, Epilepsy, Mental Retardation, Prader Willi, Chromosomal Disorders, Brain Injury, Mental Health Diagnosis, and Chemical Dependency among adults and children. Students will learn how to analyze environmental issues among all settings to determine how to provide the

Community Social Service Internship**CSS 1910 4.00 credits**

This course is designed to provide the student with a purposeful occupational experience in the Community Social Services field. Each internship is an individualized experience. Site selection is based on each student's area of interest in conjunction with the instructor's approval to provide experience related to the skills and knowledge acquired in the program. The focus of the Community Social Service program

most appropriate supports. The impact of grief and loss issues will be explored within the context of the individual and family system. (Prerequisites: Must have a score of 77.5 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher. Must have a score of 85.5 or higher on the Sentence Skills portion of the Accuplacer test or completion of ENGL 0080 and ENGL 0090 with a grade of C or higher. CSS 1802)

Community Social Service Internship Seminar

CSS 1911 1.00 credits

Internship seminar must be taken in conjunction with CSS 1910 Internship. Seminar is a one credit course which meets four times during the semester to integrate concepts learned while completing the 192 hour internship capstone project. Students will apply the NADSP Code of Ethics and/or NASW Code of Ethics (depending on internship setting) to the role of designated coordinator or entry level social service worker. Students will apply culminated information and skills learned throughout the CSS coursework in a social service agency. (Prerequisite: Instructor permission) (Co-requisite: CSS 1910)

Medical Terminology

HC 1000 3.00 credits

This course will be a study of the language used in the health care delivery system. The course presents component medical word parts and their use in building and interpreting medical terminology related to each body system. Spelling, pronunciation and usage of medical terminology will be emphasized. (Prerequisites: None)

Basic Nursing 101 (CNA)

HCTC1886 4.00 credits

This course meets federal and state criteria for eligibility to take the state test to become a NAR, HHA, as well as the requirements for Basic Nursing 101, a requirement for the Practical Nursing Program. It introduces concepts of basic human needs, the health/illness continuum and focuses on preparing the student to safely perform basic nursing skills needed to function as a Nursing Assistant or Home Health Aide. (Prerequisites: None)

First Aid

HLTH1952 1.00 credits

This course includes emergency care training for initial treatment of illness and injury. Patient assessment, bleeding

is to allow students to integrate and apply skills and knowledge gained in the actual work environment. (Prerequisites: Instructor permission) (Co-requisite: CSS 1911)

Supportive Interventions

CSS 1913 4.00 credits

This course provides an in-depth study of several mechanisms of intervention; assessment, support plan design, and implementation and evaluation. Additionally, analysis of a wide variety of multiple positive behavior strategies will be conducted. This course reviews the philosophy of behavior modification and theory, incident and accident reports, and documentation requirements. It also provides an in-depth analysis of specialized considerations for service professionals when implementing emergency control procedures, permitted control procedures, and control procedures prohibited by Minnesota law. The student will learn about the Risk Management Plan and Individual Service Plan in this course. The student will be able to access a problem behavior, plan and implement interventions, designed proactive manipulations, and integrate a multi-intervention, multidisciplinary team approach. (Prerequisite: CSS 1811)

Trained Medication Aide

HC 1934 2.00 credits

This course includes the study of legal requirements concerning drugs and drug administration. General information about medications, terminology related to medication administration and use of reference sources will be studied. Students will learn actions, usual dose, toxic symptoms and special considerations of a variety of drugs. Students will not administer medications but will learn basic guidelines for medication administration. (Prerequisites: None)

CPR

HLTH1950 1.00 credits

This course covers the skills of infant, child and adult single and two rescue CPR as well as relief of foreign body airway obstruction procedures for infant, child and adult. Automated external defibrillators, bag-valve masks and pocket masks are also used. Signs and symptoms of stroke and heart attack are also discussed. This course meets the criteria of the American Heart Association 2010 Guidelines for CPR and ECC.

Computer Software for College

OTEC1001 2.00 credits

This course covers basic information about computer hardware and software and the use of computer software as a

control, shock management, soft tissue injury, orthopedic injury, diabetic problems, seizures, poisons, heat exposure, and cold exposure are some of the topics covered in this course. This course is appropriate for anyone who may need to render immediate care. The items covered in the course are just as applicable to an industrial or a business work setting, as they are to a daycare facility, or even at home. (Prerequisite: None).

American Sign Language 1

ASL 101 3.00 credits

This course teaches the basics of American Sign Language. (Prerequisites: None) (MNTC 8: Global Perspective)

Introduction to Biology

BIOL100 4.00 credits

Introduction to Biology familiarizes students with fundamental biological principles and processes occurring within our natural world. This course engages students in the methodology and practice of scientific investigation, and emphasizes molecular and cellular processes, systems of the human body, and human impact on the environment. Discussions of organisms are framed by the sciences of ecology and evolution with a focus on the relationship between biological structure and function. Lecture and a 2 hour lab are included. (Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher) (MNTC 3: Natural Sciences)

American Racial Minorities

ETHN101 3.00 credits

This course will introduce students to the importance and the understanding of the nature of race relations in the United States of America. Students will use the various sociological perspectives as a lens to examine the social construction of race, ethnicity and the evolving nature of race and ethnic relations in the U.S. (Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher) (MNTC 5, 9: History/Social & Behavioral Sciences, Ethical & Civic Responsibility)

business productivity tool. Students will be given introductory training on a Windows operating system and the common business applications of word processing, spreadsheets, database, and presentation graphics. This course is designed to equip the student with knowledge of hardware and software applications. This course will cover the business application software that will be used in more advanced courses. (Prerequisites: Basic computer skills or Computer Basic class; mouse proficiency, keyboarding skill of 25 words per minute)

Composition

ENGL100 4.00 credits

Composition is concerned with developing, through theory and practice, the ability to communicate in written form for personal and professional reasons. Students will develop writing skills, analytical skills, and critical thinking skills. Students will complete readings, papers, grammar exercises, and in-class activities. Students will learn methods of writing informatively and persuasively. (Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher AND a score of 85.5 or higher on the Sentence Skills portion of the Accuplacer test or completion of ENGL 0080 and ENGL 0090 with a grade of C or higher)(MNTC 1: Communication) This course has an online option.

Elementary Statistics

MATH154 4.00 credits

This course introduces the essential mathematical elements of statistics, applying them to a broad range of areas including business, manufacturing, economics, and the physical, biological and social sciences. Topics include descriptive measures of data, measures of central tendency, variability, standard probability distributions, tests of hypotheses, confidence intervals, and estimation. To put the treatment on a strong foundation, concepts of probability are developed throughout, and shown to form the unifying theme behind modern statistics. (Prerequisites: Two years of high school algebra, completion of MATH 0085 with a grade of C or higher or a score of 75.5 or higher on the Elementary Algebra portion of the Accuplacer test) (MNTC 4: Mathematical/Logical Reasoning)

Lifespan Psychology

PSYC110 3.00 credits

This is an introductory course examining human development across the lifespan, with emphasis on normal physical, cognitive, and social development. (Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher) (MNTC 5, 7: History/Social & Behavioral Sciences, Human Diversity)

Introduction to Sociology

SOC 101 3.00 credits

The world is a far more diverse place than you might think! This course is a broad survey of sociology and its practical uses for all of us. In this course, students are introduced to a variety of topics, emphasizing breadth rather than depth. After learning about the basic theories and methods of sociology, students will cover topics such as race, gender, education, religion, social class, work, family, the environment, government and politics, organizations and bureaucracy, and other topics. Students will learn about the nature of all of these areas and their effects on individuals and their broader implications for society. In the end, students will leave with a far greater understanding of how society is organized and what that means for where we have been, where we are, and where we are going as a people. (Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher) (MNTC 5, 8: History/Social & Behavioral Sciences, Global Perspective)

Principles of Microeconomics

ECON120 3.00 credits

This course examines theories of how various types of product, service, and resource markets operate and the resulting implications for public policy. Topics include decision-making by consumers, business firms, and government as well as price determination, resource allocation, and income determination via markets. (Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher) (MNTC 5, 8: History/Social & Behavioral Sciences, Global Perspective).

American Government

POL 110 3.00 credits

American Government introduces students to the fundamentals of American National Government. The course includes an examination of basic American political principles and practices, the Constitution, major institutions, and civil liberties. The objective of this course is to acquaint students with the complexities of the American political system. (Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher) (MNTC 5, 9: History/Social & Behavioral Science, Ethical and Civic Responsibility)

Principles of Macroeconomics

ECON110 3.00 credits

A study of aggregate economic behavior and current economic issues, policies and problems. Macroeconomics measures such as inflation, employment, and the growth of output are examined along with the tools a government can use to foster a stable economy. (Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher) (MNTC 5, 8: History/Social & Behavioral Science, Global Perspective)

Ethics in Society

PHIL100 3.00 credits

This course studies the foundations for moral beliefs, judgments, and values and the part they play in practical ethical judgments. In its application, the course deals with contemporary issues and explores specific issues of personal morality as well as business and social ethics. (Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher) (MNTC 6, 9: Humanities & Fine Arts, Ethical & Civil Responsibility)

Community Social Service

Certificate • 17 Credits

CERT2260/CERT3360



Degree Description

Through the certificate program students will acquire the knowledge and skills for performing duties as Direct Service Professionals in residential, vocational, recreation, health and education settings.

Admission Dates: Fall and Spring Semester

Offered on the Faribault and North Mankato Campuses

The course requirements listed below are specific to the 2013-2014 school year. If you need to view the program from previous years view our [Catalog Archive](#).

This credential is part of the Community Social Service department. [See the Community Social Service department page for more details](#)

Required Technical Courses (5 Courses)

Complete the following courses:

[CSS 1801](#) Direct Service Professionalism (3 Credits)

[CSS 1802](#) Physical Developmental Supports I (3 Credits)

[CSS 1804](#) Person Centered Planning (3 Credits)

[CSS 1811](#) Facilitating Positive Behaviors (4 Credits)

[HCTC1886](#) Basic Nursing 101 (CNA) (4 Credits)

PLEASE NOTE: All program plans are preliminary and curriculum may change without notice. Your [catalog of record](#) may have different requirements.

Community Social Service Department Overview

Through the certificate program students will acquire the knowledge and skills for performing duties as Direct Service Professionals in residential, vocational, recreation, health and education settings.

Through the diploma program students will, in addition to completing the certificate coursework, gain knowledge and skills in human behavior, communication, and medication areas. The diploma will provide the student with the ability to obtain Designated Coordinator status in addition to having two years of work experience. Upon completing the coursework from the certificate and diploma the student will also have the option to complete the A.A.S. degree, which includes 20 credits of transferable Liberal Arts & Sciences coursework. Students also have the ability to transfer to Minnesota State University, Mankato as we have an articulation agreement with the Social Work Department.

The A.A.S. degree also entitles the student to the Designated Coordinator status in addition to having two years of work experience and applies to supervisory and middle management positions in human services settings licensed by the Consolidated Standards Rule. The A.A.S. degree offers the graduating student the option to continue their education at a four-year institution upon completion.

Students graduating from the Community Social Service Program (CSS) are eligible for positions in several areas in the health, human services, and education fields with children, adolescents, adults, and senior citizens. The graduating student may serve a variety of at-risk populations including people with disabilities, mental illness, substance abuse, poverty, and disadvantaged. Students who may be interested in Social Work, Sociology, Psychology, or other health related areas may want to consider the CSS program as a well-rounded educational base to support further development of generalist skills at a four-year institution.

Community Social Service Mission Statement

The Community Social Service Program provides students with the skills and knowledge to holistically support and advocate in a professional manner.

Student Background Studies:

Minnesota law requires that any person who provides services that involve direct contact with patients and residents at a health care or child care facility licensed by the Minnesota Department of Health have a background study conducted by the state. An individual who is disqualified from having direct patient contact as a result of the background study, and whose disqualification is not set aside by the Commissioner of Health, will not be permitted to participate in a clinical placement in a Minnesota licensed health care or child care facility. Failure to participate in a clinical placement required by the academic program could result in ineligibility to qualify for a degree in that program.

Core Competencies

1. Demonstrate professionalism by meeting industry standards.
2. Make critical decisions based on knowledge of system protocols.
3. Recognize the need for skill development and demonstrate the ability to teach to ensure personal growth.
4. The ability to provide behavioral interventions and strategies appropriately and in a least restrictive manner.
5. Identify appropriate resources, supports, and services.
6. Demonstrate an understanding of concepts relevant to general social service practices in a wide variety of settings.

Department Faculty

Deb Salmon, Wayne Whitmore

Community Social Service Degrees

Community Social Services AAS Degree
Community Social Service Diploma
Community Social Service Certificate

Community Social Service

Diploma • 48 Credits

DIP 2261/DIP 3361



Degree Description

Through the diploma program students will, in addition to completing the certificate coursework, gain knowledge and skills in human behavior, communication, and medication areas. The diploma will provide the student with the ability to obtain Designated Coordinator status in addition to having 2 years of work experience. Upon completing the coursework from the certificate and diploma the student will also have the option to complete the A.A.S. degree, which includes 20 credits of transferable Liberal Arts & Sciences coursework. Students also have the ability to transfer to Minnesota State University, Mankato as we have an articulation agreement with the Social Work Department.

Admission Dates: Fall and Spring Semester

Offered on the Faribault and North Mankato Campuses

The course requirements listed below are specific to the 2013-2014 school year. If you need to view the program from previous years view our [Catalog Archive](#).

This credential is part of the Community Social Service department. [See the Community Social Service department page for more details](#)

Required Technical Courses (14 Courses)

Please complete the following courses:

- [CSS 1801](#) Direct Service Professionalism (3 Credits)
- [CSS 1802](#) Physical Developmental Supports I (3 Credits)
- [CSS 1804](#) Person Centered Planning (3 Credits)
- [CSS 1811](#) Facilitating Positive Behaviors (4 Credits)
- [CSS 1902](#) Physical Developmental Supports II (3 Credits)
- [CSS 1910](#) Community Social Service Internship (4 Credits)
- [CSS 1911](#) Community Social Service Internship Seminar (1 Credit)
- [CSS 1913](#) Supportive Interventions (4 Credits)
- [HC 1000](#) Medical Terminology (3 Credits)
- [HC 1934](#) Trained Medication Aide (2 Credits)
- [HCTC1886](#) Basic Nursing 101 (CNA) (4 Credits)
- [HLTH1950](#) CPR (1 Credit)
- [HLTH1952](#) First Aid (1 Credit)
- [OTEC1001](#) Computer Software for College (2 Credits)

Required Liberal Arts & Sciences: (2 Courses)

You must complete the following course.

- [ASL 101](#) American Sign Language 1 (3 Credits)
- [ENGL100](#) Composition (4 Credits)

PLEASE NOTE: All program plans are preliminary and curriculum may change without notice. Your [catalog of record](#) may have different requirements.

Elective Credits (1 Course)

Liberal Arts and Sciences Choose one Liberal Arts and Sciences course from the following list as recommended by advisor.

- [BIOL100](#) Introduction to Biology (4 Credits)
- [MATH154](#) Elementary Statistics (4 Credits)
- [ETHN101](#) American Racial Minorities (3 Credits)
- [PSYC110](#) Lifespan Psychology (3 Credits)
- [SOC 101](#) Introduction to Sociology (3 Credits)
- [ECON110](#) Principles of Macroeconomics (3 Credits)
- [ECON120](#) Principles of Microeconomics (3 Credits)
- [PHIL100](#) Ethics in Society (3 Credits)
- [POL 110](#) American Government (3 Credits)

Community Social Services - Associate of Applied Science Degree Course Descriptions**Direct Service Professionalism****CSS 1801 3.00 credits**

This course gives an overview of how service providers/paraprofessionals work with each another in order to assure the delivery of optimal supports. Topics which the course reviews include: the use of support teams (effective team work/interdisciplinary cooperation, team dynamics, communication skills, promotion of independence and autonomy, and problem solving skills), working with families, direct support provider roles and responsibilities, diversity, confidentiality, and advocacy issues. (Prerequisites: None)

Physical Developmental Supports I**CSS 1802 3.00 credits**

This course will compare and contrast the community supports model to the former medical model. Students will review an introduction to a variety of disabilities, specific support issues including common signs and symptoms of health concerns, standard precautions and blood borne pathogens, appropriate responses to emergency situation, basic medication concerns, and documentation techniques. In addition, students will learn about relationship and sexuality issues, inclusion issues, and community resources in the environment of the individuals they will support. (Prerequisites: None)

Person Centered Planning**CSS 1804 3.00 credits**

This course will introduce you to a variety of strategies and techniques used to facilitate person centered planning for individualized and real life goals. Students will learn how the Civil Rights Movement was the impetus for change which lead to our current disability laws and rules. Self-advocacy and self-determination within an interdisciplinary team planning process will be explored. This is not about program planning, but more about what it takes to get what is really necessary to ensure an individual with disabilities can live an independent and average life style with dignity and respect utilizing only the supports the individual really needs and desires. (Prerequisites: None)

Facilitating Positive Behaviors**CSS 1811 4.00 credits**

This course provides an in-depth look at positive supports for children and adults with challenging behaviors and reviews human development, learning styles, and teaching techniques. Emphasis is placed on understanding and supporting the individual's learning barriers by using positive approaches, as well as understanding and responding to behaviors with positive supports. Students will explore how their individual values and personal experiences influence the ways in which they respond to and assess individual's abilities. Students will also acquire knowledge and skills related to basic approaches and principles, completing various types of functional assessments, the importance of using non-aversive interventions and the selection and use of appropriate non-aversive behavioral supports. Methods for designing, planning, developing and implementing skill orientated support plans are taught in this course. Completing functional assessments, observing, documenting and reporting progress on learning plans are learned through practical experience. The student will be able to write basic learning/behavior support programs. (Prerequisites: None)

Introduction to Social Work**CSS 1812 3.00 credits**

This course provides students with an introduction to the profession of social work. It will provide a broad overview of generalist social work practice with an integrative approach among various levels of practice: individual, environmental and societal. Emphasis will be placed on diversity, ethics, social problems, and self-determination. (Prerequisites: Must have a score of 77.5 or higher on the Reading portion of the

Social Welfare Services**CSS 1813 3.00 credits**

This course will discuss the history of social welfare as an institution. Various social problems will be examined and discussed in terms of at-risk populations, societal norms and values, and how policy is developed to address these problems. (Prerequisites: Must have a score of 77.5 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher. Must

Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher. Must have a score of 85.5 or higher on the Sentence Skills portion of the Accuplacer test or completion of ENGL 0080 and ENGL 0090 with a grade of C or higher.)

Community Social Service Projects

CSS 1814 3.00 credits

This course will help students critically examine a social problem, then work as a group to determine the appropriate steps to take to implement a program that addresses the problem. Students will learn how to assess the problem, research, design, implement, and evaluate a possible solution to the problem. Group process learning will be utilized. (Prerequisites: Must have a score of 77.5 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher. Must have a score of 85.5 or higher on the Sentence Skills portion of the Accuplacer test or completion of ENGL 0080 and ENGL 0090 with a grade of C or higher.)

Community Social Service Internship

CSS 1910 4.00 credits

This course is designed to provide the student with a purposeful occupational experience in the Community Social Services field. Each internship is an individualized experience. Site selection is based on each student's area of interest in conjunction with the instructor's approval to provide experience related to the skills and knowledge acquired in the program. The focus of the Community Social Service program is to allow students to integrate and apply skills and knowledge gained in the actual work environment. (Prerequisites: Instructor permission) (Co-requisite: CSS 1911)

Supportive Interventions

CSS 1913 4.00 credits

This course provides an in-depth study of several mechanisms of intervention; assessment, support plan design, and implementation and evaluation. Additionally, analysis of a wide variety of multiple positive behavior strategies will be conducted. This course reviews the philosophy of behavior modification and theory, incident and accident reports, and documentation requirements. It also provides an in-depth analysis of specialized considerations for service professionals when implementing emergency control procedures, permitted control procedures, and control procedures prohibited by Minnesota law. The student will learn about the Risk Management Plan and Individual Service Plan in this course. The student will be able to access a problem behavior, plan and implement interventions, designed proactive manipulations, and integrate a multi-intervention, multidisciplinary team approach. (Prerequisite: CSS 1811)

have a score of 85.5 or higher on the Sentence Skills portion of the Accuplacer test or completion of ENGL 0080 and ENGL 0090 with a grade of C or higher.)

Physical Developmental Supports II

CSS 1902 3.00 credits

This course will review specific types of developmental, physical, and mental disabilities including: Cerebral Palsy, Autism, Epilepsy, Mental Retardation, Prader Willi, Chromosomal Disorders, Brain Injury, Mental Health Diagnosis, and Chemical Dependency among adults and children. Students will learn how to analyze environmental issues among all settings to determine how to provide the most appropriate supports. The impact of grief and loss issues will be explored within the context of the individual and family system. (Prerequisites: Must have a score of 77.5 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher. Must have a score of 85.5 or higher on the Sentence Skills portion of the Accuplacer test or completion of ENGL 0080 and ENGL 0090 with a grade of C or higher. CSS 1802)

Community Social Service Internship Seminar

CSS 1911 1.00 credits

Internship seminar must be taken in conjunction with CSS 1910 Internship. Seminar is a one credit course which meets four times during the semester to integrate concepts learned while completing the 192 hour internship capstone project. Students will apply the NADSP Code of Ethics and/or NASW Code of Ethics (depending on internship setting) to the role of designated coordinator or entry level social service worker. Students will apply culminated information and skills learned throughout the CSS coursework in a social service agency. (Prerequisite: Instructor permission) (Co-requisite: CSS 1910)

Medical Terminology

HC 1000 3.00 credits

This course will be a study of the language used in the health care delivery system. The course presents component medical word parts and their use in building and interpreting medical terminology related to each body system. Spelling, pronunciation and usage of medical terminology will be emphasized. (Prerequisites: None)

Trained Medication Aide

HC 1934 2.00 credits

This course includes the study of legal requirements concerning drugs and drug administration. General information about medications, terminology related to medication administration and use of reference sources will be studied. Students will learn actions, usual dose, toxic symptoms and special considerations of a variety of drugs. Students will not administer medications but will learn basic guidelines for medication administration. (Prerequisites: None)

CPR

HLTH1950 1.00 credits

This course covers the skills of infant, child and adult single and two rescue CPR as well as relief of foreign body airway obstruction procedures for infant, child and adult. Automated external defibrillators, bag-valve masks and pocket masks are also used. Signs and symptoms of stroke and heart attack are also discussed. This course meets the criteria of the American Heart Association 2010 Guidelines for CPR and ECC.

Computer Software for College

OTEC1001 2.00 credits

This course covers basic information about computer hardware and software and the use of computer software as a business productivity tool. Students will be given introductory training on a Windows operating system and the common business applications of word processing, spreadsheets, database, and presentation graphics. This course is designed to equip the student with knowledge of hardware and software applications. This course will cover the business application software that will be used in more advanced courses. (Prerequisites: Basic computer skills or Computer Basic class; mouse proficiency, keyboarding skill of 25 words per minute)

Composition

ENGL100 4.00 credits

Composition is concerned with developing, through theory and practice, the ability to communicate in written form for personal and professional reasons. Students will develop writing skills, analytical skills, and critical thinking skills. Students will complete readings, papers, grammar exercises, and in-class activities. Students will learn methods of writing informatively and persuasively. (Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher AND a score of 85.5 or higher on the Sentence Skills portion of the Accuplacer test or completion of ENGL 0080 and ENGL 0090 with a grade of C or higher)(MNTC 1: Communication) This course has an online option.

Basic Nursing 101 (CNA)

HCTC1886 4.00 credits

This course meets federal and state criteria for eligibility to take the state test to become a NAR, HHA, as well as the requirements for Basic Nursing 101, a requirement for the Practical Nursing Program. It introduces concepts of basic human needs, the health/illness continuum and focuses on preparing the student to safely perform basic nursing skills needed to function as a Nursing Assistant or Home Health Aide. (Prerequisites: None)

First Aid

HLTH1952 1.00 credits

This course includes emergency care training for initial treatment of illness and injury. Patient assessment, bleeding control, shock management, soft tissue injury, orthopedic injury, diabetic problems, seizures, poisons, heat exposure, and cold exposure are some of the topics covered in this course. This course is appropriate for anyone who may need to render immediate care. The items covered in the course are just as applicable to an industrial or a business work setting, as they are to a daycare facility, or even at home. (Prerequisite: None).

American Sign Language 1

ASL 101 3.00 credits

This course teaches the basics of American Sign Language. (Prerequisites: None) (MNTC 8: Global Perspective)

Community Social Services

A.A.S. Degree • 70 Credits

AAS 2262/AAS 3362



Degree Description

The A.A.S. degree also entitles the student to the Designated Coordinator status in addition to having two years of work experience and applies to supervisory and middle management positions in human services settings licensed by the Consolidated Standards Rule. The A.A.S. degree offers the graduating student the option to continue their education at a four-year institution upon completion.

Admission Dates: Fall and Spring Semester

Offered on the Faribault and North Mankato Campuses

The course requirements listed below are specific to the 2013-2014 school year. If you need to view the program from previous years view our [Catalog Archive](#).

This credential is part of the Community Social Service department. [See the Community Social Service department page for more details](#)

Required Technical Courses (17 Courses)

Complete the following courses:

- [CSS 1801](#) Direct Service Professionalism (3 Credits)
- [CSS 1802](#) Physical Developmental Supports I (3 Credits)
- [CSS 1804](#) Person Centered Planning (3 Credits)
- [CSS 1811](#) Facilitating Positive Behaviors (4 Credits)
- [CSS 1812](#) Introduction to Social Work (3 Credits)
- [CSS 1813](#) Social Welfare Services (3 Credits)
- [CSS 1814](#) Community Social Service Projects (3 Credits)
- [CSS 1902](#) Physical Developmental Supports II (3 Credits)
- [CSS 1910](#) Community Social Service Internship (4 Credits)
- [CSS 1911](#) Community Social Service Internship Seminar (1 Credit)
- [CSS 1913](#) Supportive Interventions (4 Credits)
- [HC 1000](#) Medical Terminology (3 Credits)
- [HC 1934](#) Trained Medication Aide (2 Credits)
- [HCTC1886](#) Basic Nursing 101 (CNA) (4 Credits)
- [HLTH1950](#) CPR (1 Credit)
- [HLTH1952](#) First Aid (1 Credit)
- [OTEC1001](#) Computer Software for College (2 Credits)

Required Liberal Arts and Sciences (2 Courses)

You must complete the following courses:

- [ASL 101](#) American Sign Language 1 (3 Credits)
- [ENGL100](#) Composition (4 Credits)

PLEASE NOTE: All program plans are preliminary and curriculum may change without notice. Your [catalog of record](#) may have different requirements.

Liberal Arts and Sciences Electives

To complete an AAS Degree, students must complete 23 credits from 3 of the 10 MnTC goal areas. 16 additional credits are required. The following courses are recommended: BIOL100, MATH154, ETHN101, PSYC110, SOC101, ECON110, ECON120, PHIL100, POL110. Please select your electives in consultation with your advisor/faculty.

Computer Careers Department Overview

The Computer Careers field involves the collection, analysis, and interpretation of essential information. Persons employed in the field may work directly for all types of business firms, government agencies, or non-profit organizations. SCC provides the training that can lead to job opportunities as one of the following: Database programmer, Database administrator, Systems administrator, Network administrator, Technical writer, Technical support specialist, Help desk specialist, Web designer, Web developer, Webmaster, Programmer, Applications programmer, Programmer/analyst, Software tester, or Computer sales associate.

Evening/Part-Time Options

Some classes may be offered in the evening on an "on demand" basis. The program may be completed on a part-time basis.

Core Competencies

1. Apply computing skills to solve problems within the context of business systems
2. Communicate effectively within an organization
3. Work productively in team and individual settings
4. Demonstrate professionalism and ethical behavior
5. Adapt to emerging technologies and new environments

Department Faculty

Linda Anderson, John Burns, Peter Johnson

Computer Careers Degrees

Information Systems AAS Degree
Networking Services AAS Degree
Information Systems Diploma
Networking Services Diploma
Computer Assistant Certificate
Web Programmer Certificate

Information Systems

A.A.S. Degree • 64 Credits

AAS 3275



Degree Description

This program is designed to prepare the student for a career as a computer programmer, programmer/analyst, database programmer, database administrator, technical writer, technical support specialist, help desk specialist, web designer, web developer, webmaster, software or software tester. The student will receive a solid background in the basic concepts of computer programming, web page development, web server application development, management and maintenance of web servers, and electronic commerce concepts. The student will be exposed to major programming languages, systems analysis and software design, computer operating systems, and Internet services.

Hands-on training is provided on three platforms: IBM Mainframe, IBM Midrange, and PC clients and servers.

Students successfully completing this degree have the opportunity to apply the degree toward a Bachelor of Applied Science (BAS) in Computer and Information Technology at Minnesota State University, Mankato.

Degree Core Competencies

1. Design and code software applications using a variety of programming languages
2. Utilize and maintain relational databases
3. Use web application development tools
4. Apply current web server technologies

Admission Dates: Fall and Spring Semester

Offered on the North Mankato Campus

The course requirements listed below are specific to the 2013-2014 school year. If you need to view the program from previous years view our [Catalog Archive](#).

This credential is part of the Computer Careers department. [See the Computer Careers department page for more details](#)

Required Technical Courses (6 Courses)

Complete all of the following courses:

- [COMP1120](#) Foundations of Computing (4 Credits)
- [COMP1125](#) Spreadsheet/Database Integration (4 Credits)
- [COMP1130](#) Programming Fundamentals (4 Credits)
- [COMP1140](#) Web Development (4 Credits)
- [COMP1200](#) PC Hardware and Software Essentials (4 Credits)
- [COMP1360](#) Introduction to Data Communications and Networking (4 Credits)

Required Capstone (4 Credits)

Complete 4 credits:

- [COMP2496](#) Capstone - Software Development (1 - 4 Credits)

Technical Electives (20 Credits)

Select 20 credits from the following courses:

- WEB DEV
 - [COMP2145](#) Web Programming (4 Credits)
 - [COMP2150](#) Web Services (4 Credits)
- PC SOFTWARE DEV
 - [COMP2130](#) Advanced Spreadsheets/Database & Programming (4 Credits)
 - [COMP2300](#) Java (4 Credits)
 - [COMP2310](#) Visual Basic.Net (4 Credits)
- ENTERPRISE DEV
 - [COMP2200](#) IBM i5 (iSeries) Operating System (4 Credits)
 - [COMP2205](#) RPG IV (iSeries) (4 Credits)
 - [COMP2210](#) COBOL (4 Credits)

Required Liberal Arts & Sciences (3 Courses)

To complete an AAS Degree, students must complete 16 MNTC credits from 3 of the 10 MNTC Goal areas. Select the following

required courses:

[ENGL100](#) Composition (4 Credits)

[COMM110](#) Public Speaking (3 Credits)

[MATH115](#) Concepts in Math (4 Credits)

Or

[MATH120](#) College Algebra (4 Credits)

Elective Liberal Arts & Sciences

Choose an additional 5 credits from MNTC Goal Areas
2,3,5,6,7,8,9 or 10.

PLEASE NOTE: All program plans are preliminary and curriculum may
change without notice. Your [catalog of record](#) may have different
requirements.

Information Systems - Associate of Applied Science Degree Course Descriptions

Foundations of Computing

COMP1120 4.00 credits

This course introduces the student to the world of information system. Students will explore the history of computing, career opportunities in information technology, and computer concepts as they apply in a business environment. Topics to be covered include an introduction to basic web-page development, command-line interfaces, file management principles, computer numbering systems, and database principles. Students will also receive initial exposure to the IBM mid-range computer platform and computer programming and algorithms through the use of problem analysis, pseudo-code and entry level programming languages. (Prerequisite: None)

Programming Fundamentals

COMP1130 4.00 credits

Programming Fundamentals is designed to be a person's first exposure to the world of computer programming. This course covers how to design and implement a computer program, writing a program that will make different types of decisions, how to solve problems using computer programs that remember things, make decisions, and perform repetitive tasks. The course uses both Alice and JavaScript to help the student meet these objectives. Alice is a 3-D programming environment from Carnegie Mellon University designed to teach programming concepts. It is an enjoyable and easy-to-user programming environment that assists the student in making 3-D, animated movies. JavaScript, is a popular language used for by web browsers to get input from the user. JavaScript teaches client-side scripting. This course is part of the Web Programming Certificate and the AAS Information Systems programming degree at South Central College. You will need to have a basic understanding of (X)HTML for the second half of this course which uses JavaScript. A minimum typing speed of 20-35 wpm is recommended. (Prerequisites: COMP 1120)

PC Hardware and Software Essentials

COMP1200 4.00 credits

PC Hardware and Software, presents an in-depth exposure to computer hardware and operating systems. Students learn the functionality of hardware and software components as well as suggested best practices in maintenance, and safety issues. Through hands on activities and labs, students learn how to

Spreadsheet/Database Integration

COMP1125 4.00 credits

The focus of this course will be on the core competencies of Excel and Access and their integration with Word, PowerPoint, and each other. Topics to be covered in Excel include: formatting, creating formulas, creating charts and pivot tables, linking files, using templates and hyperlinks, and the use of functions, including logical and lookup functions. Topics covered in Access include: understanding the concepts, design, and construction of a relational database. The student will create table structures, queries, forms, and reports. Students will integrate these applications together to create a final capstone project for the course. (Prerequisite: None)

Web Development

COMP1140 4.00 credits

This course focuses on using XHTML to create attractive web presentations. Students will use basic XHTML page markup, good graphical design, planning a web presence, hyperlinks, FTP, using color and images, CSS, tables, multimedia, forms, and an introduction to JavaScript. Minimum typing speed of 20 wpm (35 wpm recommended) (Prerequisites: None)

Introduction to Data Communications and Networking

COMP1360 4.00 credits

This course serves as a general introduction for students seeking to acquire a foundation in current network technologies for local area networks (LANs), wide area networks (WANs), and the Internet. The course provides an introduction to the hardware, software, terminology,

assemble and configure a computer, install operating systems and software, and troubleshoot hardware and software problems. In addition, an introduction to networking is included. This course helps students prepare for CompTIA's A+ certification. (Prerequisites: None)

Web Programming

COMP2145 4.00 credits

This course covers the popular server-side language PHP and Drupal, a popular CMS (Content Management System). It includes important language concepts such as data types, control statements, debugging techniques, the use of SQL (Standard Query Language). PHP will give the student experience with LAMP (Linux, apache, MySQL, and PHP). (Prerequisites: COMP 1140 with a grade of C or higher, or a working knowledge of HTML, CSS, and FTP; COMP 1130 with a grade of C or higher, or a working knowledge of at least one programming language. It is strongly recommended that you have a minimum typing speed of at least 35 wpm as well as a working knowledge of Microsoft Access (COMP 1125).

Advanced Spreadsheets/Database & Programming

COMP2130 4.00 credits

This course covers advanced topics and VBA within the Microsoft Office suite (primarily database and spreadsheet applications). The students will solve business scenarios using advanced features of Access and Excel and the Visual Basic for Applications (VBA) macro language. In addition, the students will integrate data between these applications. Students will work on individual and team projects. (Prerequisite: COMP 1125)

Visual Basic.Net

COMP2310 4.00 credits

VB.NET covers common programming techniques using in writing Visual Basic applications as well as demonstrating how to use the popular Visual Studio programming environment. Topics include: Object Oriented programming, control statements, database programming, writing reports using Crystal Reports, and producing web-based applications with ASP.NET. The Capstone Project for this course involves creating an application for a real-life business problem. Minimum typing speed of 35 wpm. Find your typing speed at <http://typingtest.com>. Here's a free, open-source typing programming that's fun to play: TuxType. A working knowledge

components, design, and connections of a network. Network concepts such as the OSI model, topologies, and major protocols, as well as the basic functions of system administration and operation are also included. The course is operating system independent and provides an introduction to several popular network operating systems. (Prerequisite: COMP 1200 or instructor approval)

Web Services

COMP2150 4.00 credits

This course focuses on XML (eXtensible Markup Language) and the supporting technologies of XML used in person-to-computer and computer-to-computer communications. Some of the technologies covered will include using DTDs (Document Type Definitions), Schema, Namespaces, XPath, DOM, SAX, Data Models, XSLT, SVG, Flex and SOAP as well as web services and the Semantic web. Here's what you'll learn by taking this course: 1. How to create an XML document. It's just like HTML only with customized tag names. 2. Using DTD and Schemas to validate the XML data. 3. How XML can be formatted, filtered, and transformed using a language called XSLT. 4. Several common XML technologies including SVG, SMILE, RSS, and SOAP. 5. How XML will be used to create the Semantic (intelligent) Web. Minimum typing speed of 35 wpm (60 wpm recommended) Find your typing speed at <http://typingtest.com>. Here's a free, open-source typing programming that's fun to play: TuxType. (Prerequisites: Successful completion of COMP 1130 and COMP 1140, with a C or higher, or a working knowledge of XHTML, CSS, and FTP)

Java

COMP2300 4.00 credits

This course covers OOP (Object Oriented Programming) using the Java language. Inheritance, polymorphism, abstract classes, and interfaces are covered. SWING, exceptions, data structures, and I/O streams will also be covered, demonstrating each of the OO concepts. Minimum typing speed of 35 wpm. You can test your typing speed at <http://typingtest.com>. (Prerequisites: Successful completion of COMP 1130 Programming Fundamentals (with a C grade or higher), or a working knowledge of another programming language.)

IBM i5 (iSeries) Operating System

COMP2200 4.00 credits

This course covers the IBM i5 (iSeries) midrange computer and its operating system. Students will be trained in library and object management concepts, CL commands and CL programming techniques, physical and logical file management, the use of various utilities (PDM, DFU, SDA), using Query and SQL, security concepts, and backup and restore procedures. (Prerequisite: COMP 1120)

of the Windows operating system and file management. (Prerequisites: Successful completion of COMP 1130 with a grade of C or higher, or a working knowledge of at least one programming language.)

RPG IV (iSeries)

COMP2205 4.00 credits

This course introduces the RPG IV programming language which is primarily used on IBM iSeries mid-range computer systems. Topics to be covered range from basic input and output operations, report editing, arithmetic operations, control break logic, and table and array processing to physical and logical disk file manipulation, interactive programming, and subfiles. (Prerequisites: COMP 1130 or previous programming experience and COMP 2200 or Instructor Approval)

Capstone - Software Development

COMP2496 1 - 4 credits

This course is used to assess and validate student learning and performance throughout the previous semesters as well as to give students an opportunity to practice their skills in a simulated business environment. It is also an opportunity for students to demonstrate that they have achieved the learning goals established by South Central College's Computer Careers Department. This course integrates learning from the courses in the major with the courses from the rest of the student's academic experience. Students will work in teams under the supervision of faculty members who will act as project managers. (Prerequisite: Instructor Approval)

Public Speaking

COMM110 3.00 credits

This course develops or improves effective performance in acquiring, evaluating, organizing, and communicating information. Learners develop and apply critical and creative thinking to structuring arguments, making presentations, using multimedia, and supporting each other in impromptu and extemporaneous speaking. Course de-emphasizes competition and stresses personal and workplace effectiveness in communication skills. (Prerequisites: Must have a score of 86 or higher on the Sentence Skills portion of the Accuplacer test or completion of ENGL 0080 and ENGL 0090 with a grade of C or higher) (MNTC 1: Communication)

College Algebra

MATH120 4.00 credits

This course is mainly concerned with functions, most of which are algebraic. It begins with a general treatment of equations

COBOL

COMP2210 4.00 credits

This course introduces the COBOL programming language. Topics include: structured program design, basic input & output operations, arithmetic operations, editing, comparing, sorting, control-break processing, table processing, subprograms, and ISAM & VSAM file updating. (Prerequisites: COMP 1120 and 1130 or Instructor Approval)

Composition

ENGL100 4.00 credits

Composition is concerned with developing, through theory and practice, the ability to communicate in written form for personal and professional reasons. Students will develop writing skills, analytical skills, and critical thinking skills. Students will complete readings, papers, grammar exercises, and in-class activities. Students will learn methods of writing informatively and persuasively. (Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher AND a score of 85.5 or higher on the Sentence Skills portion of the Accuplacer test or completion of ENGL 0080 and ENGL 0090 with a grade of C or higher)(MNTC 1: Communication) This course has an online option.

Concepts in Math

MATH115 4.00 credits

Concepts in Mathematics is a general education survey course designed to spotlight the field as an important component of our cultural heritage. It introduces a broad range of topics from classical as well as modern mathematics. The emphasis is on problem solving and developing the logical skills to successfully defend solutions, while at the same time showing how mathematics is a creative human endeavor influencing how we perceive the world. Among the major topics considered are logic, set theory, axiomatic systems, number theory, number systems, analytic geometry, algebra, combinatorics, and elementary probability. (Prerequisites: Two years of high school algebra, completion of MATH 0085 with a grade of C or higher or a score of 75.5 or higher on the Elementary Algebra portion of the Accuplacer test) (MNTC 4: Math/Logical Reasoning)

and inequalities and then proceeds to cover linear functions, quadratic functions, other polynomial and rational functions, piecewise functions, equations involving radicals and absolute values, logarithms and exponentials, systems of equations and inequalities, permutations and combinations.

(Prerequisites: Two years of high school algebra or completion of MATH 0085 with a grade of C or higher, or a score of 75.5 on the Elementary Algebra portion of the Accuplacer test AND a score of 49.5 or higher on the College Level Math portion of the Accuplacer test) (MNTC 4: Mathematical/Logical Reasoning)

Networking Services

A.A.S. Degree • 64 Credits

AAS 3277

Degree Description

This program prepares the student with the core skills necessary for a technical support position with a focus on networking services. Training is emphasized in the areas of installing, maintaining, and troubleshooting personal computers, computer networks, and peripheral devices utilizing current industry hardware and software products. Students also receive an orientation on IBM mid-range and mainframe computer systems that are frequently integrated into corporate networks. Hands-on labs are included in the curriculum to give students exposure to current and upcoming technology.

Degree Core Competencies

1. Design and administer computer networks.
2. Maintain and repair personal computer systems.
3. Support common business application software.
4. Support current computer operating systems.

Admission Dates: Fall and Spring Semester

Offered on the North Mankato Campus

The course requirements listed below are specific to the 2013-2014 school year. If you need to view the program from previous years view our [Catalog Archive](#).

This credential is part of the Computer Careers department. [See the Computer Careers department page for more details](#)

Required Technical Courses (11 Courses)

Complete the following courses:

- [COMP1120](#) Foundations of Computing (4 Credits)
- [COMP1125](#) Spreadsheet/Database Integration (4 Credits)
- [COMP1130](#) Programming Fundamentals (4 Credits)
- [COMP1140](#) Web Development (4 Credits)
- [COMP1200](#) PC Hardware and Software Essentials (4 Credits)
- [COMP1360](#) Introduction to Data Communications and Networking (4 Credits)
- [COMP2460](#) Linux (4 Credits)
- [COMP2462](#) Microsoft Network Administration (4 Credits)
- [COMP2464](#) Application of Wireless & Mobile Networks (4 Credits)
- [COMP2466](#) Advanced Networking (4 Credits)
- [COMP2475](#) Information Warfare (4 Credits)

Required Liberal Arts & Sciences (3 Courses)

To complete an AAS Degree, students must complete 16 MNTC credits from 3 of the 10 MNTC goal areas. Select the following courses:

- [ENGL100](#) Composition (4 Credits)
- [COMM110](#) Public Speaking (3 Credits)
- [MATH115](#) Concepts in Math (4 Credits)
- Or
- [MATH120](#) College Algebra (4 Credits)

Required Capstone (4 Credits)

Complete 4 credits:

- [COMP2498](#) Capstone - Networking Services (1 - 4 Credits)

PLEASE NOTE: All program plans are preliminary and curriculum may change without notice. Your [catalog of record](#) may have different requirements.

Elective Liberal Arts & Sciences

Choose an additional 5 credits from MNTC Goal Areas 2,3,5,6,7,8,9 or 10

Networking Services - Associate of Applied Science Degree Course Descriptions

Foundations of Computing

COMP1120 4.00 credits

This course introduces the student to the world of information system. Students will explore the history of computing, career opportunities in information technology, and computer concepts as they apply in a business environment. Topics to be covered include an introduction to basic web-page development, command-line interfaces, file management principles, computer numbering systems, and database principles. Students will also receive initial exposure to the IBM mid-range computer platform and computer programming and algorithms through the use of problem analysis, pseudo-code and entry level programming languages. (Prerequisite: None)

Programming Fundamentals

COMP1130 4.00 credits

Programming Fundamentals is designed to be a person's first exposure to the world of computer programming. This course covers how to design and implement a computer program, writing a program that will make different types of decisions, how to solve problems using computer programs that remember things, make decisions, and perform repetitive tasks. The course uses both Alice and JavaScript to help the student meet these objectives. Alice is a 3-D programming environment from Carnegie Mellon University designed to teach programming concepts. It is an enjoyable and easy-to-user programming environment that assists the student in making 3-D, animated movies. JavaScript, is a popular language used for by web browsers to get input from the user. JavaScript teaches client-side scripting. This course is part of the Web Programming Certificate and the AAS Information Systems programming degree at South Central College. You will need to have a basic understanding of (X)HTML for the second half of this course which uses JavaScript. A minimum typing speed of 20-35 wpm is recommended. (Prerequisites: COMP 1120)

PC Hardware and Software Essentials

COMP1200 4.00 credits

PC Hardware and Software, presents an in-depth exposure to computer hardware and operating systems. Students learn the functionality of hardware and software components as well as suggested best practices in maintenance, and safety issues. Through hands on activities and labs, students learn how to

Spreadsheet/Database Integration

COMP1125 4.00 credits

The focus of this course will be on the core competencies of Excel and Access and their integration with Word, PowerPoint, and each other. Topics to be covered in Excel include: formatting, creating formulas, creating charts and pivot tables, linking files, using templates and hyperlinks, and the use of functions, including logical and lookup functions. Topics covered in Access include: understanding the concepts, design, and construction of a relational database. The student will create table structures, queries, forms, and reports. Students will integrate these applications together to create a final capstone project for the course. (Prerequisite: None)

Web Development

COMP1140 4.00 credits

This course focuses on using XHTML to create attractive web presentations. Students will use basic XHTML page markup, good graphical design, planning a web presence, hyperlinks, FTP, using color and images, CSS, tables, multimedia, forms, and an introduction to JavaScript. Minimum typing speed of 20 wpm (35 wpm recommended) (Prerequisites: None)

Introduction to Data Communications and Networking

COMP1360 4.00 credits

This course serves as a general introduction for students seeking to acquire a foundation in current network technologies for local area networks (LANs), wide area networks (WANs), and the Internet. The course provides an introduction to the hardware, software, terminology,

assemble and configure a computer, install operating systems and software, and troubleshoot hardware and software problems. In addition, an introduction to networking is included. This course helps students prepare for CompTIA's A+ certification. (Prerequisites: None)

Linux

COMP2460 4.00 credits

The Linux operating system is extremely popular in the world of servers and the internet and is gaining ground on the desktop. This course takes a student through the Linux operating system from learning how to use the command line and text-based shells through the administration of network services. Major topics include file management, user management, shell scripting and popular programming languages, system administration including print services and telnet, ssh, ftp, http, NFS, and Samba services. (Prerequisites: COMP 1360)

Application of Wireless & Mobile Networks

COMP2464 4.00 credits

Application of Wireless and Mobile Networks is an introductory course that will focus on the design, planning, implementation, operation and troubleshooting of wireless networks. It covers a comprehensive overview of technologies, security, and design best practices with particular emphasis on hands-on skills in the areas of wireless LAN setup & troubleshooting, 802.11 technologies, products and solutions, Site Surveys, resilient WLAN design, installation and configuration, WLAN Security - 802.1x, LEAP, WEP, SSID, and vendor interoperability strategies. This course helps students prepare for CWNA (Certified Wireless Network Administrator) Certification Exam. (Prerequisite: COMP 1360)

Information Warfare

COMP2475 4.00 credits

An introduction to the various technical and administrative aspects of Information Security (INFOSEC), this course provides the foundation for understanding the key issues associated with protecting information assets, determining the levels of protection and response to security incidents, and designing a consistent, reasonable information security system with appropriate intrusion detection and reporting features. Students will be exposed to a wide spectrum of security activities, methods, methodologies, and procedures. The terminal objectives for this course as defined in NSTISSI

components, design, and connections of a network. Network concepts such as the OSI model, topologies, and major protocols, as well as the basic functions of system administration and operation are also included. The course is operating system independent and provides an introduction to several popular network operating systems. (Prerequisite: COMP 1200 or instructor approval)

Microsoft Network Administration

COMP2462 4.00 credits

The main goal of this course is to provide students with a comprehensive understanding of Microsoft Windows Server and to prepare students to tackle server administration. The course focuses on the requirements of the Microsoft Certified Systems Administrator (MCSA) credential and the skills to successfully implement, manage, and troubleshoot the ongoing needs of Microsoft Windows 2003 based operating environments. Students have an opportunity to apply their knowledge through hands-on projects and case study assignments. Students will learn how to install and administer Active Directory services and how to manage Active objects. Students will use Microsoft Management Console to monitor system performance, to administer Internet Information Services, and to administer user accounts, group accounts, and group policies. They will learn how to administer print services. They will learn how to install and administer network protocols and services such as virtual private networking, Routing and Remote Access Service, DHCP, WINS, and DNS. (Prerequisite: COMP 1360)

Advanced Networking

COMP2466 4.00 credits

This course addresses the integration of routing and switching technologies to create efficient enterprise networks. Students will learn to design, build, and configure a network. Students will configure routing protocols and perform LAN, WAN, and VLAN troubleshooting using a structured methodology based on the OSI model. Upon completing this course, the learner will be able to select and implement the appropriate Cisco IOS services required to build a scalable, efficient, and highly available network. This course helps students prepare for the CCNA (Cisco Certified Network Administrator) exam. (Prerequisite: COMP 1360)

Capstone - Networking Services

COMP2498 1 - 4 credits

This course is an opportunity for students to demonstrate that they have achieved the learning goals established by South Central College's Computer Careers Department. This course integrates learning from the courses in the major with the courses from the rest of the student's academic experience. It requires the application of that learning to a service learning project that meets the community need of providing technology assistance to lower income families. Students will gain real world experience using their troubleshooting skills to fix, upgrade and refurbish donated computers. These

Training Standards 4011 are: 1. Understand the threats to and vulnerabilities of information systems. 2. Recognize the need to protect data, information, and the means to process it. 3. Develop a working knowledge of INFOSEC principles and practices. 4. Design, execute, and evaluate INFOSEC security procedures and practices. (Prerequisite: COMP 1360)

computers are then recycled back into the community to no-profit organizations and families in need. Students will have an opportunity for reflection through assignments that promote greater understanding of computer concepts and themselves. Students are strongly encouraged to "pass it on," by sharing their computer skills and knowledge through a mentoring process of community members and volunteers. This course will provide an environment, where students can develop a good balance between their technical and "soft" skills. It will include concepts such as team dynamics, conflict management, thinking "outside the box", working with diverse populations and developing professional attitudes and habits. (Prerequisite: Instructor Approval)

Composition

ENGL100 4.00 credits

Composition is concerned with developing, through theory and practice, the ability to communicate in written form for personal and professional reasons. Students will develop writing skills, analytical skills, and critical thinking skills. Students will complete readings, papers, grammar exercises, and in-class activities. Students will learn methods of writing informatively and persuasively. (Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher AND a score of 85.5 or higher on the Sentence Skills portion of the Accuplacer test or completion of ENGL 0080 and ENGL 0090 with a grade of C or higher)(MNTC 1: Communication) This course has an online option.

Concepts in Math

MATH115 4.00 credits

Concepts in Mathematics is a general education survey course designed to spotlight the field as an important component of our cultural heritage. It introduces a broad range of topics from classical as well as modern mathematics. The emphasis is on problem solving and developing the logical skills to successfully defend solutions, while at the same time showing how mathematics is a creative human endeavor influencing how we perceive the world. Among the major topics considered are logic, set theory, axiomatic systems, number theory, number systems, analytic geometry, algebra, combinatorics, and elementary probability. (Prerequisites: Two years of high school algebra, completion of MATH 0085 with a grade of C or higher or a score of 75.5 or higher on the Elementary Algebra portion of the Accuplacer test) (MNTC 4: Math/Logical Reasoning)

Public Speaking

COMM110 3.00 credits

This course develops or improves effective performance in acquiring, evaluating, organizing, and communicating information. Learners develop and apply critical and creative thinking to structuring arguments, making presentations, using multimedia, and supporting each other in impromptu and extemporaneous speaking. Course de-emphasizes competition and stresses personal and workplace effectiveness in communication skills. (Prerequisites: Must have a score of 86 or higher on the Sentence Skills portion of the Accuplacer test or completion of ENGL 0080 and ENGL 0090 with a grade of C or higher) (MNTC 1: Communication)

College Algebra

MATH120 4.00 credits

This course is mainly concerned with functions, most of which are algebraic. It begins with a general treatment of equations and inequalities and then proceeds to cover linear functions, quadratic functions, other polynomial and rational functions, piecewise functions, equations involving radicals and absolute values, logarithms and exponentials, systems of equations and inequalities, permutations and combinations. (Prerequisites: Two years of high school algebra or completion of MATH 0085 with a grade of C or higher, or a score of 75.5 on the Elementary Algebra portion of the Accuplacer test AND a score of 49.5 or higher on the College Level Math portion of the Accuplacer test) (MNTC 4: Mathematical/Logical Reasoning)

Information Systems

Diploma • 64 Credits

DIP 3276

Degree Description

This program prepares the student with the core skills necessary for a technical support position with a focus on networking services. Training is emphasized in the areas of installing, maintaining, and troubleshooting personal computers, computer networks, and peripheral devices utilizing current industry hardware and software products. Students also receive an orientation on IBM mid-range and mainframe computer systems that are frequently integrated into corporate networks. Hands-on labs are included in the curriculum to give students exposure to current and upcoming technology.

Diploma Core Competencies

1. Design and code software applications using a variety of programming languages.
2. Utilize and maintain relational databases.
3. Use web application development tools.
4. Apply current web server technologies

Admission Dates: Fall and Spring Semester

Offered on the North Mankato Campus

The course requirements listed below are specific to the 2013-2014 school year. If you need to view the program from previous years view our [Catalog Archive](#).

This credential is part of the Computer Careers department. [See the Computer Careers department page for more details](#)

Required Technical Courses (6 Courses)

Complete all of the following courses:

- [COMP1120](#) Foundations of Computing (4 Credits)
- [COMP1125](#) Spreadsheet/Database Integration (4 Credits)
- [COMP1130](#) Programming Fundamentals (4 Credits)
- [COMP1140](#) Web Development (4 Credits)
- [COMP1200](#) PC Hardware and Software Essentials (4 Credits)
- [COMP1360](#) Introduction to Data Communications and Networking (4 Credits)

Technical Electives (9 Credits)

Choose 9 credits from the following:

- [COMP2460](#) Linux (4 Credits)
- [COMP2462](#) Microsoft Network Administration (4 Credits)
- [COMP2464](#) Application of Wireless & Mobile Networks (4 Credits)
- [COMP2466](#) Advanced Networking (4 Credits)
- [COMP2475](#) Information Warfare (4 Credits)
- [COMP2498](#) Capstone - Networking Services (1 - 4 Credits)

Technical Electives (20 Credits)

Choose 20 credits from the following courses:

- WEB DEV
 - [COMP2145](#) Web Programming (4 Credits)
 - [COMP2150](#) Web Services (4 Credits)
- PC SOFTWARE DEV
 - [COMP2130](#) Advanced Spreadsheets/Database & Programming (4 Credits)
 - [COMP2300](#) Java (4 Credits)
 - [COMP2310](#) Visual Basic.Net (4 Credits)
- ENTERPRISE DEV
 - [COMP2200](#) IBM i5 (iSeries) Operating System (4 Credits)
 - [COMP2205](#) RPG IV (iSeries) (4 Credits)
 - [COMP2210](#) COBOL (4 Credits)

Required Capstone (4 Credits)

Complete 4 credits:

- [COMP2496](#) Capstone - Software Development (1 - 4 Credits)

PLEASE NOTE: All program plans are preliminary and curriculum may change without notice. Your [catalog of record](#) may have different requirements.

Required Liberal Arts and Sciences (2 Courses)

Select the following courses:

[ENGL100](#) Composition (4 Credits)

[COMM110](#) Public Speaking (3 Credits)

Information Systems - Diploma of Occupational Proficiency Course Descriptions

Foundations of Computing

COMP1120 4.00 credits

This course introduces the student to the world of information system. Students will explore the history of computing, career opportunities in information technology, and computer concepts as they apply in a business environment. Topics to be covered include an introduction to basic web-page development, command-line interfaces, file management principles, computer numbering systems, and database principles. Students will also receive initial exposure to the IBM mid-range computer platform and computer programming and algorithms through the use of problem analysis, pseudo-code and entry level programming languages. (Prerequisite: None)

Programming Fundamentals

COMP1130 4.00 credits

Programming Fundamentals is designed to be a person's first exposure to the world of computer programming. This course covers how to design and implement a computer program, writing a program that will make different types of decisions, how to solve problems using computer programs that remember things, make decisions, and perform repetitive tasks. The course uses both Alice and JavaScript to help the student meet these objectives. Alice is a 3-D programming environment from Carnegie Mellon University designed to teach programming concepts. It is an enjoyable and easy-to-user programming environment that assists the student in making 3-D, animated movies. JavaScript, is a popular language used for by web browsers to get input from the user. JavaScript teaches client-side scripting. This course is part of the Web Programming Certificate and the AAS Information Systems programming degree at South Central College. You will need to have a basic understanding of (X)HTML for the second half of this course which uses JavaScript. A minimum typing speed of 20-35 wpm is recommended. (Prerequisites: COMP 1120)

PC Hardware and Software Essentials

COMP1200 4.00 credits

PC Hardware and Software, presents an in-depth exposure to computer hardware and operating systems. Students learn the functionality of hardware and software components as well as suggested best practices in maintenance, and safety issues. Through hands on activities and labs, students learn how to

Spreadsheet/Database Integration

COMP1125 4.00 credits

The focus of this course will be on the core competencies of Excel and Access and their integration with Word, PowerPoint, and each other. Topics to be covered in Excel include: formatting, creating formulas, creating charts and pivot tables, linking files, using templates and hyperlinks, and the use of functions, including logical and lookup functions. Topics covered in Access include: understanding the concepts, design, and construction of a relational database. The student will create table structures, queries, forms, and reports. Students will integrate these applications together to create a final capstone project for the course. (Prerequisite: None)

Web Development

COMP1140 4.00 credits

This course focuses on using XHTML to create attractive web presentations. Students will use basic XHTML page markup, good graphical design, planning a web presence, hyperlinks, FTP, using color and images, CSS, tables, multimedia, forms, and an introduction to JavaScript. Minimum typing speed of 20 wpm (35 wpm recommended) (Prerequisites: None)

Introduction to Data Communications and Networking

COMP1360 4.00 credits

This course serves as a general introduction for students seeking to acquire a foundation in current network technologies for local area networks (LANs), wide area networks (WANs), and the Internet. The course provides an introduction to the hardware, software, terminology,

assemble and configure a computer, install operating systems and software, and troubleshoot hardware and software problems. In addition, an introduction to networking is included. This course helps students prepare for CompTIA's A+ certification. (Prerequisites: None)

Web Programming

COMP2145 4.00 credits

This course covers the popular server-side language PHP and Drupal, a popular CMS (Content Management System). It includes important language concepts such as data types, control statements, debugging techniques, the use of SQL (Standard Query Language). PHP will give the student experience with LAMP (Linux, apache, MySQL, and PHP). (Prerequisites: COMP 1140 with a grade of C or higher, or a working knowledge of HTML, CSS, and FTP; COMP 1130 with a grade of C or higher, or a working knowledge of at least one programming language. It is strongly recommended that you have a minimum typing speed of at least 35 wpm as well as a working knowledge of Microsoft Access (COMP 1125).

Advanced Spreadsheets/Database & Programming

COMP2130 4.00 credits

This course covers advanced topics and VBA within the Microsoft Office suite (primarily database and spreadsheet applications). The students will solve business scenarios using advanced features of Access and Excel and the Visual Basic for Applications (VBA) macro language. In addition, the students will integrate data between these applications. Students will work on individual and team projects. (Prerequisite: COMP 1125)

Visual Basic.Net

COMP2310 4.00 credits

VB.NET covers common programming techniques using in writing Visual Basic applications as well as demonstrating how to use the popular Visual Studio programming environment. Topics include: Object Oriented programming, control statements, database programming, writing reports using Crystal Reports, and producing web-based applications with ASP.NET. The Capstone Project for this course involves creating an application for a real-life business problem. Minimum typing speed of 35 wpm. Find your typing speed at <http://typingtest.com>. Here's a free, open-source typing programming that's fun to play: TuxType. A working knowledge

components, design, and connections of a network. Network concepts such as the OSI model, topologies, and major protocols, as well as the basic functions of system administration and operation are also included. The course is operating system independent and provides an introduction to several popular network operating systems. (Prerequisite: COMP 1200 or instructor approval)

Web Services

COMP2150 4.00 credits

This course focuses on XML (eXtensible Markup Language) and the supporting technologies of XML used in person-to-computer and computer-to-computer communications. Some of the technologies covered will include using DTDs (Document Type Definitions), Schema, Namespaces, XPath, DOM, SAX, Data Models, XSLT, SVG, Flex and SOAP as well as web services and the Semantic web. Here's what you'll learn by taking this course: 1. How to create an XML document. It's just like HTML only with customized tag names. 2. Using DTD and Schemas to validate the XML data. 3. How XML can be formatted, filtered, and transformed using a language called XSLT. 4. Several common XML technologies including SVG, SMILE, RSS, and SOAP. 5. How XML will be used to create the Semantic (intelligent) Web. Minimum typing speed of 35 wpm (60 wpm recommended) Find your typing speed at <http://typingtest.com>. Here's a free, open-source typing programming that's fun to play: TuxType. (Prerequisites: Successful completion of COMP 1130 and COMP 1140, with a C or higher, or a working knowledge of XHTML, CSS, and FTP)

Java

COMP2300 4.00 credits

This course covers OOP (Object Oriented Programming) using the Java language. Inheritance, polymorphism, abstract classes, and interfaces are covered. SWING, exceptions, data structures, and I/O streams will also be covered, demonstrating each of the OO concepts. Minimum typing speed of 35 wpm. You can test your typing speed at <http://typingtest.com>. (Prerequisites: Successful completion of COMP 1130 Programming Fundamentals (with a C grade or higher), or a working knowledge of another programming language.)

IBM i5 (iSeries) Operating System

COMP2200 4.00 credits

This course covers the IBM i5 (iSeries) midrange computer and its operating system. Students will be trained in library and object management concepts, CL commands and CL programming techniques, physical and logical file management, the use of various utilities (PDM, DFU, SDA), using Query and SQL, security concepts, and backup and restore procedures. (Prerequisite: COMP 1120)

of the Windows operating system and file management. (Prerequisites: Successful completion of COMP 1130 with a grade of C or higher, or a working knowledge of at least one programming language.)

RPG IV (iSeries)

COMP2205 4.00 credits

This course introduces the RPG IV programming language which is primarily used on IBM iSeries mid-range computer systems. Topics to be covered range from basic input and output operations, report editing, arithmetic operations, control break logic, and table and array processing to physical and logical disk file manipulation, interactive programming, and subfiles. (Prerequisites: COMP 1130 or previous programming experience and COMP 2200 or Instructor Approval)

Linux

COMP2460 4.00 credits

The Linux operating system is extremely popular in the world of servers and the internet and is gaining ground on the desktop. This course takes a student through the Linux operating system from learning how to use the command line and text-based shells through the administration of network services. Major topics include file management, user management, shell scripting and popular programming languages, system administration including print services and telnet, ssh, ftp, http, NFS, and Samba services. (Prerequisites: COMP 1360)

Application of Wireless & Mobile Networks

COMP2464 4.00 credits

Application of Wireless and Mobile Networks is an introductory course that will focus on the design, planning, implementation, operation and troubleshooting of wireless networks. It covers a comprehensive overview of technologies, security, and design best practices with particular emphasis on hands-on skills in the areas of wireless LAN setup & troubleshooting, 802.11 technologies, products and solutions, Site Surveys, resilient WLAN design, installation and configuration, WLAN Security - 802.1x, LEAP, WEP, SSID, and vendor interoperability strategies. This course helps students prepare for CWNA (Certified Wireless Network Administrator) Certification Exam. (Prerequisite: COMP 1360)

Information Warfare

COMP2475 4.00 credits

COBOL

COMP2210 4.00 credits

This course introduces the COBOL programming language. Topics include: structured program design, basic input & output operations, arithmetic operations, editing, comparing, sorting, control-break processing, table processing, subprograms, and ISAM & VSAM file updating. (Prerequisites: COMP 1120 and 1130 or Instructor Approval)

Microsoft Network Administration

COMP2462 4.00 credits

The main goal of this course is to provide students with a comprehensive understanding of Microsoft Windows Server and to prepare students to tackle server administration. The course focuses on the requirements of the Microsoft Certified Systems Administrator (MCSA) credential and the skills to successfully implement, manage, and troubleshoot the ongoing needs of Microsoft Windows 2003 based operating environments. Students have an opportunity to apply their knowledge through hands-on projects and case study assignments. Students will learn how to install and administer Active Directory services and how to manage Active objects. Students will use Microsoft Management Console to monitor system performance, to administer Internet Information Services, and to administer user accounts, group accounts, and group policies. They will learn how to administer print services. They will learn how to install and administer network protocols and services such as virtual private networking, Routing and Remote Access Service, DHCP, WINS, and DNS. (Prerequisite: COMP 1360)

Advanced Networking

COMP2466 4.00 credits

This course addresses the integration of routing and switching technologies to create efficient enterprise networks. Students will learn to design, build, and configure a network. Students will configure routing protocols and perform LAN, WAN, and VLAN troubleshooting using a structured methodology based on the OSI model. Upon completing this course, the learner will be able to select and implement the appropriate Cisco IOS services required to build a scalable, efficient, and highly available network. This course helps students prepare for the CCNA (Cisco Certified Network Administrator) exam. (Prerequisite: COMP 1360)

Capstone - Networking Services

COMP2498 1 - 4 credits

An introduction to the various technical and administrative aspects of Information Security (INFOSEC), this course provides the foundation for understanding the key issues associated with protecting information assets, determining the levels of protection and response to security incidents, and designing a consistent, reasonable information security system with appropriate intrusion detection and reporting features. Students will be exposed to a wide spectrum of security activities, methods, methodologies, and procedures. The terminal objectives for this course as defined in NSTISSI Training Standards 4011 are: 1. Understand the threats to and vulnerabilities of information systems. 2. Recognize the need to protect data, information, and the means to process it. 3. Develop a working knowledge of INFOSEC principles and practices. 4. Design, execute, and evaluate INFOSEC security procedures and practices. (Prerequisite: COMP 1360)

This course is an opportunity for students to demonstrate that they have achieved the learning goals established by South Central College's Computer Careers Department. This course integrates learning from the courses in the major with the courses from the rest of the student's academic experience. It requires the application of that learning to a service learning project that meets the community need of providing technology assistance to lower income families. Students will gain real world experience using their troubleshooting skills to fix, upgrade and refurbish donated computers. These computers are then recycled back into the community to non-profit organizations and families in need. Students will have an opportunity for reflection through assignments that promote greater understanding of computer concepts and themselves. Students are strongly encouraged to "pass it on," by sharing their computer skills and knowledge through a mentoring process of community members and volunteers. This course will provide an environment, where students can develop a good balance between their technical and "soft" skills. It will include concepts such as team dynamics, conflict management, thinking "outside the box", working with diverse populations and developing professional attitudes and habits. (Prerequisite: Instructor Approval)

Capstone - Software Development

COMP2496 1 - 4 credits

This course is used to assess and validate student learning and performance throughout the previous semesters as well as to give students an opportunity to practice their skills in a simulated business environment. It is also an opportunity for students to demonstrate that they have achieved the learning goals established by South Central College's Computer Careers Department. This course integrates learning from the courses in the major with the courses from the rest of the student's academic experience. Students will work in teams under the supervision of faculty members who will act as project managers. (Prerequisite: Instructor Approval)

Composition

ENGL100 4.00 credits

Composition is concerned with developing, through theory and practice, the ability to communicate in written form for personal and professional reasons. Students will develop writing skills, analytical skills, and critical thinking skills. Students will complete readings, papers, grammar exercises, and in-class activities. Students will learn methods of writing informatively and persuasively. (Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher AND a score of 85.5 or higher on the Sentence Skills portion of the Accuplacer test or completion of ENGL 0080 and ENGL 0090 with a grade of C or higher)(MNTC 1: Communication) This course has an online option.

Public Speaking

COMM110 3.00 credits

This course develops or improves effective performance in acquiring, evaluating, organizing, and communicating information. Learners develop and apply critical and creative thinking to structuring arguments, making presentations, using multimedia, and supporting each other in impromptu and extemporaneous speaking. Course de-emphasizes competition and stresses personal and workplace effectiveness in communication skills. (Prerequisites: Must have a score of 86 or higher on the Sentence Skills portion of the Accuplacer test or completion of ENGL 0080 and ENGL 0090 with a grade of C or higher) (MNTC 1: Communication)

Networking Services

Diploma • 64 Credits

DIP 3278

Degree Description

This program prepares the student with the core skills necessary for a technical support position with a focus on networking services. Training is emphasized in the areas of installing, maintaining, and troubleshooting personal computers, computer networks, and peripheral devices utilizing current industry hardware and software products. Students also receive an orientation on IBM mid-range and mainframe computer systems that are frequently integrated into corporate networks. Hands-on labs are included in the curriculum to give students exposure to current and upcoming technology.

Diploma Core Competencies

1. Design and administer computer networks.
2. Maintain and repair personal computer systems.
3. Support common business application software.
4. Support current computer operating systems.

Admission Dates: Fall and Spring Semester

Offered on the North Mankato Campus

The course requirements listed below are specific to the 2013-2014 school year. If you need to view the program from previous years view our [Catalog Archive](#).

This credential is part of the Computer Careers department. [See the Computer Careers department page for more details](#)

Required Technical Courses (11 Courses)

Complete the following courses:

- [COMP1120](#) Foundations of Computing (4 Credits)
- [COMP1125](#) Spreadsheet/Database Integration (4 Credits)
- [COMP1130](#) Programming Fundamentals (4 Credits)
- [COMP1140](#) Web Development (4 Credits)
- [COMP1200](#) PC Hardware and Software Essentials (4 Credits)
- [COMP1360](#) Introduction to Data Communications and Networking (4 Credits)
- [COMP2460](#) Linux (4 Credits)
- [COMP2462](#) Microsoft Network Administration (4 Credits)
- [COMP2464](#) Application of Wireless & Mobile Networks (4 Credits)
- [COMP2466](#) Advanced Networking (4 Credits)
- [COMP2475](#) Information Warfare (4 Credits)

Required Capstone (4 Credits)

Complete 4 credits:

- [COMP2498](#) Capstone - Networking Services (1 - 4 Credits)

Technical Electives (9 Credits)

You must complete 9 credits from the following courses:

- [COMP2130](#) Advanced Spreadsheets/Database & Programming (4 Credits)
- [COMP2145](#) Web Programming (4 Credits)
- [COMP2150](#) Web Services (4 Credits)
- [COMP2200](#) IBM i5 (iSeries) Operating System (4 Credits)
- [COMP2205](#) RPG IV (iSeries) (4 Credits)
- [COMP2210](#) COBOL (4 Credits)
- [COMP2300](#) Java (4 Credits)
- [COMP2310](#) Visual Basic.Net (4 Credits)
- [COMP2496](#) Capstone - Software Development (1 - 4 Credits)

PLEASE NOTE: All program plans are preliminary and curriculum may change without notice. Your [catalog of record](#) may have different requirements.

Required Liberal Arts & Sciences (2 Courses)

Complete the following courses:

- [ENGL100](#) Composition (4 Credits)
- [COMM110](#) Public Speaking (3 Credits)

Networking Services - Diploma of Occupational Proficiency Course Descriptions

Foundations of Computing

COMP1120 4.00 credits

This course introduces the student to the world of information system. Students will explore the history of computing, career opportunities in information technology, and computer concepts as they apply in a business environment. Topics to be covered include an introduction to basic web-page development, command-line interfaces, file management principles, computer numbering systems, and database principles. Students will also receive initial exposure to the IBM mid-range computer platform and computer programming and algorithms through the use of problem analysis, pseudo-code and entry level programming languages. (Prerequisite: None)

Programming Fundamentals

COMP1130 4.00 credits

Programming Fundamentals is designed to be a person's first exposure to the world of computer programming. This course covers how to design and implement a computer program, writing a program that will make different types of decisions, how to solve problems using computer programs that remember things, make decisions, and perform repetitive tasks. The course uses both Alice and JavaScript to help the student meet these objectives. Alice is a 3-D programming environment from Carnegie Mellon University designed to teach programming concepts. It is an enjoyable and easy-to-user programming environment that assists the student in making 3-D, animated movies. JavaScript, is a popular language used for by web browsers to get input from the user. JavaScript teaches client-side scripting. This course is part of the Web Programming Certificate and the AAS Information Systems programming degree at South Central College. You will need to have a basic understanding of (X)HTML for the second half of this course which uses JavaScript. A minimum typing speed of 20-35 wpm is recommended. (Prerequisites: COMP 1120)

PC Hardware and Software Essentials

COMP1200 4.00 credits

PC Hardware and Software, presents an in-depth exposure to computer hardware and operating systems. Students learn the functionality of hardware and software components as well as suggested best practices in maintenance, and safety issues. Through hands on activities and labs, students learn how to

Spreadsheet/Database Integration

COMP1125 4.00 credits

The focus of this course will be on the core competencies of Excel and Access and their integration with Word, PowerPoint, and each other. Topics to be covered in Excel include: formatting, creating formulas, creating charts and pivot tables, linking files, using templates and hyperlinks, and the use of functions, including logical and lookup functions. Topics covered in Access include: understanding the concepts, design, and construction of a relational database. The student will create table structures, queries, forms, and reports. Students will integrate these applications together to create a final capstone project for the course. (Prerequisite: None)

Web Development

COMP1140 4.00 credits

This course focuses on using XHTML to create attractive web presentations. Students will use basic XHTML page markup, good graphical design, planning a web presence, hyperlinks, FTP, using color and images, CSS, tables, multimedia, forms, and an introduction to JavaScript. Minimum typing speed of 20 wpm (35 wpm recommended) (Prerequisites: None)

Introduction to Data Communications and Networking

COMP1360 4.00 credits

This course serves as a general introduction for students seeking to acquire a foundation in current network technologies for local area networks (LANs), wide area networks (WANs), and the Internet. The course provides an introduction to the hardware, software, terminology,

assemble and configure a computer, install operating systems and software, and troubleshoot hardware and software problems. In addition, an introduction to networking is included. This course helps students prepare for CompTIA's A+ certification. (Prerequisites: None)

Linux

COMP2460 4.00 credits

The Linux operating system is extremely popular in the world of servers and the internet and is gaining ground on the desktop. This course takes a student through the Linux operating system from learning how to use the command line and text-based shells through the administration of network services. Major topics include file management, user management, shell scripting and popular programming languages, system administration including print services and telnet, ssh, ftp, http, NFS, and Samba services. (Prerequisites: COMP 1360)

Application of Wireless & Mobile Networks

COMP2464 4.00 credits

Application of Wireless and Mobile Networks is an introductory course that will focus on the design, planning, implementation, operation and troubleshooting of wireless networks. It covers a comprehensive overview of technologies, security, and design best practices with particular emphasis on hands-on skills in the areas of wireless LAN setup & troubleshooting, 802.11 technologies, products and solutions, Site Surveys, resilient WLAN design, installation and configuration, WLAN Security - 802.1x, LEAP, WEP, SSID, and vendor interoperability strategies. This course helps students prepare for CWNA (Certified Wireless Network Administrator) Certification Exam. (Prerequisite: COMP 1360)

Information Warfare

COMP2475 4.00 credits

An introduction to the various technical and administrative aspects of Information Security (INFOSEC), this course provides the foundation for understanding the key issues associated with protecting information assets, determining the levels of protection and response to security incidents, and designing a consistent, reasonable information security system with appropriate intrusion detection and reporting features. Students will be exposed to a wide spectrum of security activities, methods, methodologies, and procedures. The terminal objectives for this course as defined in NSTISSI

components, design, and connections of a network. Network concepts such as the OSI model, topologies, and major protocols, as well as the basic functions of system administration and operation are also included. The course is operating system independent and provides an introduction to several popular network operating systems. (Prerequisite: COMP 1200 or instructor approval)

Microsoft Network Administration

COMP2462 4.00 credits

The main goal of this course is to provide students with a comprehensive understanding of Microsoft Windows Server and to prepare students to tackle server administration. The course focuses on the requirements of the Microsoft Certified Systems Administrator (MCSA) credential and the skills to successfully implement, manage, and troubleshoot the ongoing needs of Microsoft Windows 2003 based operating environments. Students have an opportunity to apply their knowledge through hands-on projects and case study assignments. Students will learn how to install and administer Active Directory services and how to manage Active objects. Students will use Microsoft Management Console to monitor system performance, to administer Internet Information Services, and to administer user accounts, group accounts, and group policies. They will learn how to administer print services. They will learn how to install and administer network protocols and services such as virtual private networking, Routing and Remote Access Service, DHCP, WINS, and DNS. (Prerequisite: COMP 1360)

Advanced Networking

COMP2466 4.00 credits

This course addresses the integration of routing and switching technologies to create efficient enterprise networks. Students will learn to design, build, and configure a network. Students will configure routing protocols and perform LAN, WAN, and VLAN troubleshooting using a structured methodology based on the OSI model. Upon completing this course, the learner will be able to select and implement the appropriate Cisco IOS services required to build a scalable, efficient, and highly available network. This course helps students prepare for the CCNA (Cisco Certified Network Administrator) exam. (Prerequisite: COMP 1360)

Advanced Spreadsheets/Database & Programming

COMP2130 4.00 credits

This course covers advanced topics and VBA within the Microsoft Office suite (primarily database and spreadsheet applications). The students will solve business scenarios using advanced features of Access and Excel and the Visual Basic for Applications (VBA) macro language. In addition, the students will integrate data between these applications. Students will work on individual and team projects. (Prerequisite: COMP 1125)

Training Standards 4011 are: 1. Understand the threats to and vulnerabilities of information systems. 2. Recognize the need to protect data, information, and the means to process it. 3. Develop a working knowledge of INFOSEC principles and practices. 4. Design, execute, and evaluate INFOSEC security procedures and practices. (Prerequisite: COMP 1360)

Web Programming

COMP2145 4.00 credits

This course covers the popular server-side language PHP and Drupal, a popular CMS (Content Management System). It includes important language concepts such as data types, control statements, debugging techniques, the use of SQL (Standard Query Language). PHP will give the student experience with LAMP (Linux, apache, MySQL, and PHP). (Prerequisites: COMP 1140 with a grade of C or higher, or a working knowledge of HTML, CSS, and FTP; COMP 1130 with a grade of C or higher, or a working knowledge of at least one programming language. It is strongly recommended that you have a minimum typing speed of at least 35 wpm as well as a working knowledge of Microsoft Access (COMP 1125).

Web Services

COMP2150 4.00 credits

This course focuses on XML (eXtensible Markup Language) and the supporting technologies of XML used in person-to-computer and computer-to-computer communications. Some of the technologies covered will include using DTDs (Document Type Definitions), Schema, Namespaces, XPath, DOM, SAX, Data Models, XSLT, SVG, Flex and SOAP as well as web services and the Semantic web. Here's what you'll learn by taking this course: 1. How to create an XML document. It's just like HTML only with customized tag names. 2. Using DTD and Schemas to validate the XML data. 3. How XML can be formatted, filtered, and transformed using a language called XSLT. 4. Several common XML technologies including SVG, SMILE, RSS, and SOAP. 5. How XML will be used to create the Semantic (intelligent) Web. Minimum typing speed of 35 wpm (60 wpm recommended) Find your typing speed at <http://typingtest.com>. Here's a free, open-source typing programming that's fun to play: TuxType. (Prerequisites: Successful completion of COMP 1130 and COMP 1140, with a C or higher, or a working knowledge of XHTML, CSS, and FTP)

IBM i5 (iSeries) Operating System

COMP2200 4.00 credits

This course covers the IBM i5 (iSeries) midrange computer and its operating system. Students will be trained in library and object management concepts, CL commands and CL programming techniques, physical and logical file management, the use of various utilities (PDM, DFU, SDA), using Query and SQL, security concepts, and backup and restore procedures. (Prerequisite: COMP 1120)

RPG IV (iSeries)

COMP2205 4.00 credits

This course introduces the RPG IV programming language which is primarily used on IBM iSeries mid-range computer systems. Topics to be covered range from basic input and output operations, report editing, arithmetic operations, control break logic, and table and array processing to physical and logical disk file manipulation, interactive programming, and subfiles. (Prerequisites: COMP 1130 or previous programming experience and COMP 2200 or Instructor Approval)

COBOL

COMP2210 4.00 credits

This course introduces the COBOL programming language. Topics include: structured program design, basic input & output operations, arithmetic operations, editing, comparing, sorting, control-break processing, table processing, subprograms, and ISAM & VSAM file updating. (Prerequisites: COMP 1120 and 1130 or Instructor Approval)

Java

COMP2300 4.00 credits

This course covers OOP (Object Oriented Programming) using the Java language. Inheritance, polymorphism, abstract classes, and interfaces are covered. SWING, exceptions, data structures, and I/O streams will also be covered, demonstrating each of the OO concepts. Minimum typing speed of 35 wpm. You can test your typing speed at <http://typingtest.com>. (Prerequisites: Successful completion of COMP 1130 Programming Fundamentals (with a C grade or higher), or a working knowledge of another programming language.)

Visual Basic.Net

Capstone - Software Development

COMP2310 4.00 credits

VB.NET covers common programming techniques using in writing Visual Basic applications as well as demonstrating how to use the popular Visual Studio programming environment. Topics include: Object Oriented programming, control statements, database programming, writing reports using Crystal Reports, and producing web-based applications with ASP.NET. The Capstone Project for this course involves creating an application for a real-life business problem. Minimum typing speed of 35 wpm. Find your typing speed at <http://typingtest.com>. Here's a free, open-source typing programming that's fun to play: TuxType. A working knowledge of the Windows operating system and file management. (Prerequisites: Successful completion of COMP 1130 with a grade of C or higher, or a working knowledge of at least one programming language.)

Capstone - Networking Services**COMP2498 1 - 4 credits**

This course is an opportunity for students to demonstrate that they have achieved the learning goals established by South Central College's Computer Careers Department. This course integrates learning from the courses in the major with the courses from the rest of the student's academic experience. It requires the application of that learning to a service learning project that meets the community need of providing technology assistance to lower income families. Students will gain real world experience using their troubleshooting skills to fix, upgrade and refurbish donated computers. These computers are then recycled back into the community to no-profit organizations and families in need. Students will have an opportunity for reflection through assignments that promote greater understanding of computer concepts and themselves. Students are strongly encouraged to "pass it on," by sharing their computer skills and knowledge through a mentoring process of community members and volunteers. This course will provide an environment, where students can develop a good balance between their technical and "soft" skills. It will include concepts such as team dynamics, conflict management, thinking "outside the box", working with diverse populations and developing professional attitudes and habits. (Prerequisite: Instructor Approval)

Public Speaking**COMM110 3.00 credits**

This course develops or improves effective performance in acquiring, evaluating, organizing, and communicating information. Learners develop and apply critical and creative thinking to structuring arguments, making presentations, using multimedia, and supporting each other in impromptu and extemporaneous speaking. Course de-emphasizes competition and stresses personal and workplace effectiveness in communication skills. (Prerequisites: Must have a score of 86 or higher on the Sentence Skills portion of the Accuplacer test or completion of ENGL 0080 and ENGL 0090 with a grade of C or higher) (MNTC 1: Communication)

COMP2496 1 - 4 credits

This course is used to assess and validate student learning and performance throughout the previous semesters as well as to give students an opportunity to practice their skills in a simulated business environment. It is also an opportunity for students to demonstrate that they have achieved the learning goals established by South Central College's Computer Careers Department. This course integrates learning from the courses in the major with the courses from the rest of the student's academic experience. Students will work in teams under the supervision of faculty members who will act as project managers. (Prerequisite: Instructor Approval)

Composition**ENGL100 4.00 credits**

Composition is concerned with developing, through theory and practice, the ability to communicate in written form for personal and professional reasons. Students will develop writing skills, analytical skills, and critical thinking skills. Students will complete readings, papers, grammar exercises, and in-class activities. Students will learn methods of writing informatively and persuasively. (Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher AND a score of 85.5 or higher on the Sentence Skills portion of the Accuplacer test or completion of ENGL 0080 and ENGL 0090 with a grade of C or higher)(MNTC 1: Communication) This course has an online option.

Computer Assistant Certificate • 30 Credits

CERT3279

Degree Description

This program prepares the student with the core skills necessary for a technical support position with a focus on personal computer operations. Training is emphasized in the areas of installing, maintaining, and troubleshooting personal computers and peripheral devices utilizing current industry hardware and software products. Students also receive an orientation on IBM midrange and mainframe computer systems that are frequently integrated into corporate networks. Hands-on labs are included in the curriculum to give students exposure to current and upcoming technology.

Students successfully completing this certificate will have satisfied the requirements of the first year of the Networking Services AAS degree.

Admission Dates: Fall and Spring Semester

Offered on the North Mankato Campus

The course requirements listed below are specific to the 2013-2014 school year. If you need to view the program from previous years view our [Catalog Archive](#).

This credential is part of the Computer Careers department. [See the Computer Careers department page for more details](#)

Required Technical Courses (7 Courses)

Complete all of the following courses:

- [COMP1120](#) Foundations of Computing (4 Credits)
- [COMP1125](#) Spreadsheet/Database Integration (4 Credits)
- [COMP1140](#) Web Development (4 Credits)
- [COMP1200](#) PC Hardware and Software Essentials (4 Credits)
- [COMP1360](#) Introduction to Data Communications and Networking (4 Credits)
- [COMP2130](#) Advanced Spreadsheets/Database & Programming (4 Credits)
- [COMP2460](#) Linux (4 Credits)

Required Capstone (2 Credits)

Complete 2 credits:

- [COMP2498](#) Capstone - Networking Services (1 - 4 Credits)

PLEASE NOTE: All program plans are preliminary and curriculum may change without notice. Your [catalog of record](#) may have different requirements.

Computer Assistant - Certificate of Training Course Descriptions**Foundations of Computing****COMP1120 4.00 credits**

This course introduces the student to the world of information system. Students will explore the history of computing, career opportunities in information technology, and computer concepts as they apply in a business environment. Topics to be covered include an introduction to basic web-page development, command-line interfaces, file management principles, computer numbering systems, and database principles. Students will also receive initial exposure to the IBM mid-range computer platform and computer programming and algorithms through the use of problem analysis, pseudo-code and entry level programming languages. (Prerequisite: None)

Web Development**COMP1140 4.00 credits**

This course focuses on using XHTML to create attractive web presentations. Students will use basic XHTML page markup, good graphical design, planning a web presence, hyperlinks, FTP, using color and images, CSS, tables, multimedia, forms, and an introduction to JavaScript. Minimum typing speed of 20 wpm (35 wpm recommended) (Prerequisites: None)

Introduction to Data Communications and Networking**COMP1360 4.00 credits**

This course serves as a general introduction for students seeking to acquire a foundation in current network technologies for local area networks (LANs), wide area networks (WANs), and the Internet. The course provides an introduction to the hardware, software, terminology, components, design, and connections of a network. Network concepts such as the OSI model, topologies, and major protocols, as well as the basic functions of system administration and operation are also included. The course is operating system independent and provides an introduction to several popular network operating systems. (Prerequisite: COMP 1200 or instructor approval)

Spreadsheet/Database Integration**COMP1125 4.00 credits**

The focus of this course will be on the core competencies of Excel and Access and their integration with Word, PowerPoint, and each other. Topics to be covered in Excel include: formatting, creating formulas, creating charts and pivot tables, linking files, using templates and hyperlinks, and the use of functions, including logical and lookup functions. Topics covered in Access include: understanding the concepts, design, and construction of a relational database. The student will create table structures, queries, forms, and reports. Students will integrate these applications together to create a final capstone project for the course. (Prerequisite: None)

PC Hardware and Software Essentials**COMP1200 4.00 credits**

PC Hardware and Software, presents an in-depth exposure to computer hardware and operating systems. Students learn the functionality of hardware and software components as well as suggested best practices in maintenance, and safety issues. Through hands on activities and labs, students learn how to assemble and configure a computer, install operating systems and software, and troubleshoot hardware and software problems. In addition, an introduction to networking is included. This course helps students prepare for CompTIA's A+ certification. (Prerequisites: None)

Advanced Spreadsheets/Database & Programming**COMP2130 4.00 credits**

This course covers advanced topics and VBA within the Microsoft Office suite (primarily database and spreadsheet applications). The students will solve business scenarios using advanced features of Access and Excel and the Visual Basic for Applications (VBA) macro language. In addition, the students will integrate data between these applications. Students will work on individual and team projects. (Prerequisite: COMP 1125)

Linux

COMP2460 4.00 credits

The Linux operating system is extremely popular in the world of servers and the internet and is gaining ground on the desktop. This course takes a student through the Linux operating system from learning how to use the command line and text-based shells through the administration of network services. Major topics include file management, user management, shell scripting and popular programming languages, system administration including print services and telnet, ssh, ftp, http, NFS, and Samba services. (Prerequisites: COMP 1360)

Capstone - Networking Services

COMP2498 1 - 4 credits

This course is an opportunity for students to demonstrate that they have achieved the learning goals established by South Central College's Computer Careers Department. This course integrates learning from the courses in the major with the courses from the rest of the student's academic experience. It requires the application of that learning to a service learning project that meets the community need of providing technology assistance to lower income families. Students will gain real world experience using their troubleshooting skills to fix, upgrade and refurbish donated computers. These computers are then recycled back into the community to no-profit organizations and families in need. Students will have an opportunity for reflection through assignments that promote greater understanding of computer concepts and themselves. Students are strongly encouraged to "pass it on," by sharing their computer skills and knowledge through a mentoring process of community members and volunteers. This course will provide an environment, where students can develop a good balance between their technical and "soft" skills. It will include concepts such as team dynamics, conflict management, thinking "outside the box", working with diverse populations and developing professional attitudes and habits. (Prerequisite: Instructor Approval)

Web Programmer

Certificate • 23 Credits

CERT3261

Degree Description

This program is designed for the individual looking to expand their knowledge of World Wide Web programming and applications. Students will focus on skills and software that allow for the behind-the-scenes functions of a website.

These courses may also be applied to the Information Systems AAS degree.

Admission Dates: Fall and Spring Semester

Offered on the North Mankato Campus

The course requirements listed below are specific to the 2013-2014 school year. If you need to view the program from previous years view our [Catalog Archive](#).

This credential is part of the Computer Careers department. [See the Computer Careers department page for more details](#)

Required Technical Courses (5 Courses)

Complete all of the following courses:

[COMP1130](#) Programming Fundamentals (4 Credits)

[COMP1140](#) Web Development (4 Credits)

[COMP2145](#) Web Programming (4 Credits)

[COMP2150](#) Web Services (4 Credits)

[COMP2300](#) Java (4 Credits)

Or

[COMP2310](#) Visual Basic.Net (4 Credits)

Required Capstone (3 Credits)

Complete 3 credits:

[COMP2496](#) Capstone - Software Development (1 - 4 Credits)

PLEASE NOTE: All program plans are preliminary and curriculum may change without notice. Your [catalog of record](#) may have different requirements.

Web Programmer - Certificate of Training Course Descriptions

Programming Fundamentals

COMP1130 4.00 credits

Programming Fundamentals is designed to be a person's first exposure to the world of computer programming. This course covers how to design and implement a computer program, writing a program that will make different types of decisions, how to solve problems using computer programs that remember things, make decisions, and perform repetitive tasks. The course uses both Alice and JavaScript to help the student meet these objectives. Alice is a 3-D programming environment from Carnegie Mellon University designed to teach programming concepts. It is an enjoyable and easy-to-user programming environment that assists the student in making 3-D, animated movies. JavaScript, is a popular language used for by web browsers to get input from the user. JavaScript teaches client-side scripting. This course is part of the Web Programming Certificate and the AAS Information Systems programming degree at South Central College. You will need to have a basic understanding of (X)HTML for the second half of this course which uses JavaScript. A minimum typing speed of 20-35 wpm is recommended. (Prerequisites: COMP 1120)

Web Programming

COMP2145 4.00 credits

This course covers the popular server-side language PHP and Drupal, a popular CMS (Content Management System). It includes important language concepts such as data types, control statements, debugging techniques, the use of SQL (Standard Query Language). PHP will give the student experience with LAMP (Linux, apache, MySQL, and PHP). (Prerequisites: COMP 1140 with a grade of C or higher, or a working knowledge of HTML, CSS, and FTP; COMP 1130 with a grade of C or higher, or a working knowledge of at least one programming language. It is strongly recommended that you have a minimum typing speed of at least 35 wpm as well as a working knowledge of Microsoft Access (COMP 1125).

Java

Web Development

COMP1140 4.00 credits

This course focuses on using XHTML to create attractive web presentations. Students will use basic XHTML page markup, good graphical design, planning a web presence, hyperlinks, FTP, using color and images, CSS, tables, multimedia, forms, and an introduction to JavaScript. Minimum typing speed of 20 wpm (35 wpm recommended) (Prerequisites: None)

Web Services

COMP2150 4.00 credits

This course focuses on XML (eXtensible Markup Language) and the supporting technologies of XML used in person-to-computer and computer-to-computer communications. Some of the technologies covered will include using DTDs (Document Type Definitions), Schema, Namespaces, XPath, DOM, SAX, Data Models, XSLT, SVG, Flex and SOAP as well as web services and the Semantic web. Here's what you'll learn by taking this course: 1. How to create an XML document. It's just like HTML only with customized tag names. 2. Using DTD and Schemas to validate the XML data. 3. How XML can be formatted, filtered, and transformed using a language called XSLT. 4. Several common XML technologies including SVG, SMILE, RSS, and SOAP. 5. How XML will be used to create the Semantic (intelligent) Web. Minimum typing speed of 35 wpm (60 wpm recommended) Find your typing speed at <http://typingtest.com>. Here's a free, open-source typing programming that's fun to play: TuxType. (Prerequisites: Successful completion of COMP 1130 and COMP 1140, with a C or higher, or a working knowledge of XHTML, CSS, and FTP)

Visual Basic.Net

COMP2300 4.00 credits

This course covers OOP (Object Oriented Programming) using the Java language. Inheritance, polymorphism, abstract classes, and interfaces are covered. SWING, exceptions, data structures, and I/O streams will also be covered, demonstrating each of the OO concepts. Minimum typing speed of 35 wpm. You can test your typing speed at <http://typingtest.com>. (Prerequisites: Successful completion of COMP 1130 Programming Fundamentals (with a C grade or higher), or a working knowledge of another programming language.)

COMP2310 4.00 credits

VB.NET covers common programming techniques using in writing Visual Basic applications as well as demonstrating how to use the popular Visual Studio programming environment. Topics include: Object Oriented programming, control statements, database programming, writing reports using Crystal Reports, and producing web-based applications with ASP.NET. The Capstone Project for this course involves creating an application for a real-life business problem. Minimum typing speed of 35 wpm. Find your typing speed at <http://typingtest.com>. Here's a free, open-source typing programming that's fun to play: TuxType. A working knowledge of the Windows operating system and file management. (Prerequisites: Successful completion of COMP 1130 with a grade of C or higher, or a working knowledge of at least one programming language.)

Capstone - Software Development**COMP2496 1 - 4 credits**

This course is used to assess and validate student learning and performance throughout the previous semesters as well as to give students an opportunity to practice their skills in a simulated business environment. It is also an opportunity for students to demonstrate that they have achieved the learning goals established by South Central College's Computer Careers Department. This course integrates learning from the courses in the major with the courses from the rest of the student's academic experience. Students will work in teams under the supervision of faculty members who will act as project managers. (Prerequisite: Instructor Approval)

Computer Integrated Machining Department Overview

The Computer Integrated Machining program consists of both classroom and lab experiences. Hands-on application through the completion of projects will be emphasized. As a result, students will become familiar with the various machines, design methods, manufacturing processes, and safety practices associated with the machining industry. Students will have several career options to choose from upon graduation.

Core Competencies

1. Conduct computer software operation (CAD/CAM)
2. Develop computer machining skills (CNC)
3. Develop safe machining practices
4. Produce quality machined parts
5. Measure quality machined parts

Department Faculty

Bill Block, Chris DeVries, Cody McCall, Jon Morgan

Computer Integrated Machining Degrees

Computer Integrated Machining AAS Degree
Computer Integrated Machining Diploma
Computer Integrated Machining Certificate

Computer Integrated Machining

A.A.S. Degree • 72 Credits

AAS 2442/AAS 3458



Degree Description

The Computer Integrated Machining program consists of both classroom and lab experiences. Hands-on application through the completion of projects will be emphasized. As a result, students will become familiar with the various machines, design methods, manufacturing processes, and safety practices associated with the machining industry. Students will have several career options to choose from upon graduation.

Admission Dates: Fall Semester

Offered on the Faribault and North Mankato Campuses

The course requirements listed below are specific to the 2013-2014 school year. If you need to view the program from previous years view our [Catalog Archive](#).

This credential is part of the Computer Integrated Machining department. [See the Computer Integrated Machining department page for more details](#)

Required Technical Courses (17 Courses)

You must complete all of the following classes:

- [CIM 1115](#) Quality Assurance I (3 Credits)
- [CIM 1126](#) Concept Engineering I (4 Credits)
- [CIM 1136](#) CNC Programming I (3 Credits)
- [CIM 1146](#) Applications I (5 Credits)
- [CIM 1150](#) Machining Computations (3 Credits)
- [CIM 1216](#) Quality Assurance II (2 Credits)
- [CIM 1225](#) Concept Engineering II (4 Credits)
- [CIM 1235](#) CNC Programming II (3 Credits)
- [CIM 1246](#) Applications II (3 Credits)
- [CIM 2250](#) Applied Welding (2 Credits)
- [CIM 2115](#) Quality Assurance III (3 Credits)
- [CIM 2125](#) Concept Engineering III (4 Credits)
- [CIM 2135](#) CNC Programming III (3 Credits)
- [CIM 2145](#) Applications III (4 Credits)
- [CIM 2225](#) Concept Engineering IV (4 Credits)
- [CIM 2235](#) CNC Programming IV (3 Credits)
- [CIM 2245](#) Applications IV (4 Credits)

Required Liberal Arts and Sciences (6 Courses)

To complete an AAS Degree, students must complete 15 MNTC credits from 3 of the 10 MNTC Goal Areas.

The following courses are required:

- [ENGL100](#) Composition (4 Credits)
- [HUM 100](#) Critical Thinking (3 Credits)
- [CHEM108](#) Introduction to Chemistry (4 Credits)
- [PHYS101](#) Introductory Physics (3 Credits)
- [MATH120](#) College Algebra (4 Credits)

- [COMM110](#) Public Speaking (3 Credits)
- Or
- [COMM120](#) Small Group Communication (3 Credits)
- Or
- [COMM140](#) Interpersonal Communication (3 Credits)

PLEASE NOTE: All program plans are preliminary and curriculum may change without notice. Your [catalog of record](#) may have different requirements.

Computer Integrated Machining - Associate of Applied Science Degree Course Descriptions**Quality Assurance I****CIM 1115 3.00 credits**

This course provides an exploration of the basics in machining, raw materials, use of hand tools, safety and maintenance. Topics include an overview of measurement techniques, materials, safety, machine tool math, quality control and maintenance. Teamwork, critical thinking, and problem solving are emphasized. Hands-on experience and practical applications are included. (Prerequisite: Must declare CIM as program major)

CNC Programming I**CIM 1136 3.00 credits**

This course covers basic computer control programming as well as set-up and operation of the CNC Machining Center. Lathe and Wire Electrical Discharge machine. The equipment is necessary for the completion of an advanced project. (Prerequisite: Must declare CIM as program major)

Machining Computations**CIM 1150 3.00 credits**

This course is designed to give hands on experience to the topics learned in CIM 1110. The student will use the saw, drill press, mill, and lathe. The projects will be used in the final assembly of an advanced project. (Prerequisite: CIM as a declared major)

Concept Engineering II**CIM 1225 4.00 credits**

This course builds on the skills obtained in CIM1126. Included in this course are advanced G&M code programming, canned cycles, interpolation, and cutter compensation. Set ups and manual and CNC machine operations will also be covered in this course. (Prerequisite: CIM 1126)

Applications II**CIM 1246 3.00 credits****Concept Engineering I****CIM 1126 4.00 credits**

This course provides an exploration of the basics of hand tools, understanding drawings, manual machines and layout. Upon completion of this course the student will be able to interpret drawing information, describe basic symbols and notation and interpret basic GD&T feature control frames. Teamwork, critical thinking, and problem solving are emphasized. Hands-on experience and practical applications are included. (Prerequisite: Must declare CIM as a program major)

Applications I**CIM 1146 5.00 credits**

This course is designed to give hands on experience. The student will use the saw, drill press, mill, and lathe. The projects will be used in the final assembly of an advanced project. (Prerequisite: Must declare CIM as a program major)

Quality Assurance II**CIM 1216 2.00 credits**

This course is a continuation of the skills obtained in CIM 1115. New topics include standard and digital height gauges along with the Rockwell hardness tester and the basics of Statistical Process Control. (Prerequisite: CIM 1115)

CNC Programming II**CIM 1235 3.00 credits**

This course builds on the skills obtained in CIM 1145, CNC Milling Level 1 and CIM 1135, CNC Turning Level 1. The topics include intermediate level part design and manufacturing techniques. (Prerequisites: CIM 1115, 1125)

Applied Welding**CIM 2250 2.00 credits**

This course is a continuation of the skills obtained in CIM 1146. New topics include machining with carbide, producing heat treated parts and basic surface grinding. (Prerequisites: CIM 1146)

Quality Assurance III

CIM 2115 3.00 credits

This course is a continuation of CIM 1216. New topics include alternative measuring techniques and Statistical Process Control. (Prerequisite: CIM 1216)

CNC Programming III

CIM 2135 3.00 credits

This course is a continuation of CIM 1235, CNC Programming II. Topics include lathe programming, program downloading, editing, and advanced set-ups and operations. (Prerequisite: CIM 1235)

Concept Engineering IV

CIM 2225 4.00 credits

This course is a continuation of CIM 2125. New topics include advanced design procedures and alternative work holding techniques for the production of an advanced project. (Prerequisite: CIM 2125)

Applications IV

CIM 2245 4.00 credits

This course is a continuation of CIM 2145, Applications III. New topics include the finishing of products for the staging of the advanced project. (Prerequisite: CIM 2145)

Critical Thinking

HUM 100 3.00 credits

This course introduces students to the importance of critical thinking in our culture today. Students will be provided with methods of critical thinking as well as relevant topics on which to practice their skills. (Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C

This course covers necessary topics for the production of the advanced project. Topics included will be Beginner and Advance Tungsten Inert Gas Welding (TIG). (Prerequisite: CIM 1110)

Concept Engineering III

CIM 2125 4.00 credits

This course is a continuation of CIM 1225. The topics include introduction to solid modeling and assembly drawings. (Prerequisite: CIM 1225)

Applications III

CIM 2145 4.00 credits

This course is a continuation of CIM 1245, Applications II. New topics include advanced grinding techniques. (Prerequisite: CIM 1245)

CNC Programming IV

CIM 2235 3.00 credits

This course is a continuation of CIM 2135, CNC Programming III. New topics include alternative work holding and advanced tooling set-up and operation for production of an advanced project. (Prerequisite: CIM 2135)

Composition

ENGL100 4.00 credits

Composition is concerned with developing, through theory and practice, the ability to communicate in written form for personal and professional reasons. Students will develop writing skills, analytical skills, and critical thinking skills. Students will complete readings, papers, grammar exercises, and in-class activities. Students will learn methods of writing informatively and persuasively. (Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher AND a score of 85.5 or higher on the Sentence Skills portion of the Accuplacer test or completion of ENGL 0080 and ENGL 0090 with a grade of C or higher)(MNTC 1: Communication) This course has an online option.

Introduction to Chemistry

CHEM108 4.00 credits

A one-semester introduction to the field of chemistry, this course is designed to allow the student to understand how chemistry relates to everyday life and to learn some of the language and concepts of chemistry related to applied health. This course uses a math-based approach. (Prerequisite: Must have a score of 75.5 or higher in the Elementary Algebra

or higher) (MNTC 2: Critical Thinking)

Introductory Physics

PHYS101 3.00 credits

A one semester course covering the basic principles of physics at a conceptual level and with a minimal amount of math. Topics generally included mechanics, simple machines, atomic structure, heat, light, and sound. Lecture and laboratory. (Prerequisites: Must have a score of 56 or higher on the Arithmetic portion of the Accuplacer test or completion of MATH 0075 with a grade of C or higher) (MNTC 3: Natural Sciences)

Public Speaking

COMM110 3.00 credits

This course develops or improves effective performance in acquiring, evaluating, organizing, and communicating information. Learners develop and apply critical and creative thinking to structuring arguments, making presentations, using multimedia, and supporting each other in impromptu and extemporaneous speaking. Course de-emphasizes competition and stresses personal and workplace effectiveness in communication skills. (Prerequisites: Must have a score of 86 or higher on the Sentence Skills portion of the Accuplacer test or completion of ENGL 0080 and ENGL 0090 with a grade of C or higher) (MNTC 1: Communication)

Interpersonal Communication

COMM140 3.00 credits

In this class, participants will examine key components of interpersonal communication theory, identify the interpersonal communication skills necessary for healthy relationships, assess their own interpersonal communication effectiveness, and practice and hone interpersonal communication skills necessary for healthy home and work relationships. This course will also address relevant issues of social interaction, including how human diversity/culture (age, race, gender, etc.) affects our interpersonal communication. (Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher)(MNTC 1: Communication)

portion of the Accuplacer test or completion of MATH 0085 with a grade of C or higher.) (MNTC 3: Natural Sciences)

College Algebra

MATH120 4.00 credits

This course is mainly concerned with functions, most of which are algebraic. It begins with a general treatment of equations and inequalities and then proceeds to cover linear functions, quadratic functions, other polynomial and rational functions, piecewise functions, equations involving radicals and absolute values, logarithms and exponentials, systems of equations and inequalities, permutations and combinations. (Prerequisites: Two years of high school algebra or completion of MATH 0085 with a grade of C or higher, or a score of 75.5 on the Elementary Algebra portion of the Accuplacer test AND a score of 49.5 or higher on the College Level Math portion of the Accuplacer test) (MNTC 4: Mathematical/Logical Reasoning)

Small Group Communication

COMM120 3.00 credits

This course develops or improves effective communication for leaders and participants in the small group setting. Learners develop and apply critical thinking and communication skills through class discussion, group activities, and group presentations. (Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher) (MNTC 1, 2: Communication, Critical Thinking)

Computer Integrated Machining

Diploma • 66 Credits

DIP 2443/DIP 3459



Degree Description

The Computer Integrated Machining program consists of both classroom and lab experiences. Hands-on application through the completion of projects will be emphasized. As a result, students will become familiar with the various machines, design methods, manufacturing processes, and safety practices associated with the machining industry. Students will have several career options to choose from upon graduation.

Admission Dates: Fall Semester

Offered on the Faribault and North Mankato Campuses

The course requirements listed below are specific to the 2013-2014 school year. If you need to view the program from previous years view our [Catalog Archive](#).

This credential is part of the Computer Integrated Machining department. [See the Computer Integrated Machining department page for more details](#)

Required Technical Courses (18 Courses)

You must complete all of the following courses:

- [CIM 1115](#) Quality Assurance I (3 Credits)
- [CIM 1126](#) Concept Engineering I (4 Credits)
- [CIM 1136](#) CNC Programming I (3 Credits)
- [CIM 1146](#) Applications I (5 Credits)
- [CIM 1150](#) Machining Computations (3 Credits)
- [CIM 1216](#) Quality Assurance II (2 Credits)
- [CIM 1225](#) Concept Engineering II (4 Credits)
- [CIM 1235](#) CNC Programming II (3 Credits)
- [CIM 1246](#) Applications II (3 Credits)
- [CIM 2250](#) Applied Welding (2 Credits)
- [CIM 2115](#) Quality Assurance III (3 Credits)
- [CIM 2125](#) Concept Engineering III (4 Credits)
- [CIM 2135](#) CNC Programming III (3 Credits)
- [CIM 2145](#) Applications III (4 Credits)
- [CIM 2225](#) Concept Engineering IV (4 Credits)
- [CIM 2245](#) Applications IV (4 Credits)
- [CIM 2235](#) CNC Programming IV (3 Credits)
- [CIM 2216](#) Quality Assurance IV (3 Credits)

Elective Liberal Arts and Science (3 Credits)

To complete the diploma, students must complete an additional 3 credits from courses appearing in any of the 10 MnTC Goal Areas. Course must be selected in consultation with advisor/faculty.

Required Liberal Arts & Sciences (3 Credits)

You must complete one of the following courses:

- [COMM140](#) Interpersonal Communication (3 Credits)
- Or
- [COMM120](#) Small Group Communication (3 Credits)

PLEASE NOTE: All program plans are preliminary and curriculum may change without notice. Your [catalog of record](#) may have different requirements.

Computer Integrated Machining - Diploma of Occupational Proficiency Course Descriptions**Quality Assurance I****CIM 1115 3.00 credits**

This course provides an exploration of the basics in machining, raw materials, use of hand tools, safety and maintenance. Topics include an overview of measurement techniques, materials, safety, machine tool math, quality control and maintenance. Teamwork, critical thinking, and problem solving are emphasized. Hands-on experience and practical applications are included. (Prerequisite: Must declare CIM as program major)

CNC Programming I**CIM 1136 3.00 credits**

This course covers basic computer control programming as well as set-up and operation of the CNC Machining Center. Lathe and Wire Electrical Discharge machine. The equipment is necessary for the completion of an advanced project. (Prerequisite: Must declare CIM as program major)

Machining Computations**CIM 1150 3.00 credits**

This course is designed to give hands on experience to the topics learned in CIM 1110. The student will use the saw, drill press, mill, and lathe. The projects will be used in the final assembly of an advanced project. (Prerequisite: CIM as a declared major)

Concept Engineering II**CIM 1225 4.00 credits**

This course builds on the skills obtained in CIM1126. Included in this course are advanced G&M code programming, canned cycles, interpolation, and cutter compensation. Set ups and manual and CNC machine operations will also be covered in this course. (Prerequisite: CIM 1126)

Applications II**CIM 1246 3.00 credits****Concept Engineering I****CIM 1126 4.00 credits**

This course provides an exploration of the basics of hand tools, understanding drawings, manual machines and layout. Upon completion of this course the student will be able to interpret drawing information, describe basic symbols and notation and interpret basic GD&T feature control frames. Teamwork, critical thinking, and problem solving are emphasized. Hands-on experience and practical applications are included. (Prerequisite: Must declare CIM as a program major)

Applications I**CIM 1146 5.00 credits**

This course is designed to give hands on experience. The student will use the saw, drill press, mill, and lathe. The projects will be used in the final assembly of an advanced project. (Prerequisite: Must declare CIM as a program major)

Quality Assurance II**CIM 1216 2.00 credits**

This course is a continuation of the skills obtained in CIM 1115. New topics include standard and digital height gauges along with the Rockwell hardness tester and the basics of Statistical Process Control. (Prerequisite: CIM 1115)

CNC Programming II**CIM 1235 3.00 credits**

This course builds on the skills obtained in CIM 1145, CNC Milling Level 1 and CIM 1135, CNC Turning Level 1. The topics include intermediate level part design and manufacturing techniques. (Prerequisites: CIM 1115, 1125)

Applied Welding**CIM 2250 2.00 credits**

This course is a continuation of the skills obtained in CIM 1146. New topics include machining with carbide, producing heat treated parts and basic surface grinding. (Prerequisites: CIM 1146)

Quality Assurance III

CIM 2115 3.00 credits

This course is a continuation of CIM 1216. New topics include alternative measuring techniques and Statistical Process Control. (Prerequisite: CIM 1216)

CNC Programming III

CIM 2135 3.00 credits

This course is a continuation of CIM 1235, CNC Programming II. Topics include lathe programming, program downloading, editing, and advanced set-ups and operations. (Prerequisite: CIM 1235)

Concept Engineering IV

CIM 2225 4.00 credits

This course is a continuation of CIM 2125. New topics include advanced design procedures and alternative work holding techniques for the production of an advanced project. (Prerequisite: CIM 2125)

CNC Programming IV

CIM 2235 3.00 credits

This course is a continuation of CIM 2135, CNC Programming III. New topics include alternative work holding and advanced tooling set-up and operation for production of an advanced project. (Prerequisite: CIM 2135)

Interpersonal Communication

COMM140 3.00 credits

In this class, participants will examine key components of interpersonal communication theory, identify the interpersonal communication skills necessary for healthy relationships, assess their own interpersonal communication effectiveness, and practice and hone interpersonal communication skills necessary for healthy home and work relationships. This course will also address relevant issues of social interaction, including how human diversity/culture (age, race, gender, etc.) affects our interpersonal communication. (Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher)(MNTC 1: Communication)

This course covers necessary topics for the production of the advanced project. Topics included will be Beginner and Advance Tungsten Inert Gas Welding (TIG). (Prerequisite: CIM 1110)

Concept Engineering III

CIM 2125 4.00 credits

This course is a continuation of CIM 1225. The topics include introduction to solid modeling and assembly drawings. (Prerequisite: CIM 1225)

Applications III

CIM 2145 4.00 credits

This course is a continuation of CIM 1245, Applications II. New topics include advanced grinding techniques. (Prerequisite: CIM 1245)

Applications IV

CIM 2245 4.00 credits

This course is a continuation of CIM 2145, Applications III. New topics include the finishing of products for the staging of the advanced project. (Prerequisite: CIM 2145)

Quality Assurance IV

CIM 2216 3.00 credits

This course is a continuation of CIM 2115. New topics include more alternative measuring techniques and final inspection of advanced project. (Prerequisite: CIM 2115)

Small Group Communication

COMM120 3.00 credits

This course develops or improves effective communication for leaders and participants in the small group setting. Learners develop and apply critical thinking and communication skills through class discussion, group activities, and group presentations. (Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher) (MNTC 1, 2: Communication, Critical Thinking)

Computer Integrated Machining

Diploma • 36 Credits

DIP 3467/DIP 2446



Degree Description

Here is a list of courses required to earn the Computer Integrated Machining - Foundation Diploma of Occupational Proficiency

Admission Dates: Fall and Spring Semester

Offered on the Faribault and North Mankato Campuses

The course requirements listed below are specific to the 2013-2014 school year. If you need to view the program from previous years view our [Catalog Archive](#).

This credential is part of the Computer Integrated Machining department. [See the Computer Integrated Machining department page for more details](#)

Required Technical Courses (11 Courses)

Complete the following courses:

- [CIM 1115](#) Quality Assurance I (3 Credits)
- [CIM 1126](#) Concept Engineering I (4 Credits)
- [CIM 1136](#) CNC Programming I (3 Credits)
- [CIM 1146](#) Applications I (5 Credits)
- [CIM 1150](#) Machining Computations (3 Credits)
- [CIM 1155](#) CIM Level 1 Internship (4 Credits)
- [CIM 1216](#) Quality Assurance II (2 Credits)
- [CIM 1225](#) Concept Engineering II (4 Credits)
- [CIM 1235](#) CNC Programming II (3 Credits)
- [CIM 1246](#) Applications II (3 Credits)
- [CIM 2250](#) Applied Welding (2 Credits)

PLEASE NOTE: All program plans are preliminary and curriculum may change without notice. Your [catalog of record](#) may have different requirements.

Computer Integrated Machining - Foundation - Diploma of Occupational Proficiency Course Descriptions

Quality Assurance I

CIM 1115 3.00 credits

This course provides an exploration of the basics in machining, raw materials, use of hand tools, safety and maintenance. Topics include an overview of measurement techniques, materials, safety, machine tool math, quality control and maintenance. Teamwork, critical thinking, and problem solving are emphasized. Hands-on experience and practical applications are included. (Prerequisite: Must declare CIM as program major)

CNC Programming I

CIM 1136 3.00 credits

This course covers basic computer control programming as well as set-up and operation of the CNC Machining Center. Lathe and Wire Electrical Discharge machine. The equipment is necessary for the completion of an advanced project. (Prerequisite: Must declare CIM as program major)

Machining Computations

CIM 1150 3.00 credits

This course is designed to give hands on experience to the topics learned in CIM 1110. The student will use the saw, drill press, mill, and lathe. The projects will be used in the final assembly of an advanced project. (Prerequisite: CIM as a declared major)

Quality Assurance II

CIM 1216 2.00 credits

This course is a continuation of the skills obtained in CIM 1115. New topics include standard and digital height gauges along with the Rockwell hardness tester and the basics of Statistical Process Control. (Prerequisite: CIM 1115)

Concept Engineering I

CIM 1126 4.00 credits

This course provides an exploration of the basics of hand tools, understanding drawings, manual machines and layout. Upon completion of this course the student will be able to interpret drawing information, describe basic symbols and notation and interpret basic GD&T feature control frames. Teamwork, critical thinking, and problem solving are emphasized. Hands-on experience and practical applications are included. (Prerequisite: Must declare CIM as a program major)

Applications I

CIM 1146 5.00 credits

This course is designed to give hands on experience. The student will use the saw, drill press, mill, and lathe. The projects will be used in the final assembly of an advanced project. (Prerequisite: Must declare CIM as a program major)

CIM Level 1 Internship

CIM 1155 4.00 credits

This course is a four to eight week internship designed to facilitate learning in the manufacturing environment. Course competencies are developed and approved as a cooperative learning contract between employer, student and course instructor. Students are required to develop reports and a final presentation to present their individual learning competencies to the rest of their class. Instructors will meet with the student during the eight week internship to assess progress. (Prerequisites: None)

Concept Engineering II

CIM 1225 4.00 credits

This course builds on the skills obtained in CIM1126. Included in this course are advanced G&M code programming, canned cycles, interpolation, and cutter compensation. Set ups and manual and CNC machine operations will also be covered in this course. (Prerequisite: CIM 1126)

CNC Programming II

CIM 1235 3.00 credits

This course builds on the skills obtained in CIM 1145, CNC Milling Level 1 and CIM 1135, CNC Turning Level 1. The topics include intermediate level part design and manufacturing techniques. (Prerequisites: CIM 1115, 1125)

Applied Welding

CIM 2250 2.00 credits

This course covers necessary topics for the production of the advanced project. Topics included will be Beginner and Advance Tungsten Inert Gas Welding (TIG). (Prerequisite: CIM 1110)

Applications II

CIM 1246 3.00 credits

This course is a continuation of the skills obtained in CIM 1146. New topics include machining with carbide, producing heat treated parts and basic surface grinding. (Prerequisites: CIM 1146)

Computer Integrated Machining

Certificate • 20 Credits

CERT2444/CERT3462



Degree Description

Right Skills Now (RSN) is a fast track precision manufacturing training program designed to enable both job seekers and employers meet the current demand for skilled workers. The RSN program at South Central College (SCC) is designed to give students the necessary entry level skills to safely and accurately operate CNC machine tools. Courses include Measurement, Materials & Safety; Job Planning, Benchwork & Layout; CNC Turning Operations and CNC Milling Operations. This broad-based course is centered on competencies that are currently embedded in the National Institute for Metalworking skills (NIMS) certification criteria. After successful completion of this course students will have the opportunity to certify their knowledge by taking performance and theory assessments as measured against the NIMS Standards.

Basic Requirements

Score a Silver Level on the National Career Readiness Credential assessment or instructor permission.

Program Core Competencies

1. Convey the skills and knowledge in computer integrated machining fields.
2. Produce quality CNC machined parts.
3. Prepare students to work within a precision manufacturing setting.
4. Demonstrate safe and efficient use of CNC equipment.

Admission Dates: Fall Semester

Offered on the Faribault and North Mankato Campuses

The course requirements listed below are specific to the 2013-2014 school year. If you need to view the program from previous years view our [Catalog Archive](#).

This credential is part of the Computer Integrated Machining department. [See the Computer Integrated Machining department page for more details](#)

Required Technical Courses (5 Courses)

Complete the following courses:

[CIM 1115](#) Quality Assurance I (3 Credits)

[CIM 1125](#) (Credit)

[CIM 1135](#) (Credit)

[CIM 1145](#) (Credit)

[CIM 1155](#) CIM Level 1 Internship (4 Credits)

PLEASE NOTE: All program plans are preliminary and curriculum may change without notice. Your [catalog of record](#) may have different requirements.

Computer Integrated Machining - Certificate of Training Course Descriptions**Quality Assurance I****CIM 1115 3.00 credits**

This course provides an exploration of the basics in machining, raw materials, use of hand tools, safety and maintenance. Topics include an overview of measurement techniques, materials, safety, machine tool math, quality control and maintenance. Teamwork, critical thinking, and problem solving are emphasized. Hands-on experience and practical applications are included. (Prerequisite: Must declare CIM as program major)

CIM Level 1 Internship**CIM 1155 4.00 credits**

This course is a four to eight week internship designed to facilitate learning in the manufacturing environment. Course competencies are developed and approved as a cooperative learning contract between employer, student and course instructor. Students are required to develop reports and a final presentation to present their individual learning competencies to the rest of their class. Instructors will meet with the student during the eight week internship to assess progress. (Prerequisites: None)

Culinary Arts Department Overview

The Culinary Arts program is designed to meet the varied needs of food service establishments. Students are provided with a background of hot and cold food preparation, food service management, and cost control. Demonstrations and practical experience provided in our operational dining room/cafeteria permit students to develop the necessary food preparation skills for gainful employment.

Core Competencies

1. Conduct safe and sanitary food preparation.
2. Operate, clean and assemble commercial kitchen and baking equipment.
3. Demonstrate proficiency in basic baking.
4. Demonstrate proficiency in basic cooking skills.
5. Prepare buffet foods and set up buffet tables and centerpieces.
6. Demonstrate advanced culinary preparation skills.
7. Demonstrate proficiency in the preparation of stocks, soups, and sauces.
8. Calculate food, beverage, and labor costs and determine menu selling prices.
9. Demonstrate knowledge of the storeroom cycle-purchasing, receiving, storage and issuance

Department Faculty

Michael Broughten

Culinary Arts Degrees

Culinary Arts AAS Degree

Culinary Arts Diploma

Culinary Arts

A.A.S. Degree • 69 Credits

AAS 3409



Degree Description

The Culinary Arts program is designed to meet the varied needs of food service establishments. Students are provided with a background of hot and cold food preparation, food service management, and cost control. Demonstrations and practical experience provided in our operational dining room/cafeteria permit students to develop the necessary food preparation skills for gainful employment.

Admission Dates: Fall, Spring, and Summer Semester

Offered on the North Mankato Campus

The course requirements listed below are specific to the 2013-2014 school year. If you need to view the program from previous years view our [Catalog Archive](#).

This credential is part of the Culinary Arts department. [See the Culinary Arts department page for more details](#)

Required Technical Courses (23 Courses)

Complete the following courses:

- [CART1800](#) Introduction to Food Service (2 Credits)
- [CART1803](#) Food and Beverage Control (1 Credit)
- [CART1855](#) Wok/Oriental Cookery (2 Credits)
- [CART1900](#) Specialty Breads (2 Credits)
- [FBMG2950](#) Specialty Option I (1 Credit)
- [FBMG2986](#) Hospitality Nutrition I (2 Credits)
- [FBMG2990](#) Advanced Culinary Skill Production (3 Credits)
- [HLTH1950](#) CPR (1 Credit)
- [HLTH1952](#) First Aid (1 Credit)
- [HRIC2860](#) Buffet Preparation and Service (2 Credits)
- [HRIC2870](#) Basic Management/Supervisory Skills (2 Credits)
- [HRIC2871](#) Purchasing and Receiving (2 Credits)
- [HRIC2875](#) Menu Design (2 Credits)
- [MKT 1800](#) Introduction to Sales (3 Credits)
- [OTEC2000](#) Employment Search Skills (2 Credits)
- [OTEC1001](#) Computer Software for College (2 Credits)
- [QFPR1840](#) Basic Cooking Principles (3 Credits)
- [QFPR1841](#) Basic Meat, Poultry, Fish/Shellfish Identification & Processing (4 Credits)
- [QFPR1842](#) Stocks, Sauces and Soups (3 Credits)
- [QFPR1846](#) Introduction to Breakfast and Pantry (3 Credits)
- [QFPR1850](#) Basic Baking (4 Credits)
- [QFPR1880](#) Quality Assurance (2 Credits)
- [QFPR1890](#) Quality Food Production (3 Credits)

Required Liberal Arts and Sciences (2 Courses)

To complete an AAS degree, students must complete 17 MNTC credits from 3 of the 10 MNTC Goal Areas. Courses must be approved by advisor/faculty.

The following courses are required:

- [COMM140](#) Interpersonal Communication (3 Credits)
- [ETHN101](#) American Racial Minorities (3 Credits)

PLEASE NOTE: All program plans are preliminary and curriculum may change without notice. Your [catalog of record](#) may have different requirements.

Culinary Arts - Associate of Applied Science Degree Course Descriptions**Introduction to Food Service****CART1800 2.00 credits**

This course includes an introduction to the food service industry, culinary terms, use of weights and measures, and kitchen safety. The course also covers equipment and knife identification and use. (Prerequisites: None)

Wok/Oriental Cookery**CART1855 2.00 credits**

This course is designed to give the student the knowledge and skills needed to prepare a variety of wok/oriental dishes. (Prerequisites: None)

Specialty Option I**FBMG2950 1.00 credits**

This course is designed to give the student advanced knowledge, skills and practical training in tallow/margarine sculpting and ice carving (Prerequisites: None)

Advanced Culinary Skill Production**FBMG2990 3.00 credits**

This course will utilize all the preparation skills learned in previous courses. The student will be responsible for preparation and service of stocks, sauces, soups, meats, poultry, and fish and seafood items using the various moist and dry heat methods. The student will plan and prepare several specialty multi-course luncheons. (Prerequisites: CART1800, QFPR1840, QFPR1880, or instructor approval).

First Aid**HLTH1952 1.00 credits**

This course includes emergency care training for initial treatment of illness and injury. Patient assessment, bleeding control, shock management, soft tissue injury, orthopedic

Food and Beverage Control**CART1803 1.00 credits**

This course is designed to teach food and beverage costing systems. Students will learn ingredient, batch, plate, and menu costing techniques. Student projects emphasize calculating food costs, beverage costs, percentages, labor costs, and labor productivity ratios. (Prerequisites: None)

Specialty Breads**CART1900 2.00 credits**

This course includes the preparation and makeup of a variety of yeast raised doughs. Students use a variety of commercial equipment to produce breads, danish, croissants, rolls, and yeast raised coffee cakes. (Prerequisites: None)

Hospitality Nutrition I**FBMG2986 2.00 credits**

This course covers the basic information to understand food trends, digestion and utilization processes, menu development for normal and special diets, and the preparation of nutritionally balanced meals. (Prerequisites: None)

CPR**HLTH1950 1.00 credits**

This course covers the skills of infant, child and adult single and two rescue CPR as well as relief of foreign body airway obstruction procedures for infant, child and adult. Automated external defibrillators, bag-valve masks and pocket masks are also used. Signs and symptoms of stroke and heart attack are also discussed. This course meets the criteria of the American Heart Association 2010 Guidelines for CPR and ECC.

Buffet Preparation and Service**HRIC2860 2.00 credits**

This course is designed to teach the student the fundamentals of garde manger decorating. This will include chaud froid and aspic decorating; fruit, vegetable and cheese carvings; and the

injury, diabetic problems, seizures, poisons, heat exposure, and cold exposure are some of the topics covered in this course. This course is appropriate for anyone who may need to render immediate care. The items covered in the course are just as applicable to an industrial or a business work setting, as they are to a daycare facility, or even at home. (Prerequisite: None).

Basic Management/Supervisory Skills

HRIC2870 2.00 credits

This course will help the student develop an appreciation for all aspects of a manager's job. The course covers the functions of management, human relations principles, motivation theories, labor relations and law, business planning, personnel management and staffing. (Prerequisites: None)

Menu Design

HRIC2875 2.00 credits

This course will cover basic menu development techniques, menu costing, menu layout and design, and pricing. (Prerequisites: None)

Employment Search Skills

OTEC2000 2.00 credits

This course introduces students to a process for developing self-awareness - considering career opportunities, constraints, choices, and consequences - identifying career related goals - and planning of work, education, and related experiences to attain specific career goals. Students will also create job search documents and develop interviewing skills. The students will develop an understanding of and appreciation for the job search process. Students will use Internet and library resources.

Basic Cooking Principles

QFPR1840 3.00 credits

This course covers basic food preparation methods. Students use a variety of kitchen equipment and tools to do preliminary preparation and to practice moist and dry heat cooking methods. (Prerequisites: None)

preparation of centerpiece displays and plate garnishes. The course also includes buffet setup, buffet table decorating and hors d'oeuvre preparation. (Prerequisites: None)

Purchasing and Receiving

HRIC2871 2.00 credits

In this course students learn the principles and practices concerned with the purchasing and receiving of food, supplies and equipment for various food service operations. (Prerequisites: None)

Introduction to Sales

MKT 1800 3.00 credits

This course serves as a foundation for future sales courses. The instructional approach combines both traditional and innovative presentations of course content that is dependent upon student involvement. The content covers the role of sales, steps of the selling process, the importance of communication skills and a positive attitude. In addition, special attention is devoted throughout the course on how the salesperson is viewed as an ambassador for the company that they represent. (Prerequisite: None)

Computer Software for College

OTEC1001 2.00 credits

This course covers basic information about computer hardware and software and the use of computer software as a business productivity tool. Students will be given introductory training on a Windows operating system and the common business applications of word processing, spreadsheets, database, and presentation graphics. This course is designed to equip the student with knowledge of hardware and software applications. This course will cover the business application software that will be used in more advanced courses. (Prerequisites: Basic computer skills or Computer Basic class; mouse proficiency, keyboarding skill of 25 words per minute)

Basic Meat, Poultry, Fish/Shellfish Identification & Processing

QFPR1841 4.00 credits

This course covers the identification and preparation techniques of various cuts and grades of meats, poultry, fish/shellfish, and game meats. This course will also teach the processing (butchering) and storage of fresh meats and the operation and cleaning of meat processing equipment. (Prerequisites: None)

Stocks, Sauces and Soups

QFPR1842 3.00 credits

This course covers the preparation of classical and convenience stocks. From these stocks, different soups and sauces will be prepared using various preparation techniques. (Prerequisites: None)

Basic Baking

QFPR1850 4.00 credits

This course covers baking terminology, function of ingredients, and the preparation of finished products such as quick breads, pies, cakes, cookies, dessert sauces, custards, puddings and classical pastries. (Prerequisites: None)

Quality Food Production

QFPR1890 3.00 credits

This course teaches the preparation of meat, seafood, vegetables, fruits, pasta and other menu items using the various moist and dry heat cooking methods. This course will include production techniques used in commercial kitchens. (Prerequisites: None)

American Racial Minorities

ETHN101 3.00 credits

This course will introduce students to the importance and the understanding of the nature of race relations in the United States of America. Students will use the various sociological perspectives as a lens to examine the social construction of race, ethnicity and the evolving nature of race and ethnic relations in the U.S. (Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher) (MNTC 5, 9: History/Social & Behavioral Sciences, Ethical & Civic Responsibility)

Introduction to Breakfast and Pantry

QFPR1846 3.00 credits

This course teaches the cooking of meats, eggs, cereals, potatoes, batter products and the preparation of fresh fruits for breakfast and the proper techniques and procedures for the preparation of salads, salad dressings and sandwiches. This course will include commercial production techniques used in the preparation of breakfast and pantry foods. (Prerequisites: None)

Quality Assurance

QFPR1880 2.00 credits

This course develops an understanding of the basic principles of sanitation and safety in order to maintain a safe and healthy environment for the consumer in the food service industry. An understanding of the laws and regulations related to sanitation in food service operation is also covered. (Prerequisites: None)

Interpersonal Communication

COMM140 3.00 credits

In this class, participants will examine key components of interpersonal communication theory, identify the interpersonal communication skills necessary for healthy relationships, assess their own interpersonal communication effectiveness, and practice and hone interpersonal communication skills necessary for healthy home and work relationships. This course will also address relevant issues of social interaction, including how human diversity/culture (age, race, gender, etc.) affects our interpersonal communication. (Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher)(MNTC 1: Communication)

Culinary Arts

Diploma • 55 Credits

DIP 3411



Degree Description

The Culinary Arts program is designed to meet the varied needs of food service establishments. Students are provided with a background of hot and cold food preparation, food service management, and cost control. Demonstrations and practical experience provided in our operational dining room/cafeteria permit students to develop the necessary food preparation skills for gainful employment.

Admission Dates: Fall, Spring, and Summer Semester

Offered on the North Mankato Campus

The course requirements listed below are specific to the 2013-2014 school year. If you need to view the program from previous years view our [Catalog Archive](#).

This credential is part of the Culinary Arts department. [See the Culinary Arts department page for more details](#)

Required Technical Courses (22 Courses)

- [CART1800](#) Introduction to Food Service (2 Credits)
- [CART1803](#) Food and Beverage Control (1 Credit)
- [CART1855](#) Wok/Oriental Cookery (2 Credits)
- [CART1900](#) Specialty Breads (2 Credits)
- [FBMG2950](#) Specialty Option I (1 Credit)
- [FBMG2986](#) Hospitality Nutrition I (2 Credits)
- [FBMG2990](#) Advanced Culinary Skill Production (3 Credits)
- [HLTH1950](#) CPR (1 Credit)
- [HLTH1952](#) First Aid (1 Credit)
- [HRIC2860](#) Buffet Preparation and Service (2 Credits)
- [HRIC2870](#) Basic Management/Supervisory Skills (2 Credits)
- [HRIC2871](#) Purchasing and Receiving (2 Credits)
- [HRIC2875](#) Menu Design (2 Credits)
- [OTEC1001](#) Computer Software for College (2 Credits)
- [OTEC2000](#) Employment Search Skills (2 Credits)
- [QFPR1840](#) Basic Cooking Principles (3 Credits)
- [QFPR1841](#) Basic Meat, Poultry, Fish/Shellfish Identification & Processing (4 Credits)
- [QFPR1842](#) Stocks, Sauces and Soups (3 Credits)
- [QFPR1846](#) Introduction to Breakfast and Pantry (3 Credits)
- [QFPR1850](#) Basic Baking (4 Credits)
- [QFPR1880](#) Quality Assurance (2 Credits)
- [QFPR1890](#) Quality Food Production (3 Credits)

Required Liberal Arts and Sciences (2 Courses)

Complete the following courses:

- [COMM140](#) Interpersonal Communication (3 Credits)
- [ETHN101](#) American Racial Minorities (3 Credits)

PLEASE NOTE: All program plans are preliminary and curriculum may change without notice. Your [catalog of record](#) may have different requirements.

Culinary Arts - Diploma of Occupational Proficiency Course Descriptions**Introduction to Food Service****CART1800 2.00 credits**

This course includes an introduction to the food service industry, culinary terms, use of weights and measures, and kitchen safety. The course also covers equipment and knife identification and use. (Prerequisites: None)

Wok/Oriental Cookery**CART1855 2.00 credits**

This course is designed to give the student the knowledge and skills needed to prepare a variety of wok/oriental dishes. (Prerequisites: None)

Specialty Option I**FBMG2950 1.00 credits**

This course is designed to give the student advanced knowledge, skills and practical training in tallow/margarine sculpting and ice carving (Prerequisites: None)

Advanced Culinary Skill Production**FBMG2990 3.00 credits**

This course will utilize all the preparation skills learned in previous courses. The student will be responsible for preparation and service of stocks, sauces, soups, meats, poultry, and fish and seafood items using the various moist and dry heat methods. The student will plan and prepare several specialty multi-course luncheons. (Prerequisites: CART1800, QFPR1840, QFPR1880, or instructor approval).

First Aid**HLTH1952 1.00 credits**

This course includes emergency care training for initial treatment of illness and injury. Patient assessment, bleeding control, shock management, soft tissue injury, orthopedic

Food and Beverage Control**CART1803 1.00 credits**

This course is designed to teach food and beverage costing systems. Students will learn ingredient, batch, plate, and menu costing techniques. Student projects emphasize calculating food costs, beverage costs, percentages, labor costs, and labor productivity ratios. (Prerequisites: None)

Specialty Breads**CART1900 2.00 credits**

This course includes the preparation and makeup of a variety of yeast raised doughs. Students use a variety of commercial equipment to produce breads, danish, croissants, rolls, and yeast raised coffee cakes. (Prerequisites: None)

Hospitality Nutrition I**FBMG2986 2.00 credits**

This course covers the basic information to understand food trends, digestion and utilization processes, menu development for normal and special diets, and the preparation of nutritionally balanced meals. (Prerequisites: None)

CPR**HLTH1950 1.00 credits**

This course covers the skills of infant, child and adult single and two rescue CPR as well as relief of foreign body airway obstruction procedures for infant, child and adult. Automated external defibrillators, bag-valve masks and pocket masks are also used. Signs and symptoms of stroke and heart attack are also discussed. This course meets the criteria of the American Heart Association 2010 Guidelines for CPR and ECC.

Buffet Preparation and Service**HRIC2860 2.00 credits**

This course is designed to teach the student the fundamentals of garde manger decorating. This will include chaud froid and aspic decorating; fruit, vegetable and cheese carvings; and the

injury, diabetic problems, seizures, poisons, heat exposure, and cold exposure are some of the topics covered in this course. This course is appropriate for anyone who may need to render immediate care. The items covered in the course are just as applicable to an industrial or a business work setting, as they are to a daycare facility, or even at home. (Prerequisite: None).

Basic Management/Supervisory Skills

HRIC2870 2.00 credits

This course will help the student develop an appreciation for all aspects of a manager's job. The course covers the functions of management, human relations principles, motivation theories, labor relations and law, business planning, personnel management and staffing. (Prerequisites: None)

Menu Design

HRIC2875 2.00 credits

This course will cover basic menu development techniques, menu costing, menu layout and design, and pricing. (Prerequisites: None)

Employment Search Skills

OTEC2000 2.00 credits

This course introduces students to a process for developing self-awareness - considering career opportunities, constraints, choices, and consequences - identifying career related goals - and planning of work, education, and related experiences to attain specific career goals. Students will also create job search documents and develop interviewing skills. The students will develop an understanding of and appreciation for the job search process. Students will use Internet and library resources.

Basic Meat, Poultry, Fish/Shellfish Identification & Processing

QFPR1841 4.00 credits

This course covers the identification and preparation techniques of various cuts and grades of meats, poultry, fish/shellfish, and game meats. This course will also teach the processing (butchering) and storage of fresh meats and the operation and cleaning of meat processing equipment. (Prerequisites: None)

preparation of centerpiece displays and plate garnishes. The course also includes buffet setup, buffet table decorating and hors d'oeuvre preparation. (Prerequisites: None)

Purchasing and Receiving

HRIC2871 2.00 credits

In this course students learn the principles and practices concerned with the purchasing and receiving of food, supplies and equipment for various food service operations. (Prerequisites: None)

Computer Software for College

OTEC1001 2.00 credits

This course covers basic information about computer hardware and software and the use of computer software as a business productivity tool. Students will be given introductory training on a Windows operating system and the common business applications of word processing, spreadsheets, database, and presentation graphics. This course is designed to equip the student with knowledge of hardware and software applications. This course will cover the business application software that will be used in more advanced courses. (Prerequisites: Basic computer skills or Computer Basic class; mouse proficiency, keyboarding skill of 25 words per minute)

Basic Cooking Principles

QFPR1840 3.00 credits

This course covers basic food preparation methods. Students use a variety of kitchen equipment and tools to do preliminary preparation and to practice moist and dry heat cooking methods. (Prerequisites: None)

Stocks, Sauces and Soups

QFPR1842 3.00 credits

This course covers the preparation of classical and convenience stocks. From these stocks, different soups and sauces will be prepared using various preparation techniques. (Prerequisites: None)

Introduction to Breakfast and Pantry

QFPR1846 3.00 credits

This course teaches the cooking of meats, eggs, cereals, potatoes, batter products and the preparation of fresh fruits for breakfast and the proper techniques and procedures for the preparation of salads, salad dressings and sandwiches. This course will include commercial production techniques used in the preparation of breakfast and pantry foods. (Prerequisites: None)

Quality Assurance

QFPR1880 2.00 credits

This course develops an understanding of the basic principles of sanitation and safety in order to maintain a safe and healthy environment for the consumer in the food service industry. An understanding of the laws and regulations related to sanitation in food service operation is also covered. (Prerequisites: None)

Interpersonal Communication

COMM140 3.00 credits

In this class, participants will examine key components of interpersonal communication theory, identify the interpersonal communication skills necessary for healthy relationships, assess their own interpersonal communication effectiveness, and practice and hone interpersonal communication skills necessary for healthy home and work relationships. This course will also address relevant issues of social interaction, including how human diversity/culture (age, race, gender, etc.) affects our interpersonal communication. (Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher)(MNTC 1: Communication)

Basic Baking

QFPR1850 4.00 credits

This course covers baking terminology, function of ingredients, and the preparation of finished products such as quick breads, pies, cakes, cookies, dessert sauces, custards, puddings and classical pastries. (Prerequisites: None)

Quality Food Production

QFPR1890 3.00 credits

This course teaches the preparation of meat, seafood, vegetables, fruits, pasta and other menu items using the various moist and dry heat cooking methods. This course will include production techniques used in commercial kitchens. (Prerequisites: None)

American Racial Minorities

ETHN101 3.00 credits

This course will introduce students to the importance and the understanding of the nature of race relations in the United States of America. Students will use the various sociological perspectives as a lens to examine the social construction of race, ethnicity and the evolving nature of race and ethnic relations in the U.S.(Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher) (MNTC 5, 9: History/Social & Behavioral Sciences, Ethical & Civic Responsibility)

Dental Assisting Department Overview

The Dental Assisting curriculum is designed to provide opportunities for the student to develop a sound fundamental background for the practice of dental assisting. The specialized knowledge in the field of dental assisting prepares the student and graduate to contribute to the world of dentistry for today's changing environment. This program identifies necessary competencies and integrates the curricula to support these outcomes to produce a dental assistant who is a vital member of the dental health team. The student will become grounded and prepared to function as a Chairside and Expanded Functions clinician, a Business/Office Dental Assistant and a Laboratory Dental Assistant. Graduates of the program are capable of practicing in a general dental practice or in a dental specialty. Progression through the program is sequential. Due to the limited amount of space in the clinical area, students will be admitted on space available basis. Successful completion of all courses in the dental assisting program require passing with a C/2.0 GPA or above.

The program is designed to meet the American Dental Association's Commission on Dental Accreditation Standard for Dental Assisting with the clinical skills and competencies as designated by the State Dental Practice Act of Minnesota State Board of Dentistry. A unique aspect of the South Central College's Dental Assisting program is its location on the Minnesota State University, Mankato campus in a newly refurbished 12-unit dental clinic, with restorative facilities, shared by MSU's Dental Hygiene program.

Program Delivery: Students will be admitted Fall Semester of each year.

Basic Entrance Requirements

Due to accreditation regulations, only students who have a high school diploma or GED and are over the age of 18 are eligible for admission to this program.

Core Competencies

1. Demonstrate skill competency in oral/written communication and patient management.
2. Demonstrate practical application of infection control, biohazards/quality assurance procedures, and treatment area maintenance.
3. Demonstrate skills to collect medical/dental data, vital signs, dental charting, and maintain accurate patient records.
4. Conduct extra-oral /intra-oral exams, radiographs, preliminary impressions, study casts and occlusal bite registrations.
5. Demonstrate competencies skills and proficiency in tray set-ups, unit preparation, and medical emergency situations.
6. Apply current dental assisting concepts and techniques through competency skill levels and clinical/laboratory dental assisting, expanded functions, general and specialty dental procedures.
7. Demonstrate competency / skill in business office procedures and equipment, dental practice management systems, and financial transactions.

Department Faculty

Jennifer Dumdei, Karon Metz

Dental Assisting Degrees

Dental Assisting AAS Degree
Dental Assisting Diploma

Dental Assisting

A.A.S. Degree • 66 Credits

AAS 3303



Degree Description

Here is a list of courses required to earn the Dental Assisting Associate of Applied Science Degree

Admission Dates: Fall Semester

Offered on the North Mankato Campus

The course requirements listed below are specific to the 2013-2014 school year. If you need to view the program from previous years view our [Catalog Archive](#).

This credential is part of the Dental Assisting department. [See the Dental Assisting department page for more details](#)

Required Technical Courses (19 Courses)

The following courses must be completed:

- [DA 1810](#) Dental Technology (1 Credit)
- [DA 1811](#) Dental Science I (2 Credits)
- [DA 1812](#) Oral Anatomy (2 Credits)
- [DA 1813](#) Preclinical Dental Assisting (2 Credits)
- [DA 1814](#) Chairside Dental Assisting I (4 Credits)
- [DA 1815](#) Dental Materials (3 Credits)
- [DA 1816](#) Radiology I (3 Credits)
- [DA 1821](#) Dental Practice Management (2 Credits)
- [DA 1823](#) Dental Science II (2 Credits)
- [DA 1825](#) Dental Assisting Expanded Functions (5 Credits)
- [DA 1826](#) Radiology II (3 Credits)
- [DA 1827](#) Dental Nutrition (1 Credit)
- [DA 1828](#) Nitrous Oxide Sedation (1 Credit)
- [DA 1830](#) Chairside Dental Assisting II (4 Credits)
- [DA 1831](#) D.A. Internship I (4 Credits)
- [DA 1841](#) D.A. Internship II (4 Credits)
- [HLTH1950](#) CPR (1 Credit)
- [HLTH1952](#) First Aid (1 Credit)
- [HLTH1954](#) Safety (1 Credit)

Elective Liberal Arts and Sciences MnTC Goal 3 (3 Credits)

Choose 3 - 4 credits from MnTC Goal 3: Natural Science.

Required Liberal Arts & Sciences (4 Courses)

To complete an AAS Degree, students must complete 20 MNTC credits from 3 of the 10 MNTC Goal Areas. Courses must be approved by advisor/faculty. The following courses are required:

- [COMM140](#) Interpersonal Communication (3 Credits)
- [ENGL100](#) Composition (4 Credits)
- [MATH115](#) Concepts in Math (4 Credits)
- [PHIL100](#) Ethics in Society (3 Credits)

PLEASE NOTE: All program plans are preliminary and curriculum may change without notice. Your [catalog of record](#) may have different requirements.

Elective Liberal Arts and Sciences MnTC Goal 5 (3 Credits)

Select at least 3-4 credits from MnTC Goal 5: History and the Social and Behavioral Sciences.

Dental Assisting - Associate of Applied Science Degree Course Descriptions**Dental Technology****DA 1810 1.00 credits**

Students will learn dental computer software. Course focus will be to access and utilize appointment book, patient records, insurance procedures and CDT coders. (Prerequisites: Admission to Dental Assisting program and basic computer skills)

Dental Science I**DA 1811 2.00 credits**

Dental Science is designed to provide the student with the fundamental, anatomical, and physiological structures of the human body. Emphasis will be placed on the head and neck anatomy. The focus of the course is to help students with no prior preparation in science to have a fundamental understanding of the structure and function of the human body with emphasis on the head and neck. The student will develop the necessary background knowledge to be a successful chairside and clinical assistant. (Prerequisites: Admitted to Dental Assisting program)

Oral Anatomy**DA 1812 2.00 credits**

Dental anatomy is the fundamental study of permanent and primary dentitions, including embryology, morphology, function and occlusion. The focus of this course is to provide the student with the knowledge to identify adult and children's dentition, distinguish occlusion, understand eruption patterns and developmental process. Students will be able to apply knowledge in clinical settings as well as translate information onto paper charting formats. (Prerequisites: Admitted to Dental Assisting program)

Preclinical Dental Assisting**DA 1813 2.00 credits**

This course is designed to provide fundamental knowledge of microbiology and infection control measures. Patient management, utilizing psychological theories and application will be included to prepare the student for clinical application of these skills. (Prerequisites: None)

Chairside Dental Assisting I**DA 1814 4.00 credits**

Chairside Dental Assisting I provides the basic clinical background knowledge and skills required for dental assisting clinical techniques and methods. Areas emphasized include patient safety and positioning, instrument nomenclature, chairside assisting techniques, treatment planning, 4-6 handed dentistry and patient maintenance. (Prerequisites: HLTH 1950, 1952, 1954, DA 1812)

Dental Materials**DA 1815 3.00 credits**

Dental Materials is designed to provide fundamental knowledge of dental materials, their purpose, composition, manipulation, properties and storage as utilized in the dental practice and laboratory setting. (Prerequisites: DA 1811, 1812)

Radiology I**DA 1816 3.00 credits**

Radiology I is designed to provide fundamental knowledge and skills of radiographic infection control, quality assurance, protection and safety, film processing and darkroom management, imaging principles and techniques, intra-oral

Dental Practice Management**DA 1821 2.00 credits**

The course is designed to provide the general knowledge and ability to apply the knowledge in dental practice management, administrative and supportive duties necessary in the modern dental practice. (Prerequisites: None)

techniques, film mounting and patient management, and recordkeeping. (Prerequisites: DA 1810, 1811, 1812)

Dental Science II

DA 1823 2.00 credits

Dental Science II is designed to provide basic knowledge in pharmacology and oral pathology. Emphasis will be placed on methods of application, classifications and usage of knowledge in clinical settings. (Prerequisites: DA1811, 1812)

Radiology II

DA 1826 3.00 credits

Radiology II is a continuation of Radiology I with knowledge of radiation history, physics, biology, radiation characteristics, and alternative and supplemental radiographic techniques and radiographic procedures, exposure factors, image production, extra-oral radiology, specialized imaging, radiographic anatomy, interpretation, pitfalls and radiographic administration. (Prerequisite: DA 1816)

Nitrous Oxide Sedation

DA 1828 1.00 credits

Nitrous Oxide Sedation is designed to provide fundamental knowledge, elements, purposes and uses of Nitrous Oxide sedation for the Dental Hygienist and Dental Assistant. (Prerequisite: DA 1814, HLTH 1950, 1952, 1954)

D.A. Internship I

DA 1831 4.00 credits

Dental Assisting Internship I is designed to introduce the dental assisting student to the dental practice environment with clinical application of all knowledge and skills learned throughout the Dental Assisting program. The extra-mural experience provides delegated clinical duties and expanded functions assigned to the dental assistant within the field of dentistry in the local community. (Prerequisites: Successful completion of all previous dental assisting course work. Valid Healthcare Provider CPR)

CPR

HLTH1950 1.00 credits

Dental Assisting Expanded Functions

DA 1825 5.00 credits

Dental Assisting Expanded Functions is designed to train chairside dental assistants in the Expanded Functions for an advanced level of skills and knowledge permitted to provide intra-oral patient care procedures beyond traditional dental assisting duties. Procedures emphasized will be those legally allowed by the Minnesota Board of Dentistry for Licensed Dental Assistants. (Prerequisites: DA 1814, 1815)

Dental Nutrition

DA 1827 1.00 credits

This course is designed to provide basic background knowledge in nutrition as it pertains to dental health and preventative dental philosophies. Emphasis will be placed on preventative dentistry and nutrition benefits of dental health. The focus of this course is to provide the student with the knowledge to define nutrition, describe key nutrients, use dietary guidelines, food labeling, food pyramids, define dental diets. Emphasis will be placed on dental health and nutritional guidelines. (Prerequisite: Admitted to Dental Assisting program)

Chairside Dental Assisting II

DA 1830 4.00 credits

Chairside Dental assisting II is a continuation of Chairside Dental Assisting I designed to provide a working knowledge of general and specialty laboratory skills with clinical skills in chairside dental assisting and laboratory dental procedures. Emphasis will be placed on general dental procedures, associated skills, dental armamentarium and supplies. (Prerequisites: DA 1814, 1815)

D.A. Internship II

DA 1841 4.00 credits

Dental Assisting II is a continuation of the extramural dental assisting experience designed to give the dental assistant student practical experience in dental practices. Clinical duties and expanded functions covering all aspects of the dental practice will be utilized. (Prerequisites: Successful completion of all previous dental assisting courses. Valid Healthcare Provider CPR)

First Aid

HLTH1952 1.00 credits

This course covers the skills of infant, child and adult single and two rescue CPR as well as relief of foreign body airway obstruction procedures for infant, child and adult. Automated external defibrillators, bag-valve masks and pocket masks are also used. Signs and symptoms of stroke and heart attack are also discussed. This course meets the criteria of the American Heart Association 2010 Guidelines for CPR and ECC.

Safety

HLTH1954 1.00 credits

This course includes basic OSHA safety standards. Hearing protection, eye protection, back injuries, lockout/tagout procedures, Hazard Communication standard, bloodborne pathogens, and substance abuse in the workplace are examples of topics covered in this course. The consequences of disregarding safety practices are explored. This course is appropriate for individuals who may be entering a new vocation. The topics covered include items from the health care realm to items concerning business, manufacturing, and industrial issues. (Prerequisite: None)

Composition

ENGL100 4.00 credits

Composition is concerned with developing, through theory and practice, the ability to communicate in written form for personal and professional reasons. Students will develop writing skills, analytical skills, and critical thinking skills. Students will complete readings, papers, grammar exercises, and in-class activities. Students will learn methods of writing informatively and persuasively. (Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher AND a score of 85.5 or higher on the Sentence Skills portion of the Accuplacer test or completion of ENGL 0080 and ENGL 0090 with a grade of C or higher)(MNTC 1: Communication) This course has an online option.

Ethics in Society

PHIL100 3.00 credits

This course studies the foundations for moral beliefs, judgments, and values and the part they play in practical ethical judgments. In its application, the course deals with contemporary issues and explores specific issues of personal morality as well as business and social ethics. (Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher) (MNTC 6, 9: Humanities & Fine Arts, Ethical & Civil Responsibility)

This course includes emergency care training for initial treatment of illness and injury. Patient assessment, bleeding control, shock management, soft tissue injury, orthopedic injury, diabetic problems, seizures, poisons, heat exposure, and cold exposure are some of the topics covered in this course. This course is appropriate for anyone who may need to render immediate care. The items covered in the course are just as applicable to an industrial or a business work setting, as they are to a daycare facility, or even at home. (Prerequisite: None).

Interpersonal Communication

COMM140 3.00 credits

In this class, participants will examine key components of interpersonal communication theory, identify the interpersonal communication skills necessary for healthy relationships, assess their own interpersonal communication effectiveness, and practice and hone interpersonal communication skills necessary for healthy home and work relationships. This course will also address relevant issues of social interaction, including how human diversity/culture (age, race, gender, etc.) affects our interpersonal communication. (Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher)(MNTC 1: Communication)

Concepts in Math

MATH115 4.00 credits

Concepts in Mathematics is a general education survey course designed to spotlight the field as an important component of our cultural heritage. It introduces a broad range of topics from classical as well as modern mathematics. The emphasis is on problem solving and developing the logical skills to successfully defend solutions, while at the same time showing how mathematics is a creative human endeavor influencing how we perceive the world. Among the major topics considered are logic, set theory, axiomatic systems, number theory, number systems, analytic geometry, algebra, combinatorics, and elementary probability. (Prerequisites: Two years of high school algebra, completion of MATH 0085 with a grade of C or higher or a score of 75.5 or higher on the Elementary Algebra portion of the Accuplacer test) (MNTC 4: Math/Logical Reasoning)

Dental Assisting

Diploma • 52 Credits

DIP 3302



Degree Description

Here is a list of courses required to earn the Dental Assisting Diploma of Occupational Proficiency

Admission Dates: Fall Semester

Offered on the North Mankato Campus

The course requirements listed below are specific to the 2013-2014 school year. If you need to view the program from previous years view our [Catalog Archive](#).

This credential is part of the Dental Assisting department. [See the Dental Assisting department page for more details](#)

Required Technical Courses (19 Courses)

Complete all of the following courses:

- [DA 1810](#) Dental Technology (1 Credit)
- [DA 1811](#) Dental Science I (2 Credits)
- [DA 1812](#) Oral Anatomy (2 Credits)
- [DA 1813](#) Preclinical Dental Assisting (2 Credits)
- [DA 1814](#) Chairside Dental Assisting I (4 Credits)
- [DA 1815](#) Dental Materials (3 Credits)
- [DA 1816](#) Radiology I (3 Credits)
- [DA 1821](#) Dental Practice Management (2 Credits)
- [DA 1823](#) Dental Science II (2 Credits)
- [DA 1825](#) Dental Assisting Expanded Functions (5 Credits)
- [DA 1826](#) Radiology II (3 Credits)
- [DA 1827](#) Dental Nutrition (1 Credit)
- [DA 1828](#) Nitrous Oxide Sedation (1 Credit)
- [DA 1830](#) Chairside Dental Assisting II (4 Credits)
- [DA 1831](#) D.A. Internship I (4 Credits)
- [DA 1841](#) D.A. Internship II (4 Credits)
- [HLTH1950](#) CPR (1 Credit)
- [HLTH1952](#) First Aid (1 Credit)
- [HLTH1954](#) Safety (1 Credit)

Required General Education (2 Courses)

Courses must be selected in consultation with advisor/faculty.

- [PHIL100](#) Ethics in Society (3 Credits)
- [COMM140](#) Interpersonal Communication (3 Credits)

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Dental Assisting - Diploma of Occupational Proficiency Course Descriptions**Dental Technology****DA 1810 1.00 credits**

Students will learn dental computer software. Course focus will be to access and utilize appointment book, patient records, insurance procedures and CDT coders. (Prerequisites: Admission to Dental Assisting program and basic computer skills)

Dental Science I**DA 1811 2.00 credits**

Dental Science is designed to provide the student with the fundamental, anatomical, and physiological structures of the human body. Emphasis will be placed on the head and neck anatomy. The focus of the course is to help students with no prior preparation in science to have a fundamental understanding of the structure and function of the human body with emphasis on the head and neck. The student will develop the necessary background knowledge to be a successful chairside and clinical assistant. (Prerequisites: Admitted to Dental Assisting program)

Oral Anatomy**DA 1812 2.00 credits**

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techniques, film mounting and patient management, and recordkeeping. (Prerequisites: DA 1810, 1811, 1812)

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D.A. Internship II

DA 1841 4.00 credits

Dental Assisting II is a continuation of the extramural dental assisting experience designed to give the dental assistant student practical experience in dental practices. Clinical duties and expanded functions covering all aspects of the dental practice will be utilized. (Prerequisites: Successful completion of all previous dental assisting courses. Valid Healthcare Provider CPR)

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HLTH1952 1.00 credits

This course covers the skills of infant, child and adult single and two rescue CPR as well as relief of foreign body airway obstruction procedures for infant, child and adult. Automated external defibrillators, bag-valve masks and pocket masks are also used. Signs and symptoms of stroke and heart attack are also discussed. This course meets the criteria of the American Heart Association 2010 Guidelines for CPR and ECC.

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HLTH1954 1.00 credits

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Interpersonal Communication

COMM140 3.00 credits

In this class, participants will examine key components of interpersonal communication theory, identify the interpersonal communication skills necessary for healthy relationships, assess their own interpersonal communication effectiveness, and practice and hone interpersonal communication skills necessary for healthy home and work relationships. This course will also address relevant issues of social interaction, including how human diversity/culture (age, race, gender, etc.) affects our interpersonal communication. (Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher)(MNTC 1: Communication)

This course includes emergency care training for initial treatment of illness and injury. Patient assessment, bleeding control, shock management, soft tissue injury, orthopedic injury, diabetic problems, seizures, poisons, heat exposure, and cold exposure are some of the topics covered in this course. This course is appropriate for anyone who may need to render immediate care. The items covered in the course are just as applicable to an industrial or a business work setting, as they are to a daycare facility, or even at home. (Prerequisite: None).

Ethics in Society

PHIL100 3.00 credits

This course studies the foundations for moral beliefs, judgments, and values and the part they play in practical ethical judgments. In its application, the course deals with contemporary issues and explores specific issues of personal morality as well as business and social ethics. (Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher) (MNTC 6, 9: Humanities & Fine Arts, Ethical & Civil Responsibility)

Emergency Medical Services Department Overview

Emergency Medical Services is NOT a program leading to a degree at South Central College. Rather, they are courses that lead to certifications that prepare students to render emergency medical services to the public.

These certifications are not eligible for federal student aid.

Basic Entrance Requirements

Students must be 18 years of age prior to the start of the initial Emergency Medical Technician (EMT) course. There is not an age requirement for the First Responder course.

Student Background Studies

Minnesota law requires that any person who provides services that involve direct contact with patients and residents at a health care or child care facility licensed by the Minnesota Department of Health have a background study conducted by the state. An individual who is disqualified from having direct patient contact as a result of the background study, and whose disqualification is not set aside by the Commissioner of Health, will not be permitted to participate in a clinical placement in a Minnesota licensed health care or child care facility. Failure to participate in a clinical placement required by the program could result in ineligibility to qualify for completion of the course.

Department Faculty

Baldwin Brenda, Nona Niemeier

Emergency Medical Services Degrees

Emergency Medical Technician

Emergency Medical Technician

Degree Description

Emergency Medical Technician is NOT a program leading to a degree at South Central College. It is a series of courses that lead to certifications that prepare students to render emergency medical services to the public.

These certifications are not eligible for federal student aid.

Basic Entrance Requirements

Students must be 18 years of age prior to the start of the initial Emergency Medical Technician (EMT) course. There is not an age requirement for the First Responder course.

Student Background Studies

Minnesota law requires that any person who provides services that involve direct contact with patients and residents at a health care or child care facility licensed by the Minnesota Department of Health have a background study conducted by the state. An individual who is disqualified from having direct patient contact as a result of the background study, and whose disqualification is not set aside by the Commissioner of Health, will not be permitted to participate in a clinical placement in a Minnesota licensed health care or child care facility. Failure to participate in a clinical placement required by the program could result in ineligibility to qualify for completion of the course.

Admission Dates: Fall and Spring Semester

Offered on the North Mankato Campus

The course requirements listed below are specific to the 2013-2014 school year. If you need to view the program from previous years view our [Catalog Archive](#).

This credential is part of the Emergency Medical Services department. [See the Emergency Medical Services department page for more details](#)

(4 Courses)

[HEMS1200](#) Emergency Medical Technician Initial (160 Hours) (7 Credits)

[HEMS1220](#) Emergency Medical Technician Refresher (24 Hours) (2 Credits)

[HEMS1300](#) First Responder Initial (48 Hours) (2 Credits)

[HEMS1320](#) First Responder Refresher (16 Hours) (1 Credit)

PLEASE NOTE: All program plans are preliminary and curriculum may change without notice. Your [catalog of record](#) may have different requirements.

Emergency Medical Technician - Course Descriptions**Emergency Medical Technician Initial (160 Hours)****HEMS1200 7.00 credits**

This course will provide the participant the necessary didactic and cognitive skills to enter the Basic Life Support Ambulance occupation arena as an EMT. Upon successful completion of this course the participant will be able to take the National registry of Emergency Medical Technician written and practical examination, administered by the Minnesota EMS Regulatory Board. The course follows the guidelines established by the United States Department of Transportation and meets the requirements set forth by the Minnesota EMS Regulatory Board. This course is a requirement to progress into the Intensive Care Paramedic Program of study. (Prerequisite: Student must be 18 years of age by the start of the course.)

Emergency Medical Technician Refresher (24 Hours)**HEMS1220 2.00 credits**

This course will provide the participant the necessary didactic and cognitive skills to continue in the Basic Life Support Ambulance occupation arena as an EMT. Upon successful completion of this course, the participant will be able to take the practical examination administered by the Minnesota EMS Regulatory Board. The course follows the guidelines established by the guidelines established by the United States Department of Transportation and meets the requirements set forth by the Minnesota EMS Regulatory Board.

First Responder Initial (48 Hours)**HEMS1300 2.00 credits**

This 48-hour course provides emergency care training to fire/rescue personnel, law enforcement officers, industrial safety personnel, especially when they are the first on the scene of injuries and medical problems. The course is approved by the Minnesota EMS Regulatory Board and Post-Board approved. As a result of 1999 Minnesota Legislation, prospective First Responder students who have committed misdemeanors, gross misdemeanors or felonies may not qualify to be certified as First Responders. (Prerequisite: None)

First Responder Refresher (16 Hours)**HEMS1320 1.00 credits**

This course is designed to provide the First Responder at the scene of a medical emergency the necessary knowledge and skills to manage patient care until the arrival of ambulance personnel. This course is for individuals who are currently First Responders needing to refresh to maintain certification. This course meets or exceeds the guidelines set forth by the United States Department of Transportation and the Minnesota EMS Regulatory Board.

Energy Technical Specialist Department Overview

This program prepares individuals in the energy technology field. The Energy Technical Specialist Associate in Applied Science Degree will convey the skills and knowledge necessary to be successful in both the traditional and renewable energy fields. Students will have the option to take courses in windsmith, ethanol, biodiesel, solar power, fossil fuels, and power generation.

Instruction will be offered utilizing resources from several different MnSCU colleges: Alexandria Technical College, Century College, Dakota County Technical College, Hibbing Community College, Itasca Community College, Mesabi Range Community and Technical College, Minnesota West Community and Technical College, South Central College, St. Cloud Technical and Community College, Rainy River Community College and Vermilion Community College.

Basic Requirements

Math: Students must score 75.50 or higher on the Elementary Algebra test and 49.50 or higher on the College Level Mathematics test and/or instructor approval.

Reading & Writing: Students must score 77.50 or higher on the Reading Comprehension test and 85.50 or higher on the Sentence Skills test and/or instructor approval.

Core Competencies

1. Convey the skills and knowledge in traditional and renewable energy fields
2. Prepare students for work within the energy fields
3. Prepare students for work within the specialty area
4. Demonstrate effective participation on a team

Energy Technical Specialist Degrees

Energy Technical Specialist AAS Degree

Energy Technical Specialist

A.A.S. Degree • 60 Credits

AAS 3482



Degree Description

Here is a list of courses required to earn the Energy Technical Specialist Associate of Applied Science Degree

Admission Dates: Fall and Spring Semester

Offered on the North Mankato Campus

The course requirements listed below are specific to the 2013-2014 school year. If you need to view the program from previous years view our [Catalog Archive](#).

This credential is part of the Energy Technical Specialist department. [See the Energy Technical Specialist department page for more details](#)

Required Technical Courses (12 Courses)

Select the following courses:

- [MECA1122](#) Electricity - Devices and Circuits I (3 Credits)
 - [MECA1210](#) Digital Electronics (3 Credits)
 - [MECA1220](#) Mechanical Systems (3 Credits)
 - [MECA1222](#) Electricity - Devices and Circuits II (3 Credits)
 - [MECA1250](#) Mechatronics Systems Operations I (3 Credits)
 - [MECA1270](#) Modeling and Simulation (3 Credits)
 - [MECA2110](#) Sensors and Control (3 Credits)
 - [MECA2120](#) Pneumatics Systems (3 Credits)
 - [MECA2130](#) Hydraulics (3 Credits)
 - [RNEW1115](#) Mechanical Fundamentals (MN West) (3 Credits)
 - [RNEW1300](#) Introduction to Traditional/Renewable Energy (MN West) (3 Credits)
 - [HLTH1954](#) Safety (1 Credit)
- And
- [ELWT1160](#) Environmental Health and Safety (MN West) (1 Credit)
- Or
- [SHA 1600](#) Introduction to Industrial Safety & Health (Hibbing CC) (2 Credits)

Elective Credits (10 Credits)

Technical Courses (Specialty Emphasis) Select 10 credits from the following Energy Technology Specialty Options. Courses are offered at multiple MnSCU colleges. See your advisor for more information. Windsmith, Ethanol, Biodiesel, Solar Power, Fossil Fuels, Power Generation

WIND POWER

- [ELWT1100](#) Wind Energy Fundamentals (MN West) (3 Credits)
- [ELWT1170](#) OSHA Standards & Climbing Lab (MN West) (2 Credits)

SOLAR

SEE ADVISOR

ETHANOL

- [RNEW1100](#) Process Dynamics (MN West) (3 Credits)
- [RNEW1101](#) Ethanol Process Fundamentals (MN West) (2 Credits)
- [RNEW1175](#) Industrial Water Treatment (MN West) (2 Credits)
- [RNEW2120](#) Ethanol Separation Technology (MN West) (2 Credits)

BIODIESEL

- [RNEW1100](#) Process Dynamics (MN West) (3 Credits)
- [RNEW1102](#) Biodiesel Process Fundamentals (MN West) (2 Credits)
- [RNEW1175](#) Industrial Water Treatment (MN West) (2 Credits)
- [RNEW1195](#) Feedstock, Technology & Regulations (MN West) (2 Credits)

FOSSIL FUEL

SEE ADVISOR

POWER GEN

- [ETEC2546](#) Power Plant Technology (St. Cloud TCC) (4 Credits) (Credit)

Required Liberal Arts and Sciences (5 Courses)

To complete an AAS degree, students must complete courses in 3 of the 10 MNTC goal areas. These courses do not apply to the 53 technical credits and may appear elsewhere on your degree audit. Select the following courses:

ENGL100 Composition (4 Credits)

BIOL106 Introduction to Cell Biology (3 Credits)

And

CHEM108 Introduction to Chemistry (4 Credits)

Or

PHYS101 Introductory Physics (3 Credits)

Or

PHYS211 Principles in Physics I (4 Credits)

MATH120 College Algebra (4 Credits)

PLEASE NOTE: All program plans are preliminary and curriculum may change without notice. Your [catalog of record](#) may have different requirements.

Energy Technical Specialist - Associate of Applied Science Degree Course Descriptions**Electricity - Devices and Circuits I****MECA1122 3.00 credits**

This course provides an exploration of the basics in electricity and electronics. Topics include an overview of direct current, circuit laws, components, and use of test equipment. Students learn the basic technique of troubleshooting electric circuits, including measurement techniques, analysis of faults, and repair procedures. Teamwork, critical thinking, and problem solving are emphasized. Hands-on experience and practical applications are included. (Prerequisites: Must have a score of 56 or higher on the Arithmetic portion of the Accuplacer test or Instructor approval)

Digital Electronics**MECA1210 3.00 credits**

This course explores the general fundamentals of digital electronic circuits. To learn the theory and operation of digital electronics, students will get hands-on experience with basic logic gates; sequential logic circuits, such as flip-flops, counters, and shift registers; and combinational logic circuits that include encoders, decoders, multiplexers, and arithmetic devices. A variety of measurement equipment will be used to test and troubleshoot solid state and digital circuits created on breadboards during lab sessions. Teamwork, critical thinking skills, and practical applications of circuits will be emphasized. (Prerequisite: None)

Mechanical Systems**MECA1220 3.00 credits**

This course includes an introduction to mechanical drive systems, power transmission systems, chain drives, v-belt and, multiple shaft drives, linear motion assemblies, and auxiliary control functions. The student will study the application of spur, helical, bevel and worm gears as well as the use of keys, pins, and splines to attach gears to shafts. Machine elements such as; displacement, velocity, acceleration, springs, power screws, brakes and clutches will also be topics covered. Computer simulation and 3D software will be used throughout the course. Troubleshooting of mechanical systems will be emphasized. Technical writing skills and safety procedures will be implemented throughout the course. (Prerequisites: PHYS 101 or comparable with approval of Instructor)

Electricity - Devices and Circuits II**MECA1222 3.00 credits**

This course provides an exploration of the basics in electricity and electronics. Topics include an overview of alternating current, circuit laws, components, and use of test equipment. Students learn the basic technique of troubleshooting electric circuits, including measurement techniques, analysis of faults, and repair procedures. Teamwork, critical thinking, and problem solving are emphasized. Hands-on experience and practical applications are included. (Prerequisites: MECA 1122)

Mechatronics Systems Operations I**MECA1250 3.00 credits**

This course will provide the student with the principles of programmable logic controllers (PLC) hardware and fundamental sequence control systems. The student will gain essential knowledge necessary to create and edit basic PLC programs that will include timers, counters and special function blocks. As well as gaining an understanding of interfacing discrete input-output (I/O). The student will also perform fundamental PLC troubleshooting procedures. Technical writing skills and safety procedures will be implemented throughout the course. (Prerequisites: MECA 1122)

Modeling and Simulation**MECA1270 3.00 credits**

This course will provide students with the understanding of the interaction of the parts of a system, and of the system as a whole. A unified approach to modeling of dynamic systems using computer simulation and model validation is used. Emphasis will be on modeling and simulation of mechanical parts and assemblies, electronic circuits, fluid power systems and PLC controlled automation systems. Technical writing skills and safety procedures will be implemented throughout the course. (Prerequisites: MECA 1131)

Sensors and Control

MECA2110 3.00 credits

This course will provide students with the principles of measurement and control systems. The student will gain an understanding of different sensor technologies used to measure and detect physical properties used in a variety of electro mechanical, electro hydraulic and electro pneumatic systems. The student, through lab work, will also learn how to use and troubleshoot sensors used in open and closed loop control systems. Technical writing skills and safety procedures will be implemented throughout the course. This course assumes the student understands basic electrical, mechanical, and programming concepts. (Prerequisites: MECA 1122)

Hydraulics

MECA2130 3.00 credits

This course provides the basics of hydraulically operated devices and systems found in modern industrial machinery and automation. Topics include proper safety procedures, basic laws of fluid mechanics, standard symbols, pumps, control valves, control assemblies, actuators, maintenance procedures, and switching and control devices. At the completion of this course, the student will be able to design and specify characteristics of a hydraulic system; select and size actuators, and match the hydraulic component name with its ANSI symbol. Upon completion of this course, the student should be able to identify long-term symptoms associated with a lack of preventive maintenance of hydraulic components while demonstrating good safety practices including lock out procedures. Technical writing skills and safety procedures will be implemented throughout the course. (Prerequisites: None)

Introduction to Traditional/Renewable Energy (MN West)

RNEW1300 3.00 credits

This course is offered through Minnesota West Community & Technical College. Please refer to the course description located at the MN West website: www.mnwest.edu

Environmental Health and Safety (MN West)

ELWT1160 1.00 credits

This course is offered through Minnesota West Community &

Pneumatics Systems

MECA2120 3.00 credits

This course provides the basics of pneumatically operated devices and the systems found in modern industrial machinery and automation. Topics include proper safety procedures, basic laws of fluid mechanics, standard symbols, pumps, control valves, control assemblies, actuators, maintenance procedures, and switching and control devices. At the completion of this course, the student will be able to apply basic laws of fluid mechanics to design and specify characteristics of a pneumatic system; select and size actuators and control valves, and match the pneumatic components with its ANSI symbol. Upon completion of this course, the student should be able to identify long-term symptoms associated with a lack of preventive maintenance of pneumatic components while demonstrating good safety practices including lock out procedures. Technical writing skills and safety procedures will be implemented throughout the course. (Prerequisites: None)

Mechanical Fundamentals (MN West)

RNEW1115 3.00 credits

This course is offered through Minnesota West Community & Technical College. Please refer to the course description located at the MN West website: www.mnwest.edu

Safety

HLTH1954 1.00 credits

This course includes basic OSHA safety standards. Hearing protection, eye protection, back injuries, lockout/tagout procedures, Hazard Communication standard, bloodborne pathogens, and substance abuse in the workplace are examples of topics covered in this course. The consequences of disregarding safety practices are explored. This course is appropriate for individuals who may be entering a new vocation. The topics covered include items from the health care realm to items concerning business, manufacturing, and industrial issues. (Prerequisite: None)

Introduction to Industrial Safety & Health (Hibbing CC)

SHA 1600 2.00 credits

This course is offered through Hibbing Community College.

Technical College. Please refer to the course description located at the MN West website: www.mnwest.edu

Please refer to the course description located at the HCC website: www.hibbing.edu

Wind Energy Fundamentals (MN West)

ELWT1100 3.00 credits

This course is offered through Minnesota West Community & Technical College. Please refer to the course description located at the MN West website: www.mnwest.edu

OSHA Standards & Climbing Lab (MN West)

ELWT1170 2.00 credits

This course is offered through Minnesota West Community & Technical College. Please refer to the course description located at the MN West website: www.mnwest.edu

Process Dynamics (MN West)

RNEW1100 3.00 credits

This course is offered through Minnesota West Community & Technical College. Please refer to the course description located at the MN West website: www.mnwest.edu

Ethanol Process Fundamentals (MN West)

RNEW1101 2.00 credits

This course is offered through Minnesota West Community & Technical College. Please refer to the course description located at the MN West website: www.mnwest.edu

Industrial Water Treatment (MN West)

RNEW1175 2.00 credits

This course is offered through Minnesota West Community & Technical College. Please refer to the course description located at the MN West website: www.mnwest.edu

Ethanol Separation Technology (MN West)

RNEW2120 2.00 credits

This course is offered through Minnesota West Community & Technical College. Please refer to the course description located at the MN West website: www.mnwest.edu

Process Dynamics (MN West)

RNEW1100 3.00 credits

This course is offered through Minnesota West Community & Technical College. Please refer to the course description located at the MN West website: www.mnwest.edu

Biodiesel Process Fundamentals (MN West)

RNEW1102 2.00 credits

This course is offered through Minnesota West Community & Technical College. Please refer to the course description located at the MN West website: www.mnwest.edu

Industrial Water Treatment (MN West)

RNEW1175 2.00 credits

This course is offered through Minnesota West Community & Technical College. Please refer to the course description located at the MN West website: www.mnwest.edu

Feedstock, Technology & Regulations (MN West)

RNEW1195 2.00 credits

This course is offered through Minnesota West Community & Technical College. Please refer to the course description located at the MN West website: www.mnwest.edu

Power Plant Technology (St. Cloud TCC)

ETEC2546 4.00 credits

This course is offered through St. Cloud Technical & Community College. Please refer to the course description located at the SCTCC website: www.sctcc.edu

Composition

ENGL100 4.00 credits

Composition is concerned with developing, through theory and practice, the ability to communicate in written form for personal and professional reasons. Students will develop writing skills, analytical skills, and critical thinking skills. Students will complete readings, papers, grammar exercises, and in-class activities. Students will learn methods of writing informatively and persuasively. (Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher AND a score of 85.5 or higher on the Sentence Skills portion of the Accuplacer test or completion of ENGL 0080)

and ENGL 0090 with a grade of C or higher)(MNTC 1: Communication) This course has an online option.

Introduction to Cell Biology

BIOL106 3.00 credits

This is an introductory cell biology course dealing with: the cell structure and organelles; basic chemistry and biochemical molecules; cell transport and energy concepts; cellular respiration; cell reproduction; patterns of inheritance; structure and function of DNA; how genes are controlled; DNA technology. (Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ0080 and READ0090 with a grade of C or higher) (MNTC 3: Natural Sciences)

Introductory Physics

PHYS101 3.00 credits

A one semester course covering the basic principles of physics at a conceptual level and with a minimal amount of math. Topics generally included mechanics, simple machines, atomic structure, heat, light, and sound. Lecture and laboratory. (Prerequisites: Must have a score of 56 or higher on the Arithmetic portion of the Accuplacer test or completion of MATH 0075 with a grade of C or higher) (MNTC 3: Natural Sciences)

College Algebra

MATH120 4.00 credits

This course is mainly concerned with functions, most of which are algebraic. It begins with a general treatment of equations and inequalities and then proceeds to cover linear functions, quadratic functions, other polynomial and rational functions, piecewise functions, equations involving radicals and absolute values, logarithms and exponentials, systems of equations and inequalities, permutations and combinations. (Prerequisites: Two years of high school algebra or completion of MATH 0085 with a grade of C or higher, or a score of 75.5 on the Elementary Algebra portion of the Accuplacer test AND a score of 49.5 or higher on the College Level Math portion of the Accuplacer test) (MNTC 4: Mathematical/Logical Reasoning)

Introduction to Chemistry

CHEM108 4.00 credits

A one-semester introduction to the field of chemistry, this course is designed to allow the student to understand how chemistry relates to everyday life and to learn some of the language and concepts of chemistry related to applied health. This course uses a math-based approach. (Prerequisite: Must have a score of 75.5 or higher in the Elementary Algebra portion of the Accuplacer test or completion of MATH 0085 with a grade of C or higher.) (MNTC 3: Natural Sciences)

Principles in Physics I

PHYS211 4.00 credits

This is the first half of a one-year sequence in physics. It covers the general background in algebra-based physics. Topics include classical mechanics, fluid mechanics, wave and sound, thermal physics. Lecture and laboratory. (Prerequisites: MATH 120 and 125, or MATH 130) (MNTC: 3, Natural Sciences)

Engineering Department Overview

The Associate of Science in Engineering Fundamentals is a rigorous curriculum in Mathematics, Physics and Engineering designed to prepare students for transfer to a four year Engineering program. It is designed to meet lower division Engineering requirements at many universities and specifically articulates with the Civil Engineering program at Minnesota State University, Mankato. Although the first two years of Engineering courses for all Engineering degrees are similar, students should consult with their advisor and the transfer institution to determine the specific lower division requirements.

Department Faculty

Joel Boehlke, Eric Hall, Jay Stencel

Engineering Degrees

Engineering Broad Field

A.S. Degree • 60 Credits

AS 3497



Degree Description

South Central College has created a new engineering degree designed to transfer to a 4-year bachelor's program in engineering. The Engineering Foundations program covers the courses required in the first two years of most engineering disciplines. Students will learn to apply math and science to help solve real-life problems.

A key factor for student success is the creation of a fabrication lab (Fab Lab) to allow Engineering students to have access to equipment and instructors to assist in working on solving practical problems. Students will learn to gain understanding of how to test theories by doing experiments in SCC's Fab Lab.

Admission Dates: Fall Semester

Offered on the North Mankato Campus

The course requirements listed below are specific to the 2013-2014 school year. If you need to view the program from previous years view our [Catalog Archive](#).

This credential is part of the Engineering department. [See the Engineering department page for more details](#)

Required Core Courses (8 Courses)

Complete the following courses:

- [ENGL100](#) Composition (4 Credits)
- [CHEM120](#) Principles of Chemistry I (5 Credits)
- [PHYS221](#) General Physics I (4 Credits)
- [PHYS222](#) General Physics II (4 Credits)
- [MATH131](#) Calculus I (4 Credits)
- [MATH132](#) Calculus II (4 Credits)
- [MATH231](#) Ordinary Differential Equations (4 Credits)
- [MATH233](#) Multivariable Calculus (4 Credits)

Additional Required Liberal Arts and Sciences

To complete this AS degree, you must have a minimum of 30 credits in Liberal Arts and Sciences in at least 6 MnTC goal areas. The required Liberal Arts and Sciences courses satisfy goals 1,3 and 4. You must complete an additional 6 credits in at least 3 MnTC goal areas to satisfy your degree requirements.

PLEASE NOTE: All program plans are preliminary and curriculum may change without notice. Your [catalog of record](#) may have different requirements.

Select one of the following Engineering Specialties. (14 Credits)

You must complete at least one of the specialties in its entirety to graduate.

Civil Engineering Specialty Complete the following 14 credits:

- [ENGR2110](#) Statics (3 Credits)
- [ENGR2211](#) Dynamics (3 Credits)
- [ENGR2220](#) Mechanics of Materials (3 Credits)
- [ENGR1110](#) Introduction to Engineering (2 Credits)
- [ENGR2510](#) Thermodynamics (3 Credits)

Electrical Engineering Specialty (13 Credits)

Complete the following 13 credits:

- [ENGR2311](#) Computer Programming (3 Credits)
- [ENGR2231](#) Circuits I (4 Credits)
- [ENGR2532](#) Circuits II (3 Credits)
- [MECA1210](#) Digital Electronics (3 Credits)

Computer Engineering Specialty (13 Credits)

Complete the following 13 credits:

- [ENGR2311](#) Computer Programming (3 Credits)
- [ENGR2231](#) Circuits I (4 Credits)
- [ENGR2532](#) Circuits II (3 Credits)
- [MECA1210](#) Digital Electronics (3 Credits)

General Engineering Specialty (18 Credits)

Complete the following 18 credits:

- [ENGR2110](#) Statics (3 Credits)
- [ENGR2211](#) Dynamics (3 Credits)
- [ENGR2220](#) Mechanics of Materials (3 Credits)
- [ENGR1110](#) Introduction to Engineering (2 Credits)

[ENGR2311](#) Computer Programming (3 Credits)

[ENGR2231](#) Circuits I (4 Credits)

Mechanical Engineering Specialty (21 Credits)

Complete the following 21 credits:

[ENGR2110](#) Statics (3 Credits)

[ENGR2211](#) Dynamics (3 Credits)

[ENGR2220](#) Mechanics of Materials (3 Credits)

[ENGR1110](#) Introduction to Engineering (2 Credits)

[ENGR2510](#) Thermodynamics (3 Credits)

[ENGR2311](#) Computer Programming (3 Credits)

[ENGR2231](#) Circuits I (4 Credits)

Required Electives

Select an additional 0-8 credits of Electives or Liberal Arts and Sciences (MNTC) courses to meet the 60 credit requirement.

Courses may not have been used to satisfy requirements in your specialty area.

Select from the technical elective courses listed below or any additional MNTC approved courses.

[ENGR2110](#) Statics (3 Credits)

[ENGR2211](#) Dynamics (3 Credits)

[ENGR1110](#) Introduction to Engineering (2 Credits)

[ENGR1211](#) Engineering Drafting (2 Credits)

[ENGR1211](#) Engineering Drafting (2 Credits)

[ENGR1810](#) Surveying (2 Credits)

[ENGR2510](#) Thermodynamics (3 Credits)

[ENGR2311](#) Computer Programming (3 Credits)

[MECA1140](#) Introduction to Geometric Dimensioning & Tolerancing (1 Credit)

[MATH154](#) Elementary Statistics (4 Credits)

[CHEM121](#) Principles of Chemistry II (5 Credits)

Manufacturing Engineering Specialty (13 Credits)

Complete the following 13 credits:

[ENGR2110](#) Statics (3 Credits)

[ENGR2211](#) Dynamics (3 Credits)

[ENGR2220](#) Mechanics of Materials (3 Credits)

[ENGR2231](#) Circuits I (4 Credits)

Elective Courses (Suggested)

These courses are not required but are suggested as courses which may be beneficial to you in this career field. You will graduate from this program even if you do not complete these courses.

[ENGR1111](#) (1 Credit)

[ENGR1212](#) (1 Credit)

[ENGR2113](#) Engineering Design and Principles 3 (1 Credit)

[ENGR2214](#) Engineering Design and Principles 4 (1 Credit)

Engineering Broad Field - Associate in Science Course Descriptions

Composition

ENGL100 4.00 credits

Composition is concerned with developing, through theory and practice, the ability to communicate in written form for personal and professional reasons. Students will develop writing skills, analytical skills, and critical thinking skills. Students will complete readings, papers, grammar exercises, and in-class activities. Students will learn methods of writing informatively and persuasively. (Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher AND a score of 85.5 or higher on the Sentence Skills portion of the Accuplacer test or completion of ENGL 0080 and ENGL 0090 with a grade of C or higher)(MNTC 1: Communication) This course has an online option.

General Physics I

PHYS221 4.00 credits

This course will provide students with the principles of calculus based physics. The course has been designed for students who plan advanced study of science and/or engineering. The course will cover basic principles of mechanics including kinematics, statics, equilibrium and dynamics of particles, work and energy, rotational motion, gravitation, and oscillation. (Prerequisites: High School Physics, PHYS 101 or 211, MATH 131 with a grade of "C" or better or by instructor permission) (MNTC: 3, Natural Sciences)

Calculus I

MATH131 4.00 credits

This course introduces the key concepts of the derivative and the integral. Beginning with the definition of limit, the notion of continuity is developed which is perhaps the most important thread running throughout the calculus. This leads naturally to the process of differentiation and then integration, concluding with the all important Fundamental Theorem of the Calculus. Along the way, applications to classical and modern science, economics, the social sciences and other fields are explored. (Prerequisites: MATH 120 and MATH 125, or MATH 130 with a grade of C or better, and a score of 86 or higher on the College Level Mathematics portion of the Accuplacer test) (MNTC 4: Mathematical/Logical Reasoning)

Principles of Chemistry I

CHEM120 5.00 credits

This course introduces the student to the basic principles of chemistry, including atomic and molecular structure, bonding, chemical reactions, solution chemistry, stoichiometry, thermochemistry, periodicity, and states of matter. Laboratory reinforces lecture concepts. (Prerequisite: MATH 120, CHEM 108 or high school chemistry) (MNTC 3: Natural Sciences)

General Physics II

PHYS222 4.00 credits

This second course will provide students with the principles of calculus based physics. The course has been designed for students who plan advanced study of science and/or engineering. The course will cover basic principles of waves in light and sound; temperature, heat, and the First Law of Thermodynamics; electric charge; electric fields; Gauss' Law; electric potential; capacitance; resistance; electrical circuits; magnetic fields; induction; electromagnetic oscillations; and Maxwell's Equations. (Prerequisites: PHYS 221 with a grade of "C" or better, MATH 132 with a grade of "C" or better or by instructor permission) (MNTC: 3, Natural Sciences)

Calculus II

MATH132 4.00 credits

In this continuation of Calculus I, you will begin by investigating more applications of the definite integral, along with useful techniques for evaluating them. This leads in a natural way to a brief introduction to differential equations, and the evaluation of improper integrals and indeterminate forms. Next, the calculus of the transcendental functions is explored in some detail. Then the study of sequences and series is taken up, including power series and Taylor series. Important geometrical concepts such as polar coordinates, parametric equations and vectors in the plane and in space are also covered. (Prerequisites: MATH 131, with a grade of C or better) (MNTC 4: Mathematical/Logical Reasoning)

Ordinary Differential Equations

MATH231 4.00 credits

This is a traditional introductory course in ordinary differential equations for students pursuing careers in engineering, mathematics and the sciences; the focus is primarily on lower order equations. Topics include the solution of linear equations with constant coefficients, homogeneous and nonhomogeneous equations, assorted methods such as undetermined coefficients, variation of parameters and Laplace transforms. Also studied are existence and uniqueness theorems, numerical approximations, operator methods and various applications to physical phenomena. (Prerequisite: MATH 132 with a grade of C or higher) (MNTC 4: Mathematical/Logical Reasoning)

Statics

ENGR2110 3.00 credits

This is the first course in the engineering mechanics sequence. Course topics include vector math, equivalent systems of forces, equilibrium of particles and rigid bodies, trusses and frames, forces in beams, friction, and properties of areas including centroids and moments of inertia. This course will cover standard ABET professional outcomes a and e. (Prerequisite: PHYS 221)

Mechanics of Materials

ENGR2220 3.00 credits

This course teaches the fundamentals of deformable body mechanics beginning with the underlying concepts of stress, strain and the relationships between stress and strain. Students learn to analyze deformable bodies subjected to axial, torsional, bending, shear, internal pressure, and combined loadings. Students learn to predict the effects of such loadings on internal stresses, deformations and stability of structures. Methods of plane stress transformation are explored. This course will cover standard ABET professional outcomes a and e. (Prerequisite: ENGR 2110)

Thermodynamics

ENGR2510 3.00 credits

This course created for eCatalog only.

Circuits I

ENGR2231 4.00 credits

This course provides an exploration of the basics in electricity and electronics. Topics include an overview of direct current, circuit laws, components, and use of test equipment. Students

Multivariable Calculus

MATH233 4.00 credits

Multivariable Calculus extends the notions of Calculus I and Calculus II to functions of more than one variable. Topics include such things as curves and surfaces in Euclidean n-space, partial derivatives, directional derivatives, tangent planes and differentials, double- and triple-integrals, the rectangular, cylindrical and spherical coordinate systems, line integrals, surface integrals, Green's theorem, Stokes' theorem and the divergence theorem. (Prerequisite: MATH 132 with a grade of C or higher) (MNTC 4: Mathematical/Logical Reasoning)

Dynamics

ENGR2211 3.00 credits

This course focuses on the kinematics and kinetics of particles and rigid bodies. Students learn to analyze the motion of bodies using Newton's Second law, the method of work and energy and the method of impulse and momentum. This course will cover standard ABET professional outcomes a and e. (Prerequisite: ENGR 2110)

Introduction to Engineering

ENGR1110 2.00 credits

This course introduces students to the engineering profession and its various branches. Students will be introduced to some of the principles and physical laws that they will use throughout their college career. It also focuses on introducing the skills needed for college success by; assisting in the transition from high school to college, developing good study habits, networking with other students, organizations, and professionals, and developing team work, people, communication and time management skills. This course will cover standard ABET professional outcomes f through k. (Prerequisite: Must have a score of 49.5 or above on the College Level Math portion of the Accuplacer test or completion of MATH0085 with a grade of C or higher)

Computer Programming

ENGR2311 3.00 credits

This course created for eCatalog only.

Circuits II

ENGR2532 3.00 credits

This course created for eCatalog only.

learn the basic technique of troubleshooting electric circuits, including measurement techniques, analysis of faults, and repair procedures. This course will cover standard ABET professional outcomes a and b. (Prerequisites: MATH 131, ENGR 1110)

Digital Electronics

MECA1210 3.00 credits

This course explores the general fundamentals of digital electronic circuits. To learn the theory and operation of digital electronics, students will get hands-on experience with basic logic gates; sequential logic circuits, such as flip-flops, counters, and shift registers; and combinational logic circuits that include encoders, decoders, multiplexers, and arithmetic devices. A variety of measurement equipment will be used to test and troubleshoot solid state and digital circuits created on breadboards during lab sessions. Teamwork, critical thinking skills, and practical applications of circuits will be emphasized. (Prerequisite: None)

Circuits I

ENGR2231 4.00 credits

This course provides an exploration of the basics in electricity and electronics. Topics include an overview of direct current, circuit laws, components, and use of test equipment. Students learn the basic technique of troubleshooting electric circuits, including measurement techniques, analysis of faults, and repair procedures. This course will cover standard ABET professional outcomes a and b. (Prerequisites: MATH 131, ENGR 1110)

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Dynamics

ENGR2211 3.00 credits

This course focuses on the kinematics and kinetics of particles and rigid bodies. Students learn to analyze the motion of bodies using Newton's Second law, the method of work and energy and the method of impulse and momentum. This course will cover standard ABET professional outcomes a and e. (Prerequisite: ENGR 2110)

Computer Programming

ENGR2311 3.00 credits

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Circuits II

ENGR2532 3.00 credits

This course created for eCatalog only.

Statics

ENGR2110 3.00 credits

This is the first course in the engineering mechanics sequence. Course topics include vector math, equivalent systems of forces, equilibrium of particles and rigid bodies, trusses and frames, forces in beams, friction, and properties of areas including centroids and moments of inertia. This course will cover standard ABET professional outcomes a and e. (Prerequisite: PHYS 221)

Mechanics of Materials

ENGR2220 3.00 credits

This course teaches the fundamentals of deformable body mechanics beginning with the underlying concepts of stress, strain and the relationships between stress and strain. Students learn to analyze deformable bodies subjected to axial, torsional, bending, shear, internal pressure, and combined loadings. Students learn to predict the effects of such loadings on internal stresses, deformations and stability

of structures. Methods of plane stress transformation are explored. This course will cover standard ABET professional outcomes a and e. (Prerequisite: ENGR 2110)

Introduction to Engineering

ENGR1110 2.00 credits

This course introduces students to the engineering profession and its various branches. Students will be introduced to some of the principles and physical laws that they will use throughout their college career. It also focuses on introducing the skills needed for college success by; assisting in the transition from high school to college, developing good study habits, networking with other students, organizations, and professionals, and developing team work, people, communication and time management skills. This course will cover standard ABET professional outcomes f through k. (Prerequisite: Must have a score of 49.5 or above on the College Level Math portion of the Accuplacer test or completion of MATH0085 with a grade of C or higher)

Circuits I

ENGR2231 4.00 credits

This course provides an exploration of the basics in electricity and electronics. Topics include an overview of direct current, circuit laws, components, and use of test equipment. Students learn the basic technique of troubleshooting electric circuits, including measurement techniques, analysis of faults, and repair procedures. This course will cover standard ABET professional outcomes a and b. (Prerequisites: MATH 131, ENGR 1110)

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ENGR2211 3.00 credits

This course focuses on the kinematics and kinetics of particles and rigid bodies. Students learn to analyze the motion of bodies using Newton's Second law, the method of work and energy and the method of impulse and momentum. This course will cover standard ABET professional outcomes a and e. (Prerequisite: ENGR 2110)

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Computer Programming

ENGR2311 3.00 credits

This course created for eCatalog only.

Statics

ENGR2110 3.00 credits

This is the first course in the engineering mechanics sequence. Course topics include vector math, equivalent systems of forces, equilibrium of particles and rigid bodies, trusses and frames, forces in beams, friction, and properties of areas including centroids and moments of inertia. This course will cover standard ABET professional outcomes a and e. (Prerequisite: PHYS 221)

Mechanics of Materials

ENGR2220 3.00 credits

This course teaches the fundamentals of deformable body mechanics beginning with the underlying concepts of stress, strain and the relationships between stress and strain. Students learn to analyze deformable bodies subjected to axial, torsional, bending, shear, internal pressure, and combined loadings. Students learn to predict the effects of such loadings on internal stresses, deformations and stability of structures. Methods of plane stress transformation are explored. This course will cover standard ABET professional outcomes a and e. (Prerequisite: ENGR 2110)

Thermodynamics

ENGR2510 3.00 credits

This course created for eCatalog only.

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Computer Programming

ENGR2311 3.00 credits

This course created for eCatalog only.

Statics

ENGR2110 3.00 credits

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Introduction to Engineering

Circuits I

ENGR2231 4.00 credits

This course provides an exploration of the basics in electricity and electronics. Topics include an overview of direct current, circuit laws, components, and use of test equipment. Students learn the basic technique of troubleshooting electric circuits, including measurement techniques, analysis of faults, and repair procedures. This course will cover standard ABET professional outcomes a and b. (Prerequisites: MATH 131, ENGR 1110)

Dynamics

ENGR2211 3.00 credits

This course focuses on the kinematics and kinetics of particles and rigid bodies. Students learn to analyze the motion of bodies using Newton's Second law, the method of work and energy and the method of impulse and momentum. This course will cover standard ABET professional outcomes a and e. (Prerequisite: ENGR 2110)

Circuits I

ENGR2231 4.00 credits

This course provides an exploration of the basics in electricity and electronics. Topics include an overview of direct current, circuit laws, components, and use of test equipment. Students learn the basic technique of troubleshooting electric circuits, including measurement techniques, analysis of faults, and repair procedures. This course will cover standard ABET professional outcomes a and b. (Prerequisites: MATH 131, ENGR 1110)

Dynamics

ENGR2211 3.00 credits

This course focuses on the kinematics and kinetics of particles and rigid bodies. Students learn to analyze the motion of bodies using Newton's Second law, the method of work and energy and the method of impulse and momentum. This course will cover standard ABET professional outcomes a and e. (Prerequisite: ENGR 2110)

Engineering Drafting

ENGR1110 2.00 credits

This course introduces students to the engineering profession and its various branches. Students will be introduced to some of the principles and physical laws that they will use throughout their college career. It also focuses on introducing the skills needed for college success by; assisting in the transition from high school to college, developing good study habits, networking with other students, organizations, and professionals, and developing team work, people, communication and time management skills. This course will cover standard ABET professional outcomes f through k. (Prerequisite: Must have a score of 49.5 or above on the College Level Math portion of the Accuplacer test or completion of MATH0085 with a grade of C or higher)

Engineering Drafting**ENGR1211 2.00 credits**

This course covers the basic operations of both AutoCAD and Solidworks drafting software. Students will use both programs to make drawings of parts and plans related to the engineering field. This course will cover standard ABET professional outcomes g and k. (Prerequisite: ENGR 1110)

Thermodynamics**ENGR2510 3.00 credits**

This course created for eCatalog only.

Introduction to Geometric Dimensioning & Tolerancing**MECA1140 1.00 credits**

Students receive step-by-step instruction in Geometric Dimensioning & Tolerancing (GD&T) fundamentals with detailed explanations of each topic, GD&T symbols and definitions. Practice exercises are used throughout the instruction to provide additional discussion and learning opportunities. Students also learn to apply GD&T to industry-standard drawings. (Prerequisite: None)

Principles of Chemistry II**CHEM121 5.00 credits**

Principles of Chemistry II is the second in a series of Chemistry courses designed for students who plan to major in a scientific or health related field. Topics include kinetics, chemical equilibria, acids and bases, buffers, precipitation

ENGR1211 2.00 credits

This course covers the basic operations of both AutoCAD and Solidworks drafting software. Students will use both programs to make drawings of parts and plans related to the engineering field. This course will cover standard ABET professional outcomes g and k. (Prerequisite: ENGR 1110)

Surveying**ENGR1810 2.00 credits**

This course covers the principles of plane surveying involving methods of measuring distances, angles, bearings, and elevations. It has a laboratory component that covers the use of the common measurement equipment, leveling instruments, total station and Global Positioning Systems. This course will cover standard ABET professional outcomes a and d. (Prerequisite: MATH 125)

Computer Programming**ENGR2311 3.00 credits**

This course created for eCatalog only.

Elementary Statistics**MATH154 4.00 credits**

This course introduces the essential mathematical elements of statistics, applying them to a broad range of areas including business, manufacturing, economics, and the physical, biological and social sciences. Topics include descriptive measures of data, measures of central tendency, variability, standard probability distributions, tests of hypotheses, confidence intervals, and estimation. To put the treatment on a strong foundation, concepts of probability are developed throughout, and shown to form the unifying theme behind modern statistics. (Prerequisites: Two years of high school algebra, completion of MATH 0085 with a grade of C or higher or a score of 75.5 or higher on the Elementary Algebra portion of the Accuplacer test) (MNTC 4: Mathematical/Logical Reasoning)

Engineering Design and Principles 3**ENGR2113 1.00 credits**

This course is a continuation of Engineering Design and Principles 2. It expands the knowledge, tools, and softwares of personal digital fabrication using the fabrication laboratory. It will explore the needs and methods of electronic fabrication

reactions, thermodynamics, and electrochemistry. Lab topics reinforce lecture concepts. (Prerequisite: CHEM 120) (MNTC 3: Natural Sciences)

and other materials. This course will cover standard ABET professional outcome c. (Prerequisite: ENGR 1212)

Engineering Design and Principles 4

ENGR2214 1.00 credits

This course is a continuation of Engineering Design and Principles 3 and is the final capstone project using the fabrication laboratory. This course will cover standard ABET professional outcome c. (Prerequisite: ENGR 2113)

Farm Business Management Department Overview

The Farm Business Management program is designed for students actively engaged in the operation and management of a farm business. The purpose of the program is to develop the manager's ability to organize resources in order to meet business and family goals. Management is the utilization of resources to maximize the return to the scarcest resource which is a continuous decision-making process. The program emphasizes goal setting, the identification of resources, records management, business analysis and interpretation.

Office Locations and Phone Numbers	
Blue Earth	(507) 526-2894 (507) 526-5380
Fairfax	(507) 426-8355
Faribault	(507) 332-5836 (507) 332-5837 (507) 332-5845 1-800-422-0391
Glencoe	(320) 864-3378
Mankato	(507) 389-7288 (507) 389-7391 1-800-722-9359
Montgomery	(952)-492-2141
New Ulm	(507) 354-7836
Nicollet	(507) 232-3916 or (507) 327-6160
Sleepy Eye	(507) 794-4241
Waldorf	(507) 521-1232

Core Competencies

1. Establish, compile, maintain, and understand business records.
2. Analyze and use historical business data.
3. Establish and regularly evaluate business goals and plans
4. Demonstrate necessary skills to manage business resources

Department Faculty

Brad Augustin, Ira Beckman, Aaron Brudellie, Tina LeBrun, Myron Oftedahl, Al Roesler, Wayne Schoper, Robin Schwieger, Pam Uhlenkamp, Mark Wehe, Doug Wertish

Farm Business Management Degrees

Farm Business Management Diploma
 Applications in Farm Business Management Certificate
 Essentials of Farm Business Management Certificate
 Farm Business Management Advanced Certificate Certificate

Farm Business Management

Diploma • 60 Credits

DIP 2101/DIP 3118



Degree Description

The Farm Business Management program is designed for students actively engaged in the operation and management of a farm business. The purpose of the program is to develop the manager's ability to organize resources in order to meet business and family goals. Management is the utilization of resources to maximize the return to the scarcest resource which is a continuous decision-making process. The program emphasizes goal setting, the identification of resources, records management, business analysis and interpretation.

This program is eligible for state grant funding only.

Admission Dates: Fall, Spring, and Summer Semester

Offered on the Faribault and North Mankato Campuses

The course requirements listed below are specific to the 2013-2014 school year. If you need to view the program from previous years view our [Catalog Archive](#).

This credential is part of the Farm Business Management department. [See the Farm Business Management department page for more details](#)

Required Technical Courses (12 Courses)

Complete the following courses:

- [FBMT1112](#) Foundations for Farm Business Management (4 Credits)
- [FBMT1121](#) Preparation for Farm Business Analysis (4 Credits)
- [FBMT1122](#) Implementing the System Management Plan (4 Credits)
- [FBMT1131](#) Managing and Modifying Farm System Data (4 Credits)
- [FBMT1132](#) Interpreting and Using Farm System Data (4 Credits)
- [FBMT1211](#) Intro to Farm Business Management (4 Credits)
- [FBMT2141](#) Interpreting and Evaluation of Financial Data (4 Credits)
- [FBMT2142](#) Interpreting Trends in Business Planning (4 Credits)
- [FBMT2151](#) Strategies in Farm System Data Management (4 Credits)
- [FBMT2152](#) Integrating System Information for Financial Planning (4 Credits)
- [FBMT2161](#) Exam of Context of Farm System Mgmt (4 Credits)
- [FBMT2162](#) Refining Farm System Management (4 Credits)

Required Liberal Arts and Sciences (6 Credits)

To complete the Diploma, students must complete 6 MnTC credits from 2 of the 10 MnTC goal areas. Courses must be selected in consultation with advisor/faculty.

Technical Electives (6 Credits)

Complete 6 credits from the following courses:

- [FBMT1213](#) Managing a Farm System in a Global Economy (2 Credits)
- [FBMT1223](#) Using System Analysis in Total Farm Planning (2 Credits)
- [FBMT1233](#) Application of Productive Enterprise Information (2 Credits)
- [FBMT2200](#) Special Topics-General Farm Management (1 Credit)
- [FBMT2239](#) Special Topics-Livestock (2 Credits)
- [FBMT2243](#) Using Financial Instruments in Farm Systems Management (2 Credits)
- [FBMT2253](#) System Plans and Projections (2 Credits)
- [FBMT2263](#) Evaluating Farm System Programs (2 Credits)
- [FBMT2300](#) Computer Applications in Business Management (2 Credits)
- [FBMT2305](#) Legal Issues in Ag (2 Credits)
- [FBMT2310](#) Environmental Interactions in Agriculture (2 Credits)
- [FBMT2315](#) Effective Time Management (2 Credits)
- [FBMT2320](#) Family Wellness and Business Relationships (2 Credits)
- [FBMT2325](#) Ethics in this Business of Agriculture (2 Credits)
- [FBMT2330](#) Business Math Principles (2 Credits)
- [FBMT2335](#) Labor Economics and Management (2 Credits)
- [FBMT2340](#) Rural Leadership (2 Credits)
- [FBMT2345](#) CPR and First Aid (2 Credits)

PLEASE NOTE: All program plans are preliminary and curriculum may change without notice. Your [catalog of record](#) may have different requirements.

Farm Business Management - Diploma of Occupational Proficiency Course Descriptions**Foundations for Farm Business Management****FBMT1112 4.00 credits**

This course is an overview of the Farm Business Management program. The student will be introduced to goal setting, self and business assessment, record keeping, and business projections to provide the foundation for personal and business management progress. Current issues affecting business management are an integral part of the course. (Prerequisites: None)

Preparation for Farm Business Analysis**FBMT1121 4.00 credits**

This course will take the student through a step-by-step procedure to close out a complete year of farm business records. The course will emphasize tax planning, completing inputs to livestock and crop enterprises, and emphasizing cash and liabilities accuracy. A completed business and enterprise analysis will be the course focus. (Prerequisites: None)

Implementing the System Management Plan**FBMT1122 4.00 credits**

This course continues to build on the foundation of farm business management. The student will complete a farm business financial and enterprise analysis. Sound financial record keeping is an integral component. (Prerequisites: None)

Managing and Modifying Farm System Data**FBMT1131 4.00 credits**

This course will help the student refine their farm business data system and assist them in applying year end procedures for farm business analysis. Students improve accuracy in the following: farm enterprise analysis, tax planning and filing, and cash and liabilities checks. (Prerequisites: None)

Interpreting and Using Farm System Data**FBMT1132 4.00 credits**

This course provides an opportunity for the student to view the farm business and its various components through a number of vehicles such as balance sheets, farm personal and managerial inventories, enterprise reports and historical data. (Prerequisites: None)

Intro to Farm Business Management**FBMT1211 4.00 credits**

This course introduces basic farm business management concepts. Students will study the farm management planning cycle and develop an understanding of its relationship to: family and farm business goal setting, cash and enterprise accounting principles, and tax planning. (Prerequisites: None)

Interpreting and Evaluation of Financial Data**FBMT2141 4.00 credits**

This course continues to expand on preparation and evaluation of the farm business analysis. The course provides continued guidance and perfection of business record closeout procedures, tax implications of management decisions, and continues to monitor farm business and family goals. (Prerequisites: None)

Interpreting Trends in Business Planning**FBMT2142 4.00 credits**

This course examines whole farm, enterprise, balance sheet, and inventory trends. Current analysis data is compared to historical data in making future farm business planning decisions. Financial ratios are used to indicate the farm financial structure. (Prerequisites: None)

Strategies in Farm System Data Management**FBMT2151 4.00 credits****Integrating System Information for Financial Planning****FBMT2152 4.00 credits**

This course will help the student focus on long term strategies necessary to maintain and enhance the farm business and personal future financial goals. The student will complete the year by preparing for an accurate, usable business analysis. (Prerequisites: None)

Exam of Context of Farm System Mgmt

FBMT2161 4.00 credits

This course uses farm system information to develop a farm financial plan. Interpretation and analysis of the farm system data will enhance the reliability of the farm plan. The comprehensive farm plan will integrate historical trends, farm and personal goals, financial and enterprise performance of the farm business. (Prerequisites: None)

Refining Farm System Management

FBMT2162 4.00 credits

This course is the culmination of activities designed to enable the student to develop and implement a comprehensive farm business strategic plan. The student will use the components of the Farm Business Management program to develop and support a farm business strategic plan. (Prerequisites: None)

Managing a Farm System in a Global Economy

FBMT1213 2.00 credits

This course assists the students in achieving awareness of the development of agricultural policies and practices throughout the world and assessing the impact of these policies and practices on the profitability and viability of their farm business. (Prerequisites: None)

Using System Analysis in Total Farm Planning

FBMT1223 2.00 credits

This course assists the student with a farm business analysis, and the exploration of possible implications and/or solutions of these concepts. A systematic method to assess farm business strengths and weaknesses based on the analysis will be used. (Prerequisites: None)

Application of Productive Enterprise Information

FBMT1233 2.00 credits

This course describes procedures for applying enterprise information provided by computerized analysis of farm business accounts. (Prerequisites: None)

Special Topics-General Farm Management

FBMT2200 1.00 credits

This course covers special topics of interest in general farm management. (Prerequisites: None)

Special Topics-Livestock

FBMT2239 2.00 credits

This course covers special topics of interest in livestock. (Prerequisites: None)

Using Financial Instruments in Farm Systems Management

FBMT2243 2.00 credits

This course integrates the application of various financial instruments used in acquiring capital for use in the business and investigates the way in which both earnings and financial progress can be measured. (Prerequisites: None)

System Plans and Projections

FBMT2253 2.00 credits

This course enables the combination of concepts for preparing farm system plans and projections, and the interaction of possible implications and/or solutions of these concepts. (Prerequisites: None)

Evaluating Farm System Programs

FBMT2263 2.00 credits

This course develops an awareness of individuals and agencies, both public and private, which have expertise available to assist the farm operator to solve farm systems problems. It enables study and application of farm business evaluation concepts, and exploration of possible implications. Exact subject matter and time spent per topic will vary depending on student need, location and time. (Prerequisites: None)

Computer Applications in Business Management

FBMT2300 2.00 credits

This course will discuss basic computer literacy, identify commonly used software and demonstrate the uses of commonly used software.

Environmental Interactions in Agriculture

FBMT2310 2.00 credits

This course will provide information for the student to interpret agricultural issues related to the environment.

Family Wellness and Business Relationships

FBMT2320 2.00 credits

This course explores the interaction of family members resulting from challenges during the operation of a family owned business. This will deal with communication and other issues related to multiple family businesses, as well as multi-generational businesses.

Business Math Principles

FBMT2330 2.00 credits

This course applies basic mathematic calculations as they relate to business management. Topics included are: addition, subtraction, multiplication, division, percentages, decimals, fractions, volumes, area ratios and basic formulas.

Rural Leadership

FBMT2340 2.00 credits

This course will improve the students' oral, written and electronic communication skills. Basic principles relating to meetings, conduct, letter writing, public speaking, facsimile, e-mail and internet application use will be addressed.

Legal Issues in Ag

FBMT2305 2.00 credits

This course is an overview of legal issues affecting ownership, operation and transfer for business operators and managers. (Prerequisites: None)

Effective Time Management

FBMT2315 2.00 credits

This course provides instruction on developing time management skills, converting skills into habits, responding to multiple demands and addressing change.

Ethics in this Business of Agriculture

FBMT2325 2.00 credits

This course identifies and evaluates current issues relating to the ethics of business practices. Students review animal rights, proper chemical quantities, and practices. Students review animal rights, proper chemical quantities, and general ethical practices.

Labor Economics and Management

FBMT2335 2.00 credits

This course studies the economic principles of labor as a business resource, describes supervisory and leadership styles and the efficiency of labor management skills.

CPR and First Aid

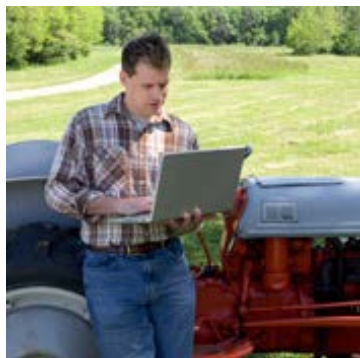
FBMT2345 2.00 credits

This course covers primary and secondary assessments, first responder roles and responsibilities, determining vital signs, treating emergencies, mouth-to-mouth breathing, CPR, controlling bleeding, treatment of shock and treating injuries in emergency and disaster situations.

Applications in Farm Business Management

Certificate • 30 Credits

CERT2149/CERT3149



Degree Description

Here is a list of courses required to earn the Applications in Farm Business Management Certificate of Training

Admission Dates: Fall, Spring, and Summer Semester

Offered on the Faribault and North Mankato Campuses

The course requirements listed below are specific to the 2013-2014 school year. If you need to view the program from previous years view our [Catalog Archive](#).

This credential is part of the Farm Business Management department. [See the Farm Business Management department page for more details](#)

Required Technical Courses (6 Courses)

Select the following courses:

[FBMT2141](#) Interpreting and Evaluation of Financial Data (4 Credits)

[FBMT2142](#) Interpreting Trends in Business Planning (4 Credits)

[FBMT2151](#) Strategies in Farm System Data Management (4 Credits)

[FBMT2152](#) Integrating System Information for Financial Planning (4 Credits)

[FBMT2161](#) Exam of Context of Farm System Mgmt (4 Credits)

[FBMT2162](#) Refining Farm System Management (4 Credits)

Required Electives (6 Credits)

Select 6 credits from the following courses:

[FBMT1213](#) Managing a Farm System in a Global Economy (2 Credits)

[FBMT1223](#) Using System Analysis in Total Farm Planning (2 Credits)

[FBMT1233](#) Application of Productive Enterprise Information (2 Credits)

[FBMT2200](#) Special Topics-General Farm Management (1 Credit)

[FBMT2239](#) Special Topics-Livestock (2 Credits)

[FBMT2243](#) Using Financial Instruments in Farm Systems Management (2 Credits)

[FBMT2253](#) System Plans and Projections (2 Credits)

[FBMT2263](#) Evaluating Farm System Programs (2 Credits)

[FBMT2300](#) Computer Applications in Business Management (2 Credits)

[FBMT2305](#) Legal Issues in Ag (2 Credits)

[FBMT2310](#) Environmental Interactions in Agriculture (2 Credits)

[FBMT2315](#) Effective Time Management (2 Credits)

[FBMT2320](#) Family Wellness and Business Relationships (2 Credits)

[FBMT2325](#) Ethics in this Business of Agriculture (2 Credits)

[FBMT2330](#) Business Math Principles (2 Credits)

[FBMT2335](#) Labor Economics and Management (2 Credits)

[FBMT2340](#) Rural Leadership (2 Credits)

[FBMT2345](#) CPR and First Aid (2 Credits)

PLEASE NOTE: All program plans are preliminary and curriculum may change without notice. Your [catalog of record](#) may have different requirements.

Applications in Farm Business Management - Certificate of Training Course Descriptions**Interpreting and Evaluation of Financial Data****FBMT2141 4.00 credits**

This course continues to expand on preparation and evaluation of the farm business analysis. The course provides continued guidance and perfection of business record closeout procedures, tax implications of management decisions, and continues to monitor farm business and family goals. (Prerequisites: None)

Interpreting Trends in Business Planning**FBMT2142 4.00 credits**

This course examines whole farm, enterprise, balance sheet, and inventory trends. Current analysis data is compared to historical data in making future farm business planning decisions. Financial ratios are used to indicate the farm financial structure. (Prerequisites: None)

Strategies in Farm System Data Management**FBMT2151 4.00 credits**

This course will help the student focus on long term strategies necessary to maintain and enhance the farm business and personal future financial goals. The student will complete the year by preparing for an accurate, usable business analysis. (Prerequisites: None)

Integrating System Information for Financial Planning**FBMT2152 4.00 credits**

This course uses farm system information to develop a farm financial plan. Interpretation and analysis of the farm system data will enhance the reliability of the farm plan. The comprehensive farm plan will integrate historical trends, farm and personal goals, financial and enterprise performance of the farm business. (Prerequisites: None)

Exam of Context of Farm System Mgmt**FBMT2161 4.00 credits****Refining Farm System Management****FBMT2162 4.00 credits**

This course is the culmination of activities designed to enable the student to develop and implement a comprehensive farm business strategic plan. The student will use the components of the Farm Business Management program to develop and support a farm business strategic plan. (Prerequisites: None)

Managing a Farm System in a Global Economy**FBMT1213 2.00 credits**

This course assists the students in achieving awareness of the development of agricultural policies and practices throughout the world and assessing the impact of these policies and practices on the profitability and viability of their farm business. (Prerequisites: None)

Using System Analysis in Total Farm Planning**FBMT1223 2.00 credits**

This course assists the student with a farm business analysis, and the exploration of possible implications and/or solutions of these concepts. A systematic method to assess farm business strengths and weaknesses based on the analysis will be used. (Prerequisites: None)

Application of Productive Enterprise Information**FBMT1233 2.00 credits**

This course describes procedures for applying enterprise

Special Topics-General Farm Management**FBMT2200 1.00 credits**

This course covers special topics of interest in general farm

information provided by computerized analysis of farm business accounts. (Prerequisites: None)

Special Topics-Livestock

FBMT2239 2.00 credits

This course covers special topics of interest in livestock. (Prerequisites: None)

System Plans and Projections

FBMT2253 2.00 credits

This course enables the combination of concepts for preparing farm system plans and projections, and the interaction of possible implications and/or solutions of these concepts. (Prerequisites: None)

Computer Applications in Business Management

FBMT2300 2.00 credits

This course will discuss basic computer literacy, identify commonly used software and demonstrate the uses of commonly used software.

Environmental Interactions in Agriculture

FBMT2310 2.00 credits

This course will provide information for the student to interpret agricultural issues related to the environment.

Family Wellness and Business Relationships

FBMT2320 2.00 credits

This course explores the interaction of family members resulting from challenges during the operation of a family owned business. This will deal with communication and other issues related to multiple family businesses, as well as multi-generational businesses.

Business Math Principles

FBMT2330 2.00 credits

This course applies basic mathematic calculations as they relate to business management. Topics included are: addition,

management. (Prerequisites: None)

Using Financial Instruments in Farm Systems Management

FBMT2243 2.00 credits

This course integrates the application of various financial instruments used in acquiring capital for use in the business and investigates the way in which both earnings and financial progress can be measured. (Prerequisites: None)

Evaluating Farm System Programs

FBMT2263 2.00 credits

This course develops an awareness of individuals and agencies, both public and private, which have expertise available to assist the farm operator to solve farm systems problems. It enables study and application of farm business evaluation concepts, and exploration of possible implications. Exact subject matter and time spent per topic will vary depending on student need, location and time. (Prerequisites: None)

Legal Issues in Ag

FBMT2305 2.00 credits

This course is an overview of legal issues affecting ownership, operation and transfer for business operators and managers. (Prerequisites: None)

Effective Time Management

FBMT2315 2.00 credits

This course provides instruction on developing time management skills, converting skills into habits, responding to multiple demands and addressing change.

Ethics in this Business of Agriculture

FBMT2325 2.00 credits

This course identifies and evaluates current issues relating to the ethics of business practices. Students review animal rights, proper chemical quantities, and practices. Students review animal rights, proper chemical quantities, and general ethical practices.

Labor Economics and Management

FBMT2335 2.00 credits

This course studies the economic principles of labor as a business resource, describes supervisory and leadership

subtraction, multiplication, division, percentages, decimals, fractions, volumes, area ratios and basic formulas.

styles and the efficiency of labor management skills.

Rural Leadership

FBMT2340 2.00 credits

This course will improve the students' oral, written and electronic communication skills. Basic principles relating to meetings, conduct, letter writing, public speaking, facsimile, e-mail and internet application use will be addressed.

CPR and First Aid

FBMT2345 2.00 credits

This course covers primary and secondary assessments, first responder roles and responsibilities, determining vital signs, treating emergencies, mouth-to-mouth breathing, CPR, controlling bleeding, treatment of shock and treating injuries in emergency and disaster situations.

Essentials of Farm Business Management

Certificate • 30 Credits

CERT2148/CERT3148



Degree Description

Here is a list of courses required to earn the Essentials of Farm Business Management Certificate of Training

Admission Dates: Fall, Spring, and Summer Semester

Offered on the Faribault and North Mankato Campuses

The course requirements listed below are specific to the 2013-2014 school year. If you need to view the program from previous years view our [Catalog Archive](#).

This credential is part of the Farm Business Management department. [See the Farm Business Management department page for more details](#)

Required Technical Courses (6 Courses)

Select the following courses:

- [FBMT1112](#) Foundations for Farm Business Management (4 Credits)
- [FBMT1121](#) Preparation for Farm Business Analysis (4 Credits)
- [FBMT1122](#) Implementing the System Management Plan (4 Credits)
- [FBMT1131](#) Managing and Modifying Farm System Data (4 Credits)
- [FBMT1132](#) Interpreting and Using Farm System Data (4 Credits)
- [FBMT1211](#) Intro to Farm Business Management (4 Credits)

Required Electives (6 Credits)

Select 6 credits from the following courses:

- [FBMT1213](#) Managing a Farm System in a Global Economy (2 Credits)
- [FBMT1223](#) Using System Analysis in Total Farm Planning (2 Credits)
- [FBMT1233](#) Application of Productive Enterprise Information (2 Credits)
- [FBMT2200](#) Special Topics-General Farm Management (1 Credit)
- [FBMT2239](#) Special Topics-Livestock (2 Credits)
- [FBMT2243](#) Using Financial Instruments in Farm Systems Management (2 Credits)
- [FBMT2253](#) System Plans and Projections (2 Credits)
- [FBMT2263](#) Evaluating Farm System Programs (2 Credits)
- [FBMT2300](#) Computer Applications in Business Management (2 Credits)
- [FBMT2305](#) Legal Issues in Ag (2 Credits)
- [FBMT2310](#) Environmental Interactions in Agriculture (2 Credits)
- [FBMT2315](#) Effective Time Management (2 Credits)
- [FBMT2320](#) Family Wellness and Business Relationships (2 Credits)
- [FBMT2325](#) Ethics in this Business of Agriculture (2 Credits)
- [FBMT2330](#) Business Math Principles (2 Credits)
- [FBMT2335](#) Labor Economics and Management (2 Credits)
- [FBMT2340](#) Rural Leadership (2 Credits)
- [FBMT2345](#) CPR and First Aid (2 Credits)

PLEASE NOTE: All program plans are preliminary and curriculum may change without notice. Your [catalog of record](#) may have different requirements.

Essentials of Farm Business Management - Certificate of Training Course Descriptions**Foundations for Farm Business Management****FBMT1112 4.00 credits**

This course is an overview of the Farm Business Management program. The student will be introduced to goal setting, self and business assessment, record keeping, and business projections to provide the foundation for personal and business management progress. Current issues affecting business management are an integral part of the course. (Prerequisites: None)

Preparation for Farm Business Analysis**FBMT1121 4.00 credits**

This course will take the student through a step-by-step procedure to close out a complete year of farm business records. The course will emphasize tax planning, completing inputs to livestock and crop enterprises, and emphasizing cash and liabilities accuracy. A completed business and enterprise analysis will be the course focus. (Prerequisites: None)

Implementing the System Management Plan**FBMT1122 4.00 credits**

This course continues to build on the foundation of farm business management. The student will complete a farm business financial and enterprise analysis. Sound financial record keeping is an integral component. (Prerequisites: None)

Managing and Modifying Farm System Data**FBMT1131 4.00 credits**

This course will help the student refine their farm business data system and assist them in applying year end procedures for farm business analysis. Students improve accuracy in the following: farm enterprise analysis, tax planning and filing, and cash and liabilities checks. (Prerequisites: None)

Interpreting and Using Farm System Data**FBMT1132 4.00 credits**

This course provides an opportunity for the student to view the farm business and its various components through a number of vehicles such as balance sheets, farm personal and managerial inventories, enterprise reports and historical data. (Prerequisites: None)

Intro to Farm Business Management**FBMT1211 4.00 credits**

This course introduces basic farm business management concepts. Students will study the farm management planning cycle and develop an understanding of its relationship to: family and farm business goal setting, cash and enterprise accounting principles, and tax planning. (Prerequisites: None)

Managing a Farm System in a Global Economy**FBMT1213 2.00 credits**

This course assists the students in achieving awareness of the development of agricultural policies and practices throughout the world and assessing the impact of these policies and practices on the profitability and viability of their farm business. (Prerequisites: None)

Using System Analysis in Total Farm Planning**FBMT1223 2.00 credits**

This course assists the student with a farm business analysis, and the exploration of possible implications and/or solutions of these concepts. A systematic method to assess farm business strengths and weaknesses based on the analysis will be used. (Prerequisites: None)

Application of Productive Enterprise Information**FBMT1233 2.00 credits**

This course describes procedures for applying enterprise

Special Topics-General Farm Management**FBMT2200 1.00 credits**

This course covers special topics of interest in general farm

information provided by computerized analysis of farm business accounts. (Prerequisites: None)

Special Topics-Livestock

FBMT2239 2.00 credits

This course covers special topics of interest in livestock. (Prerequisites: None)

System Plans and Projections

FBMT2253 2.00 credits

This course enables the combination of concepts for preparing farm system plans and projections, and the interaction of possible implications and/or solutions of these concepts. (Prerequisites: None)

Computer Applications in Business Management

FBMT2300 2.00 credits

This course will discuss basic computer literacy, identify commonly used software and demonstrate the uses of commonly used software.

Environmental Interactions in Agriculture

FBMT2310 2.00 credits

This course will provide information for the student to interpret agricultural issues related to the environment.

Family Wellness and Business Relationships

FBMT2320 2.00 credits

This course explores the interaction of family members resulting from challenges during the operation of a family owned business. This will deal with communication and other issues related to multiple family businesses, as well as multi-generational businesses.

Business Math Principles

FBMT2330 2.00 credits

This course applies basic mathematic calculations as they relate to business management. Topics included are: addition,

management. (Prerequisites: None)

Using Financial Instruments in Farm Systems Management

FBMT2243 2.00 credits

This course integrates the application of various financial instruments used in acquiring capital for use in the business and investigates the way in which both earnings and financial progress can be measured. (Prerequisites: None)

Evaluating Farm System Programs

FBMT2263 2.00 credits

This course develops an awareness of individuals and agencies, both public and private, which have expertise available to assist the farm operator to solve farm systems problems. It enables study and application of farm business evaluation concepts, and exploration of possible implications. Exact subject matter and time spent per topic will vary depending on student need, location and time. (Prerequisites: None)

Legal Issues in Ag

FBMT2305 2.00 credits

This course is an overview of legal issues affecting ownership, operation and transfer for business operators and managers. (Prerequisites: None)

Effective Time Management

FBMT2315 2.00 credits

This course provides instruction on developing time management skills, converting skills into habits, responding to multiple demands and addressing change.

Ethics in this Business of Agriculture

FBMT2325 2.00 credits

This course identifies and evaluates current issues relating to the ethics of business practices. Students review animal rights, proper chemical quantities, and practices. Students review animal rights, proper chemical quantities, and general ethical practices.

Labor Economics and Management

FBMT2335 2.00 credits

This course studies the economic principles of labor as a business resource, describes supervisory and leadership

subtraction, multiplication, division, percentages, decimals, fractions, volumes, area ratios and basic formulas.

styles and the efficiency of labor management skills.

Rural Leadership

FBMT2340 2.00 credits

This course will improve the students' oral, written and electronic communication skills. Basic principles relating to meetings, conduct, letter writing, public speaking, facsimile, e-mail and internet application use will be addressed.

CPR and First Aid

FBMT2345 2.00 credits

This course covers primary and secondary assessments, first responder roles and responsibilities, determining vital signs, treating emergencies, mouth-to-mouth breathing, CPR, controlling bleeding, treatment of shock and treating injuries in emergency and disaster situations.

Farm Business Management Advanced Certificate

Certificate • 30 Credits

CERT2110/CERT3122



Degree Description

The Advanced Farm Business Management program is an Advanced Technical Specialty Certificate program designed for students who have completed the full Farm Business Management program and wish to continue to update their management skills in the rapidly changing and challenging area of farm business management. Similar to Farm Business Management, most students in the Advanced Farm Business Management program will enroll as part-time students and will carry 5 credits per semester.

Admission Dates: Fall, Spring, and Summer Semester

Offered on the Faribault and North Mankato Campuses

The course requirements listed below are specific to the 2013-2014 school year. If you need to view the program from previous years view our [Catalog Archive](#).

This credential is part of the Farm Business Management department. [See the Farm Business Management department page for more details](#)

Required Technical Courses (12 Courses)

Select the following courses:

- [FBMA2100](#) Fundamentals of Financial Management as it Relates to Risk Management (3 Credits)
- [FBMA2101](#) Applied Financial Management as it Relates to Risk Management (3 Credits)
- [FBMA2110](#) Fundamentals of Financial Mgmt/Strategic Planning Emphasis (3 Credits)
- [FBMA2111](#) Applied Financial Management/Strategic Planning Emphasis (3 Credits)
- [FBMA2120](#) Fundamentals of Financial Mgmt/Business Plan Emphasis (3 Credits)
- [FBMA2121](#) Applications in Financial Management/Business Plans (3 Credits)
- [FBMA2130](#) Directed Study - Decision Making (2 Credits)
- [FBMA2131](#) Directed Study - Communications (2 Credits)
- [FBMA2132](#) Directed Studies in Modern Agricultural Technology (2 Credits)
- [FBMA2133](#) Directed Studies in Farm Business and/or Family Transition (2 Credits)
- [FBMA2134](#) Directed Study - Personnel Management (2 Credits)
- [FBMA2135](#) Directed Study - Enterprise Alternatives (2 Credits)

Elective Credits (Suggested)

These courses are not required but are suggested as courses which may be beneficial to you in this career field. You will graduate from this program even if you do not complete these courses.

- [FBMT1213](#) Managing a Farm System in a Global Economy (2 Credits)
- [FBMT1223](#) Using System Analysis in Total Farm Planning (2 Credits)
- [FBMT1233](#) Application of Productive Enterprise Information (2 Credits)
- [FBMT2200](#) Special Topics-General Farm Management (1 Credit)
- [FBMT2239](#) Special Topics-Livestock (2 Credits)
- [FBMT2243](#) Using Financial Instruments in Farm Systems Management (2 Credits)
- [FBMT2253](#) System Plans and Projections (2 Credits)
- [FBMT2263](#) Evaluating Farm System Programs (2 Credits)
- [FBMT2300](#) Computer Applications in Business Management (2 Credits)
- [FBMT2305](#) Legal Issues in Ag (2 Credits)
- [FBMT2310](#) Environmental Interactions in Agriculture (2 Credits)
- [FBMT2315](#) Effective Time Management (2 Credits)
- [FBMT2320](#) Family Wellness and Business Relationships (2 Credits)
- [FBMT2325](#) Ethics in this Business of Agriculture (2 Credits)
- [FBMT2330](#) Business Math Principles (2 Credits)
- [FBMT2335](#) Labor Economics and Management (2 Credits)
- [FBMT2340](#) Rural Leadership (2 Credits)
- [FBMT2345](#) CPR and First Aid (2 Credits)

PLEASE NOTE: All program plans are preliminary and curriculum may change without notice. Your [catalog of record](#) may have different requirements.

Farm Business Management Advanced Certificate - Certificate of Training Course Descriptions**Fundamentals of Financial Management as it Relates to Risk Management****FBMA2100 3.00 credits**

This course is intended to have the student enhance their decision-making skills relating to business risk management. This course will have the student further investigate tools available to their business that would be effective in reducing potential risk for their operation. Emphasis will be placed on having the student research risk management options that will meet their business, family, and personal needs. (Prerequisites: None)

Applied Financial Management as it Relates to Risk Management**FBMA2101 3.00 credits**

This course is intended to have the student apply concepts in financial management that can be used in the development of a business risk management program. The student is to implement risk management tools that will assist in meeting their business, family, and personal needs. (Prerequisites: None)

Fundamentals of Financial Mgmt/Strategic Planning Emphasis**FBMA2110 3.00 credits**

This course will enable students to identify the elements necessary to evaluate and create a strategic plan for the business. Determining uses for the plan today and tomorrow and developing a plan to locate those team members necessary for strategic plan creation. (Prerequisites: None)

Applied Financial Management/Strategic Planning Emphasis**FBMA2111 3.00 credits**

This course will provide practical application of strategic planning skills. Application skills will be practiced upon and applied to the student's business and business plan. (Prerequisites: None)

Fundamentals of Financial Mgmt/Business Plan Emphasis**FBMA2120 3.00 credits**

This course will provide practical application of the business plan. Application skills will be practiced and applied as the student's business plan is prepared and implemented. (Prerequisites: None)

Applications in Financial Management/Business Plans**FBMA2121 3.00 credits**

This course will provide the necessary instruction to put together and implement a business plan for the farm business.

Directed Study - Decision Making**FBMA2130 2.00 credits**

This course will examine the individual, family and farm business decision making process with emphasis on upgrading and improving decision making resources, tools and skills. Particularly, this course will lead the student to critically analyze information, applications and implications of decision making as it relates to their own situation. Students will evaluate their own decision making process. (Prerequisites: Diploma from 1-6 Farm Business Management Curriculum)

Directed Study - Communications**FBMA2131 2.00 credits**

This course will assist the student in further acquiring & developing a higher level of communication skills. Students will review and evaluate various communication methods and techniques in dealing with and relating to individuals in both the public & private sector. Students will use this information in formulating an effective communication method and style. Additional course content may include student initiated or group activities. (Prerequisites: Diploma from 1-6 Farm Business Management Curriculum)

Directed Studies in Modern Agricultural Technology

FBMA2132 2.00 credits

This course will deal with experiencing modern agricultural technological changes and determining if they fit into an individual's farming operation. (Prerequisites: None)

Directed Study - Personnel Management

FBMA2134 2.00 credits

This course will organize skills for effective management of farm employees and agribusiness personnel through development of handbooks, compensation/incentive packages, individual expectations/evaluations, and team meetings. (Prerequisites: None)

Managing a Farm System in a Global Economy

FBMT1213 2.00 credits

This course assists the students in achieving awareness of the development of agricultural policies and practices throughout the world and assessing the impact of these policies and practices on the profitability and viability of their farm business. (Prerequisites: None)

Application of Productive Enterprise Information

FBMT1233 2.00 credits

This course describes procedures for applying enterprise information provided by computerized analysis of farm business accounts. (Prerequisites: None)

Special Topics-Livestock

FBMT2239 2.00 credits

This course covers special topics of interest in livestock. (Prerequisites: None)

System Plans and Projections

FBMT2253 2.00 credits

This course enables the combination of concepts for preparing farm system plans and projections, and the interaction of possible implications and/or solutions of these concepts. (Prerequisites: None)

Directed Studies in Farm Business and/or Family Transition

FBMA2133 2.00 credits

This course provides the opportunity for the student to study the many aspects of farm business and/or family transition which occur in the typical farm business. (Prerequisites: None)

Directed Study - Enterprise Alternatives

FBMA2135 2.00 credits

This course will assist those students wanting to make changes in their farm business through enterprise expansion, addition or enhancement. The course will develop a set of procedures for exploring and evaluating alternative choices. (Prerequisites: None)

Using System Analysis in Total Farm Planning

FBMT1223 2.00 credits

This course assists the student with a farm business analysis, and the exploration of possible implications and/or solutions of these concepts. A systematic method to assess farm business strengths and weaknesses based on the analysis will be used. (Prerequisites: None)

Special Topics-General Farm Management

FBMT2200 1.00 credits

This course covers special topics of interest in general farm management. (Prerequisites: None)

Using Financial Instruments in Farm Systems Management

FBMT2243 2.00 credits

This course integrates the application of various financial instruments used in acquiring capital for use in the business and investigates the way in which both earnings and financial progress can be measured. (Prerequisites: None)

Evaluating Farm System Programs

FBMT2263 2.00 credits

This course develops an awareness of individuals and agencies, both public and private, which have expertise available to assist the farm operator to solve farm systems problems. It enables study and application of farm business evaluation concepts, and exploration of possible implications. Exact subject matter and time spent per topic will vary depending on student need, location and time. (Prerequisites: None)

Computer Applications in Business Management

FBMT2300 2.00 credits

This course will discuss basic computer literacy, identify commonly used software and demonstrate the uses of commonly used software.

Environmental Interactions in Agriculture

FBMT2310 2.00 credits

This course will provide information for the student to interpret agricultural issues related to the environment.

Family Wellness and Business Relationships

FBMT2320 2.00 credits

This course explores the interaction of family members resulting from challenges during the operation of a family owned business. This will deal with communication and other issues related to multiple family businesses, as well as multi-generational businesses.

Business Math Principles

FBMT2330 2.00 credits

This course applies basic mathematic calculations as they relate to business management. Topics included are: addition, subtraction, multiplication, division, percentages, decimals, fractions, volumes, area ratios and basic formulas.

Rural Leadership

FBMT2340 2.00 credits

This course will improve the students' oral, written and electronic communication skills. Basic principles relating to meetings, conduct, letter writing, public speaking, facsimile, e-mail and internet application use will be addressed.

Legal Issues in Ag

FBMT2305 2.00 credits

This course is an overview of legal issues affecting ownership, operation and transfer for business operators and managers. (Prerequisites: None)

Effective Time Management

FBMT2315 2.00 credits

This course provides instruction on developing time management skills, converting skills into habits, responding to multiple demands and addressing change.

Ethics in this Business of Agriculture

FBMT2325 2.00 credits

This course identifies and evaluates current issues relating to the ethics of business practices. Students review animal rights, proper chemical quantities, and practices. Students review animal rights, proper chemical quantities, and general ethical practices.

Labor Economics and Management

FBMT2335 2.00 credits

This course studies the economic principles of labor as a business resource, describes supervisory and leadership styles and the efficiency of labor management skills.

CPR and First Aid

FBMT2345 2.00 credits

This course covers primary and secondary assessments, first responder roles and responsibilities, determining vital signs, treating emergencies, mouth-to-mouth breathing, CPR, controlling bleeding, treatment of shock and treating injuries in emergency and disaster situations.

Automotive Service Department Overview

Program Mission: Provide the opportunity for students to acquire the skills necessary for entrylevel employment in the automotive service industry.

Credentials: All Automotive Service instructors are Automotive Service Excellence (ASE) Certified Master Automobile Technicians and regularly receive advanced training from vehicle manufacturers and aftermarket suppliers. The Automotive Service department was evaluated by the National Automotive Technicians Education Foundation (NATEF) and has been an ASE Certified Automotive Training Program since 1998.

After Graduation: An individual completing this program will find employment opportunities available in a variety of settings. Graduates find entry level positions in dealerships, independent repair facilities and fleet services. With additional training and experience, many technicians become shop foreman, service advisor, service manager or open their own business.

Preparation: Individuals interested in a career in automotive service should be mechanically inclined, have good reading and math skills, and enjoy working on cars and trucks. High school training in automotive service is an advantage, as is any training in electronics and computer operation. But the most important factor may be your desire to succeed in this highly skilled profession.

The goal of the program is to provide intensive training and experience in the diagnosis, repair and service of contemporary vehicles.

Core Competencies

1. Perform engine diagnosis and repair
2. Diagnose and repair transmissions and drive trains
3. Service suspension and steering components
4. Inspect and repair braking systems
5. Demonstrate electrical/electronic component repairs
6. Maintain and service heating and air conditioning systems
7. Troubleshoot and repair engine performance
8. Demonstrate Professionalism

Department Faculty

Jim Brady, Dick Stelten

Automotive Service Degrees

Automotive Services AAS Degree
Automotive Service Diploma

Automotive Services

A.A.S. Degree • 72 Credits

AAS 3417



Degree Description

The Automotive Service program is designed to provide the opportunity to acquire the skills necessary for entry-level employment in the automotive service industry. An individual completing this program will find employment opportunities available in a variety of settings. Graduates find entry level positions in dealerships, independent repair facilities and fleet services. With additional training and experience, many technicians can become a shop foreman, service advisor, service manager or open their own business.

Admission Dates: Fall and Spring Semester

Offered on the North Mankato Campus

The course requirements listed below are specific to the 2013-2014 school year. If you need to view the program from previous years view our [Catalog Archive](#).

This credential is part of the Automotive Service department. [See the Automotive Service department page for more details](#)

Required Technical Courses (23 Courses)

Complete all of the following courses:

- [AST 1112](#) Introduction to Auto Service (2 Credits)
- [AST 1121](#) Service Management (1 Credit)
- [AST 1212](#) Basic Electrical (2 Credits)
- [AST 1222](#) Advanced Electrical/Electronics (2 Credits)
- [AST 1233](#) Starting and Charging Systems (3 Credits)
- [AST 1311](#) Engine Diagnosis (1 Credit)
- [AST 1323](#) Lower Engine Service (3 Credits)
- [AST 1332](#) Upper Engine Service (2 Credits)
- [AST 1341](#) Engine Lab (1 Credit)
- [AST 1412](#) Clutch & Drive Line (2 Credits)
- [AST 1423](#) Manual Transmission/Transaxle & 4X4 (3 Credits)
- [AST 1513](#) Suspension/Steering & Wheel Alignment (3 Credits)
- [AST 1613](#) Brakes (3 Credits)
- [AST 1622](#) Advanced Brakes (2 Credits)
- [AST 1712](#) Basic Tune-up (Non-computer) (2 Credits)
- [AST 2432](#) Rear Axle/Differential (2 Credits)
- [AST 2442](#) Automatic Transmission I (2 Credits)
- [AST 2452](#) Automatic Transmission II (2 Credits)
- [AST 2462](#) Automatic Transmission III (2 Credits)
- [AST 2723](#) Fuel Systems I (3 Credits)
- [AST 2733](#) Introduction to Automotive Computers (3 Credits)
- [AST 2743](#) Fuel Systems II (3 Credits)
- [AST 2752](#) Engine Performance & Drivability (2 Credits)
- [AST 2812](#) Basic Air Conditioning (2 Credits)

Auto Lab (4 Credits)

NOTE: Qualified sophomores may substitute COE for two credits of Auto Lab. Choose all four of the following courses:

- [AST 2911](#) Auto Lab I (1 Credit)
- [AST 2921](#) Auto Lab II (1 Credit)
- [AST 2931](#) Auto Lab III (1 Credit)
- [AST 2941](#) Auto Lab IV (1 Credit)

PLEASE NOTE: All program plans are preliminary and curriculum may change without notice. Your [catalog of record](#) may have different requirements.

Elective Technical Courses (2 Credits)

Select at least two credits from the following:

- [AST 2951](#) Individualized Study (1 - 8 Credits)
- [AST 2961](#) Cooperative Occupational Experience (1 - 8 Credits)
- [AST 2822](#) Advanced Heating and Air Conditioning (2 Credits)

Liberal Arts and Sciences

To complete an AAS Degree, students must complete 15 MNTC credits from 3 of the 10 MNTC goal areas.

Automotive Services - Associate of Applied Science Degree Course Descriptions**Introduction to Auto Service****AST 1112 2.00 credits**

This course is a requisite for the Automotive Service program. The course will include the following topics: shop safety, shop practices and procedures, vehicle identification, use of electronic service information, proper use of hand tools, power tools, hoist and other shop equipment, basic fasteners, tires, lubricants and fluids. (Prerequisite: Admission into the Automotive Service program)

Basic Electrical**AST 1212 2.00 credits**

This course covers the fundamentals of electricity and electronics. Electrical circuits and components, magnetism, resistance, current flow, capacitance, instruments, diodes, and solid-state devices will be presented in a manner which relates the subject to the occupation. (Prerequisites: Admission into the Automotive Service program)

Starting and Charging Systems**AST 1233 3.00 credits**

This course covers the theory and operation of starting and charging systems. Instruction in parts identification, circuit operation, component testing, rebuilding procedures, and circuit diagnosis will be included. Prior knowledge gained by the successful completion of AST 1222 is required for student success in this course. (Prerequisite: Admission into the Automotive Service program)

Lower Engine Service**AST 1323 3.00 credits**

This course covers the theory of engine operation and construction, parts identification, measurements, and engine wear locations. Determining the service procedures an engine will require and the reconditioning of all lower engine components are included in this course. Prior knowledge gained by the successful completion of AST 1311 is required for student success in this course. (Prerequisite: Admission into the Automotive Service program)

Service Management**AST 1121 1.00 credits**

This course is designed for individuals who will be responsible for the operation of an automotive repair facility. It provides instruction in customer service, parts and service marketing, shop management, and business ethics in the automotive repair field. (Prerequisite: Admission into the Automotive Service program)

Advanced Electrical/Electronics**AST 1222 2.00 credits**

This course covers the operation and diagnosis of lighting systems, gauges and warning systems, horns, windshield wiper and washer systems, power locks, power windows and seats, and other automotive electrical systems. Prior knowledge gained by the successful completion of AST 1212 is required for student success in this course. (Prerequisites: Admission into the Automotive Service program)

Engine Diagnosis**AST 1311 1.00 credits**

This course covers engine diagnosis using various types of test equipment. This course focuses on developing the skills needed to diagnose and analyze basic engine problems. Prior knowledge gained by the successful completion of AST 1712 is required for student success in this course. (Prerequisite: Admission into the Automotive Service program)

Upper Engine Service**AST 1332 2.00 credits**

This course covers testing and rebuilding the cylinder head. The student will analyze cylinder compression and leakage to determine if valve and valve seat service is necessary. Hands-on experience consists of valve refacing, valve guide service, valve seat reconditioning, valve spring testing, shim selection, and proper assembly and installation. Prior knowledge gained by the successful completion of AST 1311 is required for student success in this course. (Prerequisite: Admission into the Automotive Service program)

Engine Lab

AST 1341 1.00 credits

Course Outline

This course is designed to allow students enrolled in the engine services sequence of courses, time to complete the assigned projects. Prior knowledge gained by the successful completion of AST 1323 and AST 1332 is required for student success in this course. (Prerequisite: Admission into the Automotive Service program)

Manual Transmission/Transaxle & 4X4

AST 1423 3.00 credits

This course covers the operation and the proper repair procedures for the types of manual transmissions/transaxles and transfer cases used in late model vehicles. Four wheel drive, locking hubs, axle disconnects, AWD, full-time, and part-time four-wheel drive systems will also be covered. Prior knowledge gained by successful completion of AST 1112 is required for student success in this class. (Prerequisite: Admission into the Automotive Service program)

Brakes

AST 1613 3.00 credits

This course covers the principles of friction and braking systems, disc and drum brakes, parking brakes, and power assist units. Emphasis will be placed on system operation, diagnosis, repair, and maintenance of the various types of braking systems. Prior knowledge gained by successful completion of AST 1112 is required for student success in this class. (Prerequisite: Admission into the Automotive Service program)

Basic Tune-up (Non-computer)

AST 1712 2.00 credits

This course covers the theory and principles of operation of automotive gasoline engines, fuel systems, ignition systems, and emission systems. Prior knowledge gained by the successful completion of AST 1212 is required for student success in this course. (Prerequisite: Admission into the Automotive Service program)

Automatic Transmission I

AST 2442 2.00 credits

This course covers how an automatic transmission works, the basic parts, functions, and power flow of the hydraulic circuits. This course also includes the basic theory of torque converters, planetary gears, clutches, bands, and hydraulic circuit operation. Prior knowledge gained by successful

Clutch & Drive Line

AST 1412 2.00 credits

This course covers standard automotive and light truck clutches. Content includes design, adjustment, overhaul, diagnosis, and repair. Also included are mechanical and hydraulic systems. The drive line section includes phasing, alignment, and balance. Prior knowledge gained by successful completion of AST 1112 is required for student success. (Prerequisites: Admission into the Automotive Service program)

Suspension/Steering & Wheel Alignment

AST 1513 3.00 credits

This course covers front and rear suspension systems, wheel balance, and steering systems and components. Students will be required to perform a front and rear wheel alignment. Prior knowledge gained by successful completion of AST 1112 is required for student success in this class. (Prerequisite: Admission into the Automotive Service program)

Advanced Brakes

AST 1622 2.00 credits

This course will cover anti-lock brake systems. Emphasis will be placed on system operation and controls. Diagnosis, repair, and maintenance of the various types of systems will also be included. Prior knowledge gained by successful completion of AST 1112 and AST 1613 is required for student success in this class. (Prerequisite: Admission into the Automotive Service program)

Rear Axle/Differential

AST 2432 2.00 credits

This course will cover the operation of and repair procedures of current differentials used on late model vehicles. Prior knowledge gained by successful completion of AST 1112 is required for student success in this class. (Prerequisite: Admission into the Automotive Service program)

Automatic Transmission II

AST 2452 2.00 credits

This course is a hands-on lab class in which various transmissions and transaxles are overhauled, adjusted, and bench tested. Basic overhaul techniques and special tool and gauge usage are included. Prior knowledge gained by successful completion of AST 1112 and AST 2442 is required

completion of AST 1112 is required for student success in this class. (Prerequisite: Admission into the Automotive Service program)

Automatic Transmission III

AST 2462 2.00 credits

The student after completing this course will have a basic understanding of troubleshooting, repairs, and adjustments of conventional and electronic shift automatic transmissions. Prior knowledge gained by successful completion of AST 1112, 2442, and 2452 is required for student success in this class. (Prerequisite: Admission into the Automotive Service program)

Introduction to Automotive Computers

AST 2733 3.00 credits

This course covers the theory and operating principles of automotive computers, sensors, and control devices. Prior knowledge gained by the successful completion of AST 1222, AST 1712, and AST 2723 is required for student success in this course. (Prerequisite: Admission into the Automotive Service program)

Engine Performance & Drivability

AST 2752 2.00 credits

This course emphasizes the accurate and efficient diagnosis and repair of drivability concerns associated with all aspects of engine operation. Particular attention will be placed on computerized engine management systems. Prior knowledge gained by the successful completion of AST 2743 is required for student success in this course. (Prerequisite: Admission into the Automotive Service program)

Auto Lab I

AST 2911 1.00 credits

This course is designed to provide students an opportunity to develop practical automotive repair skills. Auto Lab provides the student shop time to complete projects and lab assignments required in the Automotive Service program. This is a hands-on, performance based course where students work on diagnosing, maintaining and repairing vehicles. Prior knowledge gained by the successful completion of AST 1112 or concurrent enrollment in AST 1112 is required for student success in this course. (Prerequisite: Admission into the Automotive Service program)

for student success in this class. (Prerequisite: Admission into the Automotive Service program)

Fuel Systems I

AST 2723 3.00 credits

This course will cover the principles of operation of the automotive fuel and emission systems. Fuel system components and emission control devices associated with the fuel system will be included. System diagnosis and repair will be emphasized. Prior knowledge gained by the successful completion of AST 1712 is required for student success in this course. (Prerequisite: Admission into the Automotive Service program)

Fuel Systems II

AST 2743 3.00 credits

This course will cover throttle body, multi-port, and sequential fuel injection systems. This course focuses on preparing the student to inspect, test, diagnose, and repair automotive fuel injection systems. Prior knowledge gained by the successful completion of AST 2733 is required for student success in this course. (Prerequisite: Admission into the Automotive Service program)

Basic Air Conditioning

AST 2812 2.00 credits

This course covers the principles of air conditioning. Various system types, malfunction diagnosis, testing, and repair are studied in the classroom. Practical work such as component replacement, charging, and performance testing will be on actual systems. Prior knowledge gained by successful completion of AST 1112 is required for student success in this class. (Prerequisite: Admission into the Automotive Service program)

Auto Lab II

AST 2921 1.00 credits

This course is designed to provide students an opportunity to develop practical automotive repair skills, Auto Lab provides the student shop time to complete projects required in the Automotive Service program. This is a hands-on, performance based course where students work on diagnosing, maintaining and repairing vehicles. Students earn ♦Invoiced♦ or ♦Billed hours♦ for completing work assignments. Students are required to have their own tool set to complete lab assignments. This course is designed to provide students an opportunity develop practical automotive repair skills. Auto Lab provides the student shop time to complete projects and lab assignments required in the Automotive Service program. This is a hands-on, performance based course where students work on diagnosing, maintaining and repairing vehicles. Prior knowledge gained by successful completion of AST 1112 is

required for student success in this class. (Prerequisite: Admission into the Automotive Service program)

Auto Lab III

AST 2931 1.00 credits

This course is designed to provide students an opportunity to develop practical automotive repair skills. Auto Lab provides the student shop time to complete projects required in the Automotive Service program. This is a hands-on, performance based course where students work on diagnosing, maintaining and repairing vehicles. Prior knowledge gained by successful completion of AST 1112 is required for student success in this class. (Prerequisite: Admission into the Automotive Service program)

Auto Lab IV

AST 2941 1.00 credits

This course is designed to provide students an opportunity to develop practical automotive repair skills. Auto Lab provides the student shop time to complete projects and lab assignments required in the Automotive Service program. This is a hands-on, performance based course where students work on diagnosing, maintaining and repairing vehicles. Prior knowledge gained by the successful completion of AST 1112 or concurrent enrollment in AST 1112 is required for student success in this course. (Prerequisite: Admission into the Automotive Service program)

Individualized Study

AST 2951 1 - 8 credits

This course allows the student to design a program of study geared toward individual need and special interest. The student will specialize in developing skills and competencies in selected areas. (Prerequisites: Instructor approval)

Cooperative Occupational Experience

AST 2961 1 - 8 credits

Students will work in a sponsoring automotive service facility. The tasks and activities must be consistent with prior course work. The work schedule will be determined on a case-by-case basis. (Prerequisites: The student must be in the second year of the program and instructor approval is required. Credits are variable up to a maximum of 8)

Advanced Heating and Air Conditioning

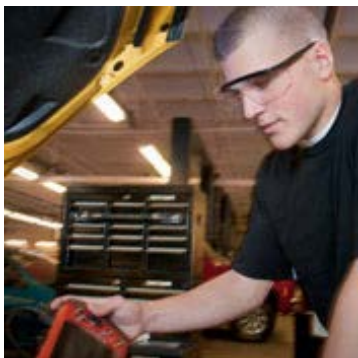
AST 2822 2.00 credits

This course covers automatic temperature control systems operation, testing and repairs of vacuum and electrical controls, air flow distribution, and heater system controls. Prior knowledge gained by successful completion of AST 1112 and AST 2812 is required for student success in this class. (Prerequisite: Admission into the Automotive Service program)

Automotive Service

Diploma • 64 Credits

DIP 3416



Degree Description

The Automotive Service program is designed to provide the opportunity to acquire the skills necessary for entry-level employment in the automotive service industry. An individual completing this program will find employment opportunities available in a variety of settings. Graduates find entry level positions in dealerships, independent repair facilities and fleet services. With additional training and experience, many technicians can become a shop foreman, service advisor, service manager or open their own business.

Admission Dates: Fall and Spring Semester

Offered on the North Mankato Campus

The course requirements listed below are specific to the 2013-2014 school year. If you need to view the program from previous years view our [Catalog Archive](#).

This credential is part of the Automotive Service department. [See the Automotive Service department page for more details](#)

Required Technical Courses (28 Courses)

Complete all of the following courses: NOTE: For qualified sophomores, COE may be substituted for up to 2 credits of Auto Lab.

- [AST 1112](#) Introduction to Auto Service (2 Credits)
- [AST 1121](#) Service Management (1 Credit)
- [AST 1212](#) Basic Electrical (2 Credits)
- [AST 1222](#) Advanced Electrical/Electronics (2 Credits)
- [AST 1233](#) Starting and Charging Systems (3 Credits)
- [AST 1311](#) Engine Diagnosis (1 Credit)
- [AST 1323](#) Lower Engine Service (3 Credits)
- [AST 1332](#) Upper Engine Service (2 Credits)
- [AST 1341](#) Engine Lab (1 Credit)
- [AST 1412](#) Clutch & Drive Line (2 Credits)
- [AST 1423](#) Manual Transmission/Transaxle & 4X4 (3 Credits)
- [AST 1513](#) Suspension/Steering & Wheel Alignment (3 Credits)
- [AST 1613](#) Brakes (3 Credits)
- [AST 1622](#) Advanced Brakes (2 Credits)
- [AST 1712](#) Basic Tune-up (Non-computer) (2 Credits)
- [AST 2432](#) Rear Axle/Differential (2 Credits)
- [AST 2442](#) Automatic Transmission I (2 Credits)
- [AST 2452](#) Automatic Transmission II (2 Credits)
- [AST 2462](#) Automatic Transmission III (2 Credits)
- [AST 2723](#) Fuel Systems I (3 Credits)
- [AST 2733](#) Introduction to Automotive Computers (3 Credits)
- [AST 2743](#) Fuel Systems II (3 Credits)
- [AST 2752](#) Engine Performance & Drivability (2 Credits)
- [AST 2812](#) Basic Air Conditioning (2 Credits)
- [AST 2911](#) Auto Lab I (1 Credit)
- [AST 2921](#) Auto Lab II (1 Credit)
- [AST 2931](#) Auto Lab III (1 Credit)
- [AST 2941](#) Auto Lab IV (1 Credit)

Required Liberal Arts and Sciences (6 Credits)

Complete 6 MNTC credits from MNTC goals 1-10.

PLEASE NOTE: All program plans are preliminary and curriculum may change without notice. Your [catalog of record](#) may have different requirements.

Technical Electives (1 Credit)

Complete 1 credit from the following courses:

[AST 1622](#) Advanced Brakes (2 Credits)

[AST 2822](#) Advanced Heating and Air Conditioning (2 Credits)

[AST 2951](#) Individualized Study (1 - 8 Credits)

[AST 2961](#) Cooperative Occupational Experience (1 - 8 Credits)

Automotive Service - Diploma of Occupational Proficiency Course Descriptions**Introduction to Auto Service****AST 1112 2.00 credits**

This course is a requisite for the Automotive Service program. The course will include the following topics: shop safety, shop practices and procedures, vehicle identification, use of electronic service information, proper use of hand tools, power tools, hoist and other shop equipment, basic fasteners, tires, lubricants and fluids. (Prerequisite: Admission into the Automotive Service program)

Basic Electrical**AST 1212 2.00 credits**

This course covers the fundamentals of electricity and electronics. Electrical circuits and components, magnetism, resistance, current flow, capacitance, instruments, diodes, and solid-state devices will be presented in a manner which relates the subject to the occupation. (Prerequisites: Admission into the Automotive Service program)

Starting and Charging Systems**AST 1233 3.00 credits**

This course covers the theory and operation of starting and charging systems. Instruction in parts identification, circuit operation, component testing, rebuilding procedures, and circuit diagnosis will be included. Prior knowledge gained by the successful completion of AST 1222 is required for student success in this course. (Prerequisite: Admission into the Automotive Service program)

Lower Engine Service**AST 1323 3.00 credits**

This course covers the theory of engine operation and construction, parts identification, measurements, and engine wear locations. Determining the service procedures an engine will require and the reconditioning of all lower engine components are included in this course. Prior knowledge gained by the successful completion of AST 1311 is required for student success in this course. (Prerequisite: Admission into the Automotive Service program)

Service Management**AST 1121 1.00 credits**

This course is designed for individuals who will be responsible for the operation of an automotive repair facility. It provides instruction in customer service, parts and service marketing, shop management, and business ethics in the automotive repair field. (Prerequisite: Admission into the Automotive Service program)

Advanced Electrical/Electronics**AST 1222 2.00 credits**

This course covers the operation and diagnosis of lighting systems, gauges and warning systems, horns, windshield wiper and washer systems, power locks, power windows and seats, and other automotive electrical systems. Prior knowledge gained by the successful completion of AST 1212 is required for student success in this course. (Prerequisites: Admission into the Automotive Service program)

Engine Diagnosis**AST 1311 1.00 credits**

This course covers engine diagnosis using various types of test equipment. This course focuses on developing the skills needed to diagnose and analyze basic engine problems. Prior knowledge gained by the successful completion of AST 1712 is required for student success in this course. (Prerequisite: Admission into the Automotive Service program)

Upper Engine Service**AST 1332 2.00 credits**

This course covers testing and rebuilding the cylinder head. The student will analyze cylinder compression and leakage to determine if valve and valve seat service is necessary. Hands-on experience consists of valve refacing, valve guide service, valve seat reconditioning, valve spring testing, shim selection, and proper assembly and installation. Prior knowledge gained by the successful completion of AST 1311 is required for student success in this course. (Prerequisite: Admission into the Automotive Service program)

Engine Lab

AST 1341 1.00 credits

Course Outline

This course is designed to allow students enrolled in the engine services sequence of courses, time to complete the assigned projects. Prior knowledge gained by the successful completion of AST 1323 and AST 1332 is required for student success in this course. (Prerequisite: Admission into the Automotive Service program)

Manual Transmission/Transaxle & 4X4

AST 1423 3.00 credits

This course covers the operation and the proper repair procedures for the types of manual transmissions/transaxles and transfer cases used in late model vehicles. Four wheel drive, locking hubs, axle disconnects, AWD, full-time, and part-time four-wheel drive systems will also be covered. Prior knowledge gained by successful completion of AST 1112 is required for student success in this class. (Prerequisite: Admission into the Automotive Service program)

Brakes

AST 1613 3.00 credits

This course covers the principles of friction and braking systems, disc and drum brakes, parking brakes, and power assist units. Emphasis will be placed on system operation, diagnosis, repair, and maintenance of the various types of braking systems. Prior knowledge gained by successful completion of AST 1112 is required for student success in this class. (Prerequisite: Admission into the Automotive Service program)

Basic Tune-up (Non-computer)

AST 1712 2.00 credits

This course covers the theory and principles of operation of automotive gasoline engines, fuel systems, ignition systems, and emission systems. Prior knowledge gained by the successful completion of AST 1212 is required for student success in this course. (Prerequisite: Admission into the Automotive Service program)

Automatic Transmission I

AST 2442 2.00 credits

This course covers how an automatic transmission works, the basic parts, functions, and power flow of the hydraulic circuits. This course also includes the basic theory of torque converters, planetary gears, clutches, bands, and hydraulic circuit operation. Prior knowledge gained by successful

Clutch & Drive Line

AST 1412 2.00 credits

This course covers standard automotive and light truck clutches. Content includes design, adjustment, overhaul, diagnosis, and repair. Also included are mechanical and hydraulic systems. The drive line section includes phasing, alignment, and balance. Prior knowledge gained by successful completion of AST 1112 is required for student success. (Prerequisites: Admission into the Automotive Service program)

Suspension/Steering & Wheel Alignment

AST 1513 3.00 credits

This course covers front and rear suspension systems, wheel balance, and steering systems and components. Students will be required to perform a front and rear wheel alignment. Prior knowledge gained by successful completion of AST 1112 is required for student success in this class. (Prerequisite: Admission into the Automotive Service program)

Advanced Brakes

AST 1622 2.00 credits

This course will cover anti-lock brake systems. Emphasis will be placed on system operation and controls. Diagnosis, repair, and maintenance of the various types of systems will also be included. Prior knowledge gained by successful completion of AST 1112 and AST 1613 is required for student success in this class. (Prerequisite: Admission into the Automotive Service program)

Rear Axle/Differential

AST 2432 2.00 credits

This course will cover the operation of and repair procedures of current differentials used on late model vehicles. Prior knowledge gained by successful completion of AST 1112 is required for student success in this class. (Prerequisite: Admission into the Automotive Service program)

Automatic Transmission II

AST 2452 2.00 credits

This course is a hands-on lab class in which various transmissions and transaxles are overhauled, adjusted, and bench tested. Basic overhaul techniques and special tool and gauge usage are included. Prior knowledge gained by successful completion of AST 1112 and AST 2442 is required

completion of AST 1112 is required for student success in this class. (Prerequisite: Admission into the Automotive Service program)

Automatic Transmission III

AST 2462 2.00 credits

The student after completing this course will have a basic understanding of troubleshooting, repairs, and adjustments of conventional and electronic shift automatic transmissions. Prior knowledge gained by successful completion of AST 1112, 2442, and 2452 is required for student success in this class. (Prerequisite: Admission into the Automotive Service program)

Introduction to Automotive Computers

AST 2733 3.00 credits

This course covers the theory and operating principles of automotive computers, sensors, and control devices. Prior knowledge gained by the successful completion of AST 1222, AST 1712, and AST 2723 is required for student success in this course. (Prerequisite: Admission into the Automotive Service program)

Engine Performance & Drivability

AST 2752 2.00 credits

This course emphasizes the accurate and efficient diagnosis and repair of drivability concerns associated with all aspects of engine operation. Particular attention will be placed on computerized engine management systems. Prior knowledge gained by the successful completion of AST 2743 is required for student success in this course. (Prerequisite: Admission into the Automotive Service program)

Auto Lab I

AST 2911 1.00 credits

This course is designed to provide students an opportunity to develop practical automotive repair skills. Auto Lab provides the student shop time to complete projects and lab assignments required in the Automotive Service program. This is a hands-on, performance based course where students work on diagnosing, maintaining and repairing vehicles. Prior knowledge gained by the successful completion of AST 1112 or concurrent enrollment in AST 1112 is required for student success in this course. (Prerequisite: Admission into the Automotive Service program)

for student success in this class. (Prerequisite: Admission into the Automotive Service program)

Fuel Systems I

AST 2723 3.00 credits

This course will cover the principles of operation of the automotive fuel and emission systems. Fuel system components and emission control devices associated with the fuel system will be included. System diagnosis and repair will be emphasized. Prior knowledge gained by the successful completion of AST 1712 is required for student success in this course. (Prerequisite: Admission into the Automotive Service program)

Fuel Systems II

AST 2743 3.00 credits

This course will cover throttle body, multi-port, and sequential fuel injection systems. This course focuses on preparing the student to inspect, test, diagnose, and repair automotive fuel injection systems. Prior knowledge gained by the successful completion of AST 2733 is required for student success in this course. (Prerequisite: Admission into the Automotive Service program)

Basic Air Conditioning

AST 2812 2.00 credits

This course covers the principles of air conditioning. Various system types, malfunction diagnosis, testing, and repair are studied in the classroom. Practical work such as component replacement, charging, and performance testing will be on actual systems. Prior knowledge gained by successful completion of AST 1112 is required for student success in this class. (Prerequisite: Admission into the Automotive Service program)

Auto Lab II

AST 2921 1.00 credits

This course is designed to provide students an opportunity to develop practical automotive repair skills, Auto Lab provides the student shop time to complete projects required in the Automotive Service program. This is a hands-on, performance based course where students work on diagnosing, maintaining and repairing vehicles. Students earn ♦Invoiced♦ or ♦Billed hours♦ for completing work assignments. Students are required to have their own tool set to complete lab assignments. This course is designed to provide students an opportunity develop practical automotive repair skills. Auto Lab provides the student shop time to complete projects and lab assignments required in the Automotive Service program. This is a hands-on, performance based course where students work on diagnosing, maintaining and repairing vehicles. Prior knowledge gained by successful completion of AST 1112 is

required for student success in this class. (Prerequisite: Admission into the Automotive Service program)

Auto Lab III

AST 2931 1.00 credits

This course is designed to provide students an opportunity to develop practical automotive repair skills. Auto Lab provides the student shop time to complete projects required in the Automotive Service program. This is a hands-on, performance based course where students work on diagnosing, maintaining and repairing vehicles. Prior knowledge gained by successful completion of AST 1112 is required for student success in this class. (Prerequisite: Admission into the Automotive Service program)

Advanced Brakes

AST 1622 2.00 credits

This course will cover anti-lock brake systems. Emphasis will be placed on system operation and controls. Diagnosis, repair, and maintenance of the various types of systems will also be included. Prior knowledge gained by successful completion of AST 1112 and AST 1613 is required for student success in this class. (Prerequisite: Admission into the Automotive Service program)

Individualized Study

AST 2951 1 - 8 credits

This course allows the student to design a program of study geared toward individual need and special interest. The student will specialize in developing skills and competencies in selected areas. (Prerequisites: Instructor approval)

Auto Lab IV

AST 2941 1.00 credits

This course is designed to provide students an opportunity to develop practical automotive repair skills. Auto Lab provides the student shop time to complete projects and lab assignments required in the Automotive Service program. This is a hands-on, performance based course where students work on diagnosing, maintaining and repairing vehicles. Prior knowledge gained by the successful completion of AST 1112 or concurrent enrollment in AST 1112 is required for student success in this course. (Prerequisite: Admission into the Automotive Service program)

Advanced Heating and Air Conditioning

AST 2822 2.00 credits

This course covers automatic temperature control systems operation, testing and repairs of vacuum and electrical controls, air flow distribution, and heater system controls. Prior knowledge gained by successful completion of AST 1112 and AST 2812 is required for student success in this class. (Prerequisite: Admission into the Automotive Service program)

Cooperative Occupational Experience

AST 2961 1 - 8 credits

Students will work in a sponsoring automotive service facility. The tasks and activities must be consistent with prior course work. The work schedule will be determined on a case-by-case basis. (Prerequisites: The student must be in the second year of the program and instructor approval is required. Credits are variable up to a maximum of 8)

Graphic Communications Department Overview

Graphic Communications is an ever changing industry which encompasses magazine, newspaper and book printing, electronic publishing, creative design, web page design, large format and digital printing and a host of other services according to the Print and Graphics Scholarship Foundation.

As a student in the Graphic Communications - Design and Production program, you'll be developing the creative side of yourself while carrying out your creativity in an actual production setting. Your layouts will be completed using the Adobe Creative Suite Design Premium software, and output to various processes such as large format printers, offset presses, web layouts, screen printing, and much more. Upon completion of this program, you'll have a well-rounded education as a Graphic Designer or Graphic Production Specialist to gain employment in the Graphic Communications industry.

The Graphic Communications programs offers you the choice of two emphases; Graphic Design and Graphic Production.

Core Competencies

1. Demonstrate good typography
2. Organize information
3. Develop layout and design skills
4. Demonstrate use of industry software
5. Compose full-color electronic layouts for output

Department Faculty

Gale Bigbee, Kevin McLaughlin

Graphic Communications Degrees

Graphic Communications AAS Degree
Graphic Communications Diploma

Graphic Communications

A.A.S. Degree • 72 Credits

AAS 3493



Degree Description

Graphic Communications is an ever-changing industry which encompasses magazine, newspaper and book printing, digital publishing, creative design, illustration, web page design, large format and digital printing and a host of other services according to the Print and Graphics Scholarship Foundation.

As a student in the Graphic Communications program, you'll be developing the creative side of yourself while carrying out your creativity in an actual production setting. The program offers training and instruction for students interested in graphic design, graphic production, web design and animation media. Introductory and advanced levels of illustration, layout and design, typography and product photography are also taught. Students will learn how to prepare their work for production with classes in work flow, printing processes and web page design. Students receive hands-on training using the latest Adobe Creative Suite which includes Photoshop, Illustrator, InDesign, Dreamweaver, Flash and Acrobat.

Admission Dates: Fall Semester

Offered on the North Mankato Campus

The course requirements listed below are specific to the 2013-2014 school year. If you need to view the program from previous years view our [Catalog Archive](#).

This credential is part of the Graphic Communications department. [See the Graphic Communications department page for more details](#)

Required Technical Courses (17 Courses)

Complete the following courses:

- [GCC 1100](#) Introduction to Graphic Communications (4 Credits)
- [GCC 1120](#) Graphic Software 1 (4 Credits)
- [GCC 1130](#) Layout and Typography (3 Credits)
- [GCC 1141](#) Digital Image Exploration (3 Credits)
- [GCC 1210](#) Drawing for Graphic Designers (3 Credits)
- [GCC 1220](#) Graphic Software 2 (4 Credits)
- [GCC 1250](#) Web Interactive Media 1 (3 Credits)
- [GCC 1260](#) Printing Processes (4 Credits)
- [GCC 2110](#) Design and Illustration 1 (4 Credits)
- [GCC 2120](#) Portfolio 1 (3 Credits)
- [GCC 2150](#) Web/Interactive Media 2 (3 Credits)
- [GCC 2161](#) Production Work Flow 1 (3 Credits)
- [GCC 2210](#) Design and Illustration 2 (4 Credits)
- [GCC 2220](#) Portfolio 2 (3 Credits)
- [GCC 2250](#) Web/Interactive Media 3 (3 Credits)
- [GCC 2261](#) Production Work Flow 2 (3 Credits)
- [GCC 2275](#) Special Problems (1 - 4 Credits)
- [GCC 2290](#) Graphic Communications Internship (1 - 3 Credits)

Required Liberal Arts and Sciences (3 Courses)

To complete an AAS Degree, students must complete 18 MnTC credits from 3 of the 10 MnTC goal areas.

Select the following courses:

- [ENGL100](#) Composition (4 Credits)
- [COMM140](#) Interpersonal Communication (3 Credits)
Or
- [COMM110](#) Public Speaking (3 Credits)
- [ART 110](#) Art Structure (3 Credits)
Or
- [ART 130](#) Painting (3 Credits)
Or
- [ART 140](#) Digital Photography (3 Credits)

PLEASE NOTE: All program plans are preliminary and curriculum may change without notice. Your [catalog of record](#) may have different requirements.

Elective Liberal Arts and Sciences

Select 8 additional MNTC credits from goals 1 - 10.

The following courses are recommended: PSYC100, SOC100, ART100, ART110, ENGL130, PHIL100 and PHIL 215.

Graphic Communications - Associate of Applied Science Degree Course Descriptions**Introduction to Graphic Communications****GCC 1100 4.00 credits**

This course is intended to explore the various aspects and careers in the fields of Art and Graphics. Tours and guest speakers will highlight the course with various hands-on/live projects being assigned to acquaint the learner with the various processes involved in visual communications. Other topics such as alternative forms of printing and the history of communications will be covered. (Prerequisites: None)

Layout and Typography**GCC 1130 3.00 credits**

Students will be introduced to the conceptual planning process used in layout and design. Students will understand that type as well as graphics are important design elements of a layout. It will be demonstrated how type interacts with graphics in a layout. Layout principles, color, proofing and preparing literature for output and printing will also be included in this course. (Prerequisites: None)

Drawing for Graphic Designers**GCC 1210 3.00 credits**

This course covers basic drawing fundamentals and the use of drawing as a planning tool. Basic drawing techniques will be used to create thumbnail sketches, comprehensives and finished drawings. Students will utilize traditional and computer drawing tools. (Prerequisite: GCC1120)

Web Interactive Media 1**GCC 1250 3.00 credits**

This course covers the basic planning procedures and the

Graphic Software 1**GCC 1120 4.00 credits**

Adobe Creative Suites is the dominant software package in the printing and publishing industry today. This course will be taught in a hands-on atmosphere learning the basics of Adobe InDesign, Illustrator, Photoshop, Acrobat and Bridge, and how these software packages work together in a seamless manner. Students will learn the tools, menus and palettes within each of the softwares, and integrate the use of all the softwares for photographs, graphics and layout applications. Projects will be assigned for a hands-on approach. (Prerequisites: None)

Digital Image Exploration**GCC 1141 3.00 credits**

This course is designed to cover basic areas of digital imagery: input/output hardware and the software involved; scanning of graphics and photographs; digital camera usage; and file formats, size and resolution comparisons. Students will take an in-depth examination of color theory and color management with practical knowledge for print and web. The course is taught in a hands-on atmosphere. Also included in this course are different methods of output to various devices and their effect on the digitized image. (Co-requisite: GCC 1120)

Graphic Software 2**GCC 1220 4.00 credits**

Graphic Software 2 is a continuation of working with Adobe Creative Suites software. The course will be taught in a hands-on atmosphere learning more advanced features of Adobe InDesign, Illustrator and Photoshop. Adobe Acrobat and Bridge will also be utilized during class sessions. Students should already have the fundamentals of the tools, menus and palettes within each of the softwares. More advanced topics such as masking, transparency and filters will be an integral part of the course. Projects will be assigned for a hands-on approach. (Prerequisites: GCC 1120)

Printing Processes**GCC 1260 4.00 credits**

This course is designed to acquaint the learner with the

software used in interactive media and web design and production. Students will receive a basic understanding of HTML. File and folder preparation will also be demonstrated. (Prerequisite: GCC1120)

Design and Illustration 1

GCC 2110 4.00 credits

Students will learn planning procedures for advanced design, illustration and production principles on the board and in the use of various software. Projects may include brochure, package and logo design, variable data layouts, and product photography planning. Color, preflight, output and live industry work will also be covered in this course. The advanced use of industry-used software will be essential in all assignments. (Prerequisites: GCC 1210, 1220)

Web/Interactive Media 2

GCC 2150 3.00 credits

Students will continue to use the planning procedures and software skills they learned in GCC 1250 Web/Interactive Media 1. These planning procedures include layout and design, file preparation and file formatting for web and interactive media. Projects will include web promotional presentations and development of student webfolios. The importance of file naming conventions and filing systems will be emphasized. (Prerequisite: GCC 1250)

Design and Illustration 2

GCC 2210 4.00 credits

This course is a continuation of GCC 2110 Design and Illustration 1. Students will work in a hands-on atmosphere with higher-level projects such as packaging layouts, multi-page layouts and large format printing. The advanced use of industry-used software will be essential in all assignments. (Prerequisite: GCC 2110 with a grade of C- or better)

Web/Interactive Media 3

GCC 2250 3.00 credits

This course builds on the course work covered in GCC 2150 Web/Interactive Media 2. Using the web and interactive softwares learned, students will continue to plan, develop and finalize their webfolios and other projects. The web and interactive capabilities of other applications will also be explored. Webfolios will be prepared to upload to the SCC web site. (Prerequisite: GCC 2150)

fundamentals of printing ink on various substrates. Coursework includes terminology, equipment and safety. The principles of offset lithography, screen, laser and inkjet printing are stressed in a hands-on laboratory atmosphere. Basic prep and post-press processes are also stressed in this course. (Prerequisites: GCC1120, GCC1130, GCC1141)

Portfolio 1

GCC 2120 3.00 credits

Students will design personal business logos and stationery ensembles which will include stationery, cover letters and resumes. Traditional portfolio page layouts will be designed and revised throughout the semester. Student work will be prepared for display in their portfolios. (Prerequisite: GCC 1220)

Production Work Flow 1

GCC 2161 3.00 credits

This course is designed to introduce the Graphics Communications student to the workplace through tours, live projects, and special topics. Students will tour various local graphics industries that offer different methods of graphic communications (i.e. screen printing, web page building, pad printing, offset lithography, newspapers, television production, multimedia, etc.). Students will also perform production tasks of design work of the student and/or live work of a customer within the college or non-profit entities within the community. These hands-on projects will incorporate all phases of graphic communications from design to workflow to production and finishing. Emerging technology and topics will also be discussed and researched as part of this course. (Prerequisites: GCC 1220, 1260)

Portfolio 2

GCC 2220 3.00 credits

Students will continue to research potential employment sites and prepare for the interviewing process in the graphic communications field. The students will continue to research, update and expand their portfolios with projects from other Graphic Communications courses as they prepare for graduation and entering the job market. (Prerequisite: GCC 2120)

Production Work Flow 2

GCC 2261 3.00 credits

This course is a continuation of GCC 2161 Production Work Flow 1. Students will work on live projects for customers within the college and for other non-profit entities within the community. These hands-on projects will incorporate all phases of graphic communications from design to workflow to production to finishing. This course explores emerging technologies within Graphic Communications and how these

technologies impact our lives. (Prerequisite: GCC 2161 with a grade of C- or better)

Special Problems

GCC 2275 1 - 4 credits

The student will propose and produce a project in their area of interest. (Prerequisites: GCC 1220 and 1250 with a grade of C- or better or advisor approval)

Composition

ENGL100 4.00 credits

Composition is concerned with developing, through theory and practice, the ability to communicate in written form for personal and professional reasons. Students will develop writing skills, analytical skills, and critical thinking skills. Students will complete readings, papers, grammar exercises, and in-class activities. Students will learn methods of writing informatively and persuasively. (Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher AND a score of 85.5 or higher on the Sentence Skills portion of the Accuplacer test or completion of ENGL 0080 and ENGL 0090 with a grade of C or higher)(MNTC 1: Communication) This course has an online option.

Public Speaking

COMM110 3.00 credits

This course develops or improves effective performance in acquiring, evaluating, organizing, and communicating information. Learners develop and apply critical and creative thinking to structuring arguments, making presentations, using multimedia, and supporting each other in impromptu and extemporaneous speaking. Course de-emphasizes competition and stresses personal and workplace effectiveness in communication skills. (Prerequisites: Must have a score of 86 or higher on the Sentence Skills portion of the Accuplacer test or completion of ENGL 0080 and ENGL 0090 with a grade of C or higher) (MNTC 1: Communication)

Painting

ART 130 3.00 credits

Painting is an introductory studio course in the elements of traditional and contemporary oil painting. Students will explore and discuss the various techniques and methods basic to the creation of paintings. Students will participate in the discussions and critiques of traditional and contemporary paintings and explore the creative process via the medium of

Graphic Communications Internship

GCC 2290 1 - 3 credits

This course is designed to provide the student with a purposeful occupational experience in the Graphic Communications field. Each internship is an individualized experience. A plan is created for each student in conjunction with the training site to provide experience related to the skills and knowledge acquired in the program. This plan is based on the college's and the program's core competencies. One credit of Internship is equal to 48 hours. (Prerequisites: GCC 1210, 1220, 1250, and 1260 with a grade of C- or better or advisor approval)

Interpersonal Communication

COMM140 3.00 credits

In this class, participants will examine key components of interpersonal communication theory, identify the interpersonal communication skills necessary for healthy relationships, assess their own interpersonal communication effectiveness, and practice and hone interpersonal communication skills necessary for healthy home and work relationships. This course will also address relevant issues of social interaction, including how human diversity/culture (age, race, gender, etc.) affects our interpersonal communication. (Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher)(MNTC 1: Communication)

Art Structure

ART 110 3.00 credits

Art Structure is an introductory studio course for all students. It is designed to acquaint the student with the materials and techniques of the visual artist, principles of design, basic color theory, creativity, and the artistic process. Students will explore and produce works in various traditional and contemporary media of the visual arts. (Prerequisites: None) (MNTC 6: Humanities and Fine Arts)

Digital Photography

ART 140 3.00 credits

Introduction to the conceptual, technical and historical aspects of photography as a creative medium using digital technology within the fine arts context. Students study camera operation and techniques, composition and design, digital image capture, related software, and digital output. This class also utilizes the computer as a digital darkroom to enhance

oil paint. (Prerequisites: None) (MNTC 6: Humanities and Fine Arts)

photographic images. Projects provide students with an understanding of how photographs function, not only technically, but also visually and conceptually. Students must have a digital camera; (variable F. Stop, and shutter recommended) Textbook and other supplies will also be required. (Prerequisite: None) (MNTC 6: Humanities and Fine Arts)

Graphic Communications

Diploma • 60 Credits

DIP 3494



Degree Description

Graphic Communications is an ever-changing industry which encompasses magazine, newspaper and book printing, digital publishing, creative design, illustration, web page design, large format and digital printing and a host of other services according to the Print and Graphics Scholarship Foundation.

As a student in the Graphic Communications program, you'll be developing the creative side of yourself while carrying out your creativity in an actual production setting. The program offers training and instruction for students interested in graphic design, graphic production, web design and animation media. Introductory and advanced levels of illustration, layout and design, typography and product photography are also taught. Students will learn how to prepare their work for production with classes in work flow, printing processes and web page design. Students receive hands-on training using the latest Adobe Creative Suite which includes Photoshop, Illustrator, InDesign, Dreamweaver, Flash and Acrobat.

Admission Dates: Fall Semester

Offered on the North Mankato Campus

The course requirements listed below are specific to the 2013-2014 school year. If you need to view the program from previous years view our [Catalog Archive](#).

This credential is part of the Graphic Communications department. [See the Graphic Communications department page for more details](#)

Required Technical Courses (17 Courses)

Complete the following courses:

- [GCC 1100](#) Introduction to Graphic Communications (4 Credits)
- [GCC 1120](#) Graphic Software 1 (4 Credits)
- [GCC 1130](#) Layout and Typography (3 Credits)
- [GCC 1141](#) Digital Image Exploration (3 Credits)
- [GCC 1210](#) Drawing for Graphic Designers (3 Credits)
- [GCC 1220](#) Graphic Software 2 (4 Credits)
- [GCC 1250](#) Web Interactive Media 1 (3 Credits)
- [GCC 1260](#) Printing Processes (4 Credits)
- [GCC 2110](#) Design and Illustration 1 (4 Credits)
- [GCC 2120](#) Portfolio 1 (3 Credits)
- [GCC 2150](#) Web/Interactive Media 2 (3 Credits)
- [GCC 2161](#) Production Work Flow 1 (3 Credits)
- [GCC 2210](#) Design and Illustration 2 (4 Credits)
- [GCC 2220](#) Portfolio 2 (3 Credits)
- [GCC 2250](#) Web/Interactive Media 3 (3 Credits)
- [GCC 2261](#) Production Work Flow 2 (3 Credits)
- [GCC 2275](#) Special Problems (1 - 4 Credits)
- [GCC 2290](#) Graphic Communications Internship (1 - 3 Credits)

Required Liberal Arts & Sciences (2 Courses)

Complete the following courses:

- [COMM140](#) Interpersonal Communication (3 Credits)
- Or
- [COMM110](#) Public Speaking (3 Credits)
- [ART 110](#) Art Structure (3 Credits)
- Or
- [ART 130](#) Painting (3 Credits)
- Or
- [ART 140](#) Digital Photography (3 Credits)

PLEASE NOTE: All program plans are preliminary and curriculum may change without notice. Your [catalog of record](#) may have different requirements.

Graphic Communications - Diploma of Occupational Proficiency Course Descriptions**Introduction to Graphic Communications****GCC 1100 4.00 credits**

This course is intended to explore the various aspects and careers in the fields of Art and Graphics. Tours and guest speakers will highlight the course with various hands-on/live projects being assigned to acquaint the learner with the various processes involved in visual communications. Other topics such as alternative forms of printing and the history of communications will be covered. (Prerequisites: None)

Layout and Typography**GCC 1130 3.00 credits**

Students will be introduced to the conceptual planning process used in layout and design. Students will understand that type as well as graphics are important design elements of a layout. It will be demonstrated how type interacts with graphics in a layout. Layout principles, color, proofing and preparing literature for output and printing will also be included in this course. (Prerequisites: None)

Drawing for Graphic Designers**GCC 1210 3.00 credits**

This course covers basic drawing fundamentals and the use of drawing as a planning tool. Basic drawing techniques will be used to create thumbnail sketches, comprehensives and finished drawings. Students will utilize traditional and computer drawing tools. (Prerequisite: GCC1120)

Web Interactive Media 1**GCC 1250 3.00 credits**

This course covers the basic planning procedures and the

Graphic Software 1**GCC 1120 4.00 credits**

Adobe Creative Suites is the dominant software package in the printing and publishing industry today. This course will be taught in a hands-on atmosphere learning the basics of Adobe InDesign, Illustrator, Photoshop, Acrobat and Bridge, and how these software packages work together in a seamless manner. Students will learn the tools, menus and palettes within each of the softwares, and integrate the use of all the softwares for photographs, graphics and layout applications. Projects will be assigned for a hands-on approach. (Prerequisites: None)

Digital Image Exploration**GCC 1141 3.00 credits**

This course is designed to cover basic areas of digital imagery: input/output hardware and the software involved; scanning of graphics and photographs; digital camera usage; and file formats, size and resolution comparisons. Students will take an in-depth examination of color theory and color management with practical knowledge for print and web. The course is taught in a hands-on atmosphere. Also included in this course are different methods of output to various devices and their effect on the digitized image. (Co-requisite: GCC 1120)

Graphic Software 2**GCC 1220 4.00 credits**

Graphic Software 2 is a continuation of working with Adobe Creative Suites software. The course will be taught in a hands-on atmosphere learning more advanced features of Adobe InDesign, Illustrator and Photoshop. Adobe Acrobat and Bridge will also be utilized during class sessions. Students should already have the fundamentals of the tools, menus and palettes within each of the softwares. More advanced topics such as masking, transparency and filters will be an integral part of the course. Projects will be assigned for a hands-on approach. (Prerequisites: GCC 1120)

Printing Processes**GCC 1260 4.00 credits**

This course is designed to acquaint the learner with the

software used in interactive media and web design and production. Students will receive a basic understanding of HTML. File and folder preparation will also be demonstrated. (Prerequisite: GCC1120)

Design and Illustration 1

GCC 2110 4.00 credits

Students will learn planning procedures for advanced design, illustration and production principles on the board and in the use of various software. Projects may include brochure, package and logo design, variable data layouts, and product photography planning. Color, preflight, output and live industry work will also be covered in this course. The advanced use of industry-used software will be essential in all assignments. (Prerequisites: GCC 1210, 1220)

Web/Interactive Media 2

GCC 2150 3.00 credits

Students will continue to use the planning procedures and software skills they learned in GCC 1250 Web/Interactive Media 1. These planning procedures include layout and design, file preparation and file formatting for web and interactive media. Projects will include web promotional presentations and development of student webfolios. The importance of file naming conventions and filing systems will be emphasized. (Prerequisite: GCC 1250)

Design and Illustration 2

GCC 2210 4.00 credits

This course is a continuation of GCC 2110 Design and Illustration 1. Students will work in a hands-on atmosphere with higher-level projects such as packaging layouts, multi-page layouts and large format printing. The advanced use of industry-used software will be essential in all assignments. (Prerequisite: GCC 2110 with a grade of C- or better)

Web/Interactive Media 3

GCC 2250 3.00 credits

This course builds on the course work covered in GCC 2150 Web/Interactive Media 2. Using the web and interactive softwares learned, students will continue to plan, develop and finalize their webfolios and other projects. The web and interactive capabilities of other applications will also be explored. Webfolios will be prepared to upload to the SCC web site. (Prerequisite: GCC 2150)

fundamentals of printing ink on various substrates. Coursework includes terminology, equipment and safety. The principles of offset lithography, screen, laser and inkjet printing are stressed in a hands-on laboratory atmosphere. Basic prep and post-press processes are also stressed in this course. (Prerequisites: GCC1120, GCC1130, GCC1141)

Portfolio 1

GCC 2120 3.00 credits

Students will design personal business logos and stationery ensembles which will include stationery, cover letters and resumes. Traditional portfolio page layouts will be designed and revised throughout the semester. Student work will be prepared for display in their portfolios. (Prerequisite: GCC 1220)

Production Work Flow 1

GCC 2161 3.00 credits

This course is designed to introduce the Graphics Communications student to the workplace through tours, live projects, and special topics. Students will tour various local graphics industries that offer different methods of graphic communications (i.e. screen printing, web page building, pad printing, offset lithography, newspapers, television production, multimedia, etc.). Students will also perform production tasks of design work of the student and/or live work of a customer within the college or non-profit entities within the community. These hands-on projects will incorporate all phases of graphic communications from design to workflow to production and finishing. Emerging technology and topics will also be discussed and researched as part of this course. (Prerequisites: GCC 1220, 1260)

Portfolio 2

GCC 2220 3.00 credits

Students will continue to research potential employment sites and prepare for the interviewing process in the graphic communications field. The students will continue to research, update and expand their portfolios with projects from other Graphic Communications courses as they prepare for graduation and entering the job market. (Prerequisite: GCC 2120)

Production Work Flow 2

GCC 2261 3.00 credits

This course is a continuation of GCC 2161 Production Work Flow 1. Students will work on live projects for customers within the college and for other non-profit entities within the community. These hands-on projects will incorporate all phases of graphic communications from design to workflow to production to finishing. This course explores emerging technologies within Graphic Communications and how these

technologies impact our lives. (Prerequisite: GCC 2161 with a grade of C- or better)

Special Problems

GCC 2275 1 - 4 credits

The student will propose and produce a project in their area of interest. (Prerequisites: GCC 1220 and 1250 with a grade of C- or better or advisor approval)

Graphic Communications Internship

GCC 2290 1 - 3 credits

This course is designed to provide the student with a purposeful occupational experience in the Graphic Communications field. Each internship is an individualized experience. A plan is created for each student in conjunction with the training site to provide experience related to the skills and knowledge acquired in the program. This plan is based on the college's and the program's core competencies. One credit of Internship is equal to 48 hours. (Prerequisites: GCC 1210, 1220, 1250, and 1260 with a grade of C- or better or advisor approval)

Interpersonal Communication

COMM140 3.00 credits

In this class, participants will examine key components of interpersonal communication theory, identify the interpersonal communication skills necessary for healthy relationships, assess their own interpersonal communication effectiveness, and practice and hone interpersonal communication skills necessary for healthy home and work relationships. This course will also address relevant issues of social interaction, including how human diversity/culture (age, race, gender, etc.) affects our interpersonal communication. (Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher)(MNTC 1: Communication)

Public Speaking

COMM110 3.00 credits

This course develops or improves effective performance in acquiring, evaluating, organizing, and communicating information. Learners develop and apply critical and creative thinking to structuring arguments, making presentations, using multimedia, and supporting each other in impromptu and extemporaneous speaking. Course de-emphasizes competition and stresses personal and workplace effectiveness in communication skills. (Prerequisites: Must have a score of 86 or higher on the Sentence Skills portion of the Accuplacer test or completion of ENGL 0080 and ENGL 0090 with a grade of C or higher) (MNTC 1: Communication)

Art Structure

ART 110 3.00 credits

Art Structure is an introductory studio course for all students. It is designed to acquaint the student with the materials and techniques of the visual artist, principles of design, basic color theory, creativity, and the artistic process. Students will explore and produce works in various traditional and contemporary media of the visual arts. (Prerequisites: None) (MNTC 6: Humanities and Fine Arts)

Painting

ART 130 3.00 credits

Painting is an introductory studio course in the elements of traditional and contemporary oil painting. Students will explore and discuss the various techniques and methods basic to the creation of paintings. Students will participate in the discussions and critiques of traditional and contemporary paintings and explore the creative process via the medium of oil paint. (Prerequisites: None) (MNTC 6: Humanities and Fine Arts)

Digital Photography

ART 140 3.00 credits

Introduction to the conceptual, technical and historical aspects of photography as a creative medium using digital technology within the fine arts context. Students study camera operation and techniques, composition and design, digital image capture, related software, and digital output. This class also utilizes the computer as a digital darkroom to enhance photographic images. Projects provide students with an understanding of how photographs function, not only technically, but also visually and conceptually. Students must have a digital camera; (variable F. Stop, and shutter

recommended) Textbook and other supplies will also be required. (Prerequisite: None) (MNTC 6: Humanities and Fine Arts)

Health Science Broad Field Department Overview

A general, introductory program in health sciences that prepares individuals for transfer to a variety of baccalaureate degree programs. This 60 credit degree includes instruction in the basic sciences and aspects of the subject matter related to various health occupations.

Applicable programs include:

Bemidji State University –including but not limited to:

- Community Health
- Exercise Science
- Nursing (limited seats available on a competitive basis)

Metropolitan State University- including but not limited to:

- Nursing (limited seats available on a competitive basis)

Minnesota State University, Mankato - including but not limited to:

- Communication Disorders
- Foods and Nutrition
- Dental Hygiene (limited seats available on a competitive basis)
- Therapeutic Recreation
- Dietetics
- Nursing (limited seats available on a competitive basis)
- Corrections
- Psychology
- Health Science
- Social Work

Minnesota State University Moorhead- including but not limited to:

- Health Education
- Exercise Science
- Community Health

St. Cloud State University- including but not limited to:

- Athletic Training
- Community Health
- Social Work

Southwest Minnesota State University - including but not limited to:

- Exercise Science

Winona State University - including but not limited to:

- Health, exercise and Rehabilitative Sciences
- Movement Sciences
- Cardiopulmonary Rehabilitation
- Exercise Sciences

- Health Promotion
- Nursing (limited seats available on a competitive basis)
- Biology – Allied Health

Health Science Broad Field Degrees

Health Sciences Broad Field AS Degree

Health Sciences Broad Field

A.S. Degree • 60 Credits

AS 2366/AS 3366

Degree Description

A general, introductory program in health sciences that prepares individuals for transfer to a variety of baccalaureate degree programs. This 60-credit degree includes instruction in the basic sciences and aspects of the subject matter related to various health occupations.

Admission Dates: Fall and Spring Semester

Offered on the Faribault and North Mankato Campuses

The course requirements listed below are specific to the 2013-2014 school year. If you need to view the program from previous years view our [Catalog Archive](#).

This credential is part of the Health Science Broad Field department. [See the Health Science Broad Field department page for more details](#)

Required Courses (13 Courses)

Complete the following courses:

[ENGL100](#) Composition (4 Credits)

[COMM130](#) Intercultural Communication (3 Credits)

[MATH120](#) College Algebra (4 Credits)

[MATH154](#) Elementary Statistics (4 Credits)

[BIOL100](#) Introduction to Biology (4 Credits)

Or

[BIOL106](#) Introduction to Cell Biology (3 Credits)

[CHEM108](#) Introduction to Chemistry (4 Credits)

[PSYC100](#) Introduction to Psychology (4 Credits)

Or

[PSYC110](#) Lifespan Psychology (3 Credits)

[SOC 101](#) Introduction to Sociology (3 Credits)

[PHIL100](#) Ethics in Society (3 Credits)

[BIOL270](#) Microbiology (4 Credits)

[BIOL225](#) Anatomy and Physiology I (4 Credits)

[BIOL235](#) Anatomy and Physiology II (4 Credits)

[FCS 105](#) Nutrition and Healthy Living (3 Credits)

Elective Credits (12-14) (12 Credits)

Chosen per selected baccalaureate degree program. Courses should be selected in consultation with advisor/faculty. You must complete enough elective credits (12-14) to total 60 credits in your program.

PLEASE NOTE: All program plans are preliminary and curriculum may change without notice. Your [catalog of record](#) may have different requirements.

Health Sciences Broad Field - Associate in Science Course Descriptions**Composition****ENGL100 4.00 credits**

Composition is concerned with developing, through theory and practice, the ability to communicate in written form for personal and professional reasons. Students will develop writing skills, analytical skills, and critical thinking skills. Students will complete readings, papers, grammar exercises, and in-class activities. Students will learn methods of writing informatively and persuasively. (Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher AND a score of 85.5 or higher on the Sentence Skills portion of the Accuplacer test or completion of ENGL 0080 and ENGL 0090 with a grade of C or higher)(MNTC 1: Communication) This course has an online option.

College Algebra**MATH120 4.00 credits**

This course is mainly concerned with functions, most of which are algebraic. It begins with a general treatment of equations and inequalities and then proceeds to cover linear functions, quadratic functions, other polynomial and rational functions, piecewise functions, equations involving radicals and absolute values, logarithms and exponentials, systems of equations and inequalities, permutations and combinations. (Prerequisites: Two years of high school algebra or completion of MATH 0085 with a grade of C or higher, or a score of 75.5 on the Elementary Algebra portion of the Accuplacer test AND a score of 49.5 or higher on the College Level Math portion of the Accuplacer test) (MNTC 4: Mathematical/Logical Reasoning)

Introduction to Biology**BIOL100 4.00 credits**

Introduction to Biology familiarizes students with fundamental biological principles and processes occurring within our natural world. This course engages students in the methodology and practice of scientific investigation, and emphasizes molecular and cellular processes, systems of the human body, and human impact on the environment. Discussions of organisms are framed by the sciences of ecology and evolution with a focus on the relationship between biological structure and function. Lecture and a 2 hour lab are included. (Prerequisites: Must have a score of 78 or higher on the Reading portion of

Intercultural Communication**COMM130 3.00 credits**

The focus of intercultural communication is to develop and improve the knowledge needed to understand culture, communication, how culture influences communication, and the process of communication between people from different cultures or co-cultures. The course also focuses on practicing the skills needed for effective intercultural and intracultural interactions. (Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher) (MNTC 7, 8: Human Diversity, Global Perspectives)

Elementary Statistics**MATH154 4.00 credits**

This course introduces the essential mathematical elements of statistics, applying them to a broad range of areas including business, manufacturing, economics, and the physical, biological and social sciences. Topics include descriptive measures of data, measures of central tendency, variability, standard probability distributions, tests of hypotheses, confidence intervals, and estimation. To put the treatment on a strong foundation, concepts of probability are developed throughout, and shown to form the unifying theme behind modern statistics. (Prerequisites: Two years of high school algebra, completion of MATH 0085 with a grade of C or higher or a score of 75.5 or higher on the Elementary Algebra portion of the Accuplacer test) (MNTC 4: Mathematical/Logical Reasoning)

Introduction to Cell Biology**BIOL106 3.00 credits**

This is an introductory cell biology course dealing with: the cell structure and organelles; basic chemistry and biochemical molecules; cell transport and energy concepts; cellular respiration; cell reproduction; patterns of inheritance; structure and function of DNA; how genes are controlled; DNA technology. (Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ0080 and READ0090 with a grade of C or higher) (MNTC 3: Natural Sciences)

the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher) (MNTC 3: Natural Sciences)

Introduction to Chemistry

CHEM108 4.00 credits

A one-semester introduction to the field of chemistry, this course is designed to allow the student to understand how chemistry relates to everyday life and to learn some of the language and concepts of chemistry related to applied health. This course uses a math-based approach. (Prerequisite: Must have a score of 75.5 or higher in the Elementary Algebra portion of the Accuplacer test or completion of MATH 0085 with a grade of C or higher.) (MNTC 3: Natural Sciences)

Lifespan Psychology

PSYC110 3.00 credits

This is an introductory course examining human development across the lifespan, with emphasis on normal physical, cognitive, and social development. (Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher) (MNTC 5, 7: History/Social & Behavioral Sciences, Human Diversity)

Ethics in Society

PHIL100 3.00 credits

This course studies the foundations for moral beliefs, judgments, and values and the part they play in practical ethical judgments. In its application, the course deals with contemporary issues and explores specific issues of personal morality as well as business and social ethics. (Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher) (MNTC 6, 9: Humanities & Fine Arts, Ethical & Civil Responsibility)

Anatomy and Physiology I

BIOL225 4.00 credits

Anatomy and Physiology I is an introduction to the structure and function of the human body under normal and abnormal conditions. It is the first in a two course series. It will cover

Introduction to Psychology

PSYC100 4.00 credits

This course will introduce the broad spectrum of theories and applications that make up the field of psychology. Psychology is the scientific study of behavior and mental processes, and how they are affected by physical and mental states, and external environments and social forces. (Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher) (MNTC 5: History/Social & Behavioral Sciences)

Introduction to Sociology

SOC 101 3.00 credits

The world is a far more diverse place than you might think! This course is a broad survey of sociology and its practical uses for all of us. In this course, students are introduced to a variety of topics, emphasizing breadth rather than depth. After learning about the basic theories and methods of sociology, students will cover topics such as race, gender, education, religion, social class, work, family, the environment, government and politics, organizations and bureaucracy, and other topics. Students will learn about the nature of all of these areas and their effects on individuals and their broader implications for society. In the end, students will leave with a far greater understanding of how society is organized and what that means for where we have been, where we are, and where we are going as a people. (Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher) (MNTC 5, 8: History/Social & Behavioral Sciences, Global Perspective)

Microbiology

BIOL270 4.00 credits

This course is an introduction to the general principles and methods used in the study of microorganisms. It includes a survey of prokaryotic and eukaryotic microorganisms emphasizing bacteria and viruses. Topics include microbial cell structure and function, metabolism, microbial genetics, and the role of microorganisms in disease, immunity, and other selected applied areas. Laboratory techniques include isolating, culturing, and identifying microorganisms. (Prerequisites: CHEM 108 or CHEM 120 or BIOL 225) (MNTC 3: Natural Sciences)

Anatomy and Physiology II

BIOL235 4.00 credits

Anatomy and Physiology II is an introduction to the structure and function of the human body under normal and abnormal conditions. It is the second in a two course series. It will cover

tissues, the integumentary, skeletal and muscular systems, articulations, nervous tissue, spinal cord and nerves, brain and cranial nerves, anatomy of the heart, blood vessels and circulation and the lymphatic structures. It will also cover cellular biology, cellular transport, cell reproduction and basic review of biochemistry as it relates to the human body. This course contains a laboratory component which includes dissection. For Biology majors, please see BIOL 220 Anatomy and BIOL 230 Physiology. (Prerequisites: CHEM 108 or high school chemistry within the past 3 years, must have a score of 76 or higher on the Elementary Algebra portion of the Accuplacer test or completion of MATH 0075 and MATH 0085 with a grade of C or higher AND a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ0090 with a grade of C or higher) (MNTC 3: Natural Sciences)

the autonomic, endocrine, immune, respiratory, digestive urinary and reproductive systems. It will also cover fluid electrolyte, acid-base balance, blood, blood pressure regulation and functional characteristics of the heart, special senses, development and inheritance. This course also has a lab component in which students will perform hands on activities to reinforce some of the material taught in lecture. For Biology majors, please see BIOL 220 Anatomy and BIOL 230 Physiology. (Prerequisite: Completion of BIOL 225 with a grade of C or higher) (MNTC 3: Natural Sciences)

Nutrition and Healthy Living

FCS 105 3.00 credits

This course provides an overview of basic principles of nutrition. Topics include contemporary issues such as food labeling, dieting practices, eating disorders, fitness, malnutrition, and nutrition throughout the life cycle. This course also focuses on the knowledge and skills necessary for the development and enhancement of a healthy lifestyle throughout the life span. (Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher)

Health Support Specialist Department Overview

Under this new Minnesota model, the Health Support Specialist program consists of a new training to help create a blended worker model, and was established specifically for the aging services field. This is a new occupation and is recognized by the U.S. Department of Labor, designed to provide a career ladder for frontline workers in the long term workforce field.

This new curriculum consists of 7 interactive courses each covering a different area of study such as culinary care, meaningful activities and psychosocial care to provide person directed care to residents. This curriculum is also part of the Registered Apprenticeship program so student will need to complete a “on the job” training model which gives students the opportunity to earn while they learn.

Upon completion of all courses, students will earn 9 credits, receive a HSS certificate and receive a Registered Apprenticeship Health Support Specialist Certificate from the State of Minnesota Department of Labor.

Pre-requisite: Nursing Assistant (CNA)

Student Background Studies:

Minnesota law requires that any person who provides services that involve direct contact with patients and residents at a health care or child care facility licensed by the Minnesota Department of Health have a background study conducted by the state. An individual who is disqualified from having direct patient contact as a result of the background study, and whose disqualification is not set aside by the Commissioner of Health, will not be permitted to participate in a clinical placement in a Minnesota licensed health care or child care facility. Failure to participate in a clinical placement required by the academic program could result in ineligibility to qualify for a degree in that program.

Health Support Specialist Degrees

Health Support Specialist Certificate

Health Support Specialist

Certificate • 9 Credits

CERT2365/CERT3365

Degree Description

Under this new Minnesota model, the Health Support Specialist program consists of a new training to help create a blended worker model, and was established specifically for the aging services field. This is a new occupation and is recognized by the U.S. Department of Labor, designed to provide a career ladder for frontline workers in the long term workforce field.

Admission Dates: Fall and Spring Semester

Offered on the Faribault and North Mankato Campuses

The course requirements listed below are specific to the 2013-2014 school year. If you need to view the program from previous years view our [Catalog Archive](#).

This credential is part of the Health Support Specialist department. [See the Health Support Specialist department page for more details](#)

Required Technical Courses (7 Courses)

Complete the following courses:

[HSS 1000](#) Introduction to the Health Support Specialist (3 Credits)

[HSS 1001](#) Health Support Specialist in Meaningful Activities (1 Credit)

[HSS 1002](#) Health Support Specialist in Memory Care (1 Credit)

[HSS 1003](#) Health Support Specialist in Culinary Care (1 Credit)

[HSS 1004](#) Health Support Specialist in Physiological Care (1 Credit)

[HSS 1005](#) Health Support Specialist in Psychosocial Care (1 Credit)

[HSS 1006](#) Health Support Specialist in Environmental Services (1 Credit)

PLEASE NOTE: All program plans are preliminary and curriculum may change without notice. Your [catalog of record](#) may have different requirements.

Health Support Specialist - Certificate of Training Course Descriptions

Introduction to the Health Support Specialist

HSS 1000 3.00 credits

This course will provide students with an orientation to aging services role of the Health Support Specialist (HSS). The course will also focus on the history of aging services and the concept of Culture Change and Person Directed Living. Topics will include; implementing person directed living in the health care setting and participation in a mentorship and apprenticeship model of training. Effective communication skills needed to work with families, residents, and other healthcare workers will be explored. This course will provide an introduction to the computer skills used for the HSS curriculum. (Prerequisite: Acceptance into the program)

Health Support Specialist in Meaningful Activities

HSS 1001 1.00 credits

This activity course will provide direct caregivers with the fundamental skills, knowledge, and resources for engaging residents in meaningful activity programs, groups, and one to one's during their daily care giving routines. In this course student will also be given the opportunities for residents to engage in activities that meet their needs and interests which will provide quality of life and meaningful living for those living in a healthcare setting. (Prerequisites: Acceptance into the program)

Health Support Specialist in Memory Care

HSS 1002 1.00 credits

This course will explore the aging process as it relates to the resident who has memory loss and/or dementia related diagnosis. Topics will include; changes affecting communication skills and daily routines, recognizing common behaviors associated with memory loss, and implementing behavior interventions. The course will also introduce the student to methods for involving the family in decisions that provide purposeful living for the resident. (Prerequisites: Acceptance into program)

Health Support Specialist in Culinary Care

HSS 1003 1.00 credits

This course will provide the student with basic culinary information that will help them purchase, plan, prepare and deliver a nutritionally adequate diet for the resident. Principles of infection control and basic nutrition will also be covered. (Prerequisites: Acceptance into the program)

Health Support Specialist in Physiological Care

HSS 1004 1.00 credits

This course introduces the student to the basic body structure and function during the aging process. Each body system is explored for the influences and implication of aging, common disorders, completion of body functions and common disease processes. (Prerequisites: Acceptance into the program)

Health Support Specialist in Psychosocial Care

HSS 1005 1.00 credits

In this course student will develop greater awareness of the psychosocial and spiritual impact of aging and end-of-life care. Losses resulting from aging extend much deeper, are more challenging to measure and thus often go unnoticed or unattended. Students will examine the emotional, social and spiritual dimensions of holistic care as a HSS and how each can be influenced by transition and loss. Students will also explore ways to identify and support individual and family needs in each of these dimensions. (Prerequisites: Acceptance into the program)

Health Support Specialist in Environmental Services

HSS 1006 1.00 credits

This course will cover the basics in providing a clean and safe environment. Topics include basic housekeeping practices, laundering procedures and simple maintenance tasks required within the guidelines of facility policies and procedures and comply with OSHA, state and federal regulations.
(Prerequisites: Acceptance into the program)

Health Unit Coordinator Department Overview

You will be ready to move into the job market as soon as you complete this short, intensive program. The Health Unit Coordinator certificate program is designed to prepare students for careers in health care facilities that require a wide range of office and communication skills. Health Unit Coordinators (HUC) keeps the engine of health care facility running smoothly. They typically collaborate with other health professionals in doctors' offices, clinics, hospitals, labs and other organizations, and would benefit from being familiar with insurance rules, billing practices and hospital or lab processes.

Our classes emphasize the importance of effective communication skills both in person and by phone with clients/patients, visitors, health care team members and ancillary departments. Experienced instructors offer plenty of personal attention to each student. You will have the opportunity for a field training experience at a healthcare facility and this program will also help prepare you for the National Association of Health Unit Coordinators certification exam.

This program was also designed to offer students a pathway to advance their academic career in other medical fields.

Student Background Studies :

Minnesota law requires that any person who provides services that involve direct contact with patients and residents at a health care or child care facility licensed by the Minnesota Department of Health have a background study conducted by the state. An individual who is disqualified from having direct patient contact as a result of the background study, and whose disqualification is not set aside by the Commissioner of Health, will not be permitted to participate in a clinical placement in a Minnesota licensed health care or child care facility. Failure to participate in a clinical placement required by the academic program could result in ineligibility to qualify for a degree in that program.

Department Faculty

Laura Attenberger

Health Unit Coordinator Degrees

Health Unit Coordinator Certificate

Health Unit Coordinator

Certificate • 16 Credits

CERT2318/CERT3313



Degree Description

You will be ready to move into the job market as soon as you complete this short, intensive program. The Health Unit Coordinator certificate program is designed to prepare students for careers in health care facilities that require a wide range of office and communication skills. Health Unit Coordinators (HUC) keeps the engine of health care facility running smoothly. They typically collaborate with other health professionals in doctors' offices, clinics, hospitals, labs and other organizations, and would benefit from being familiar with insurance rules, billing practices and hospital or lab processes.

Admission Dates: Fall and Spring Semester

Offered on the Faribault and North Mankato Campuses

The course requirements listed below are specific to the 2013-2014 school year. If you need to view the program from previous years view our [Catalog Archive](#).

This credential is part of the Health Unit Coordinator department. [See the Health Unit Coordinator department page for more details](#)

Required Technical Courses (4 Courses)

Complete all of the following courses:

- [HC 1000](#) Medical Terminology (3 Credits)
- [HC 1500](#) Healthcare Foundation: Introduction to Health Careers (1 - 3 Credits)
- [HC 2930](#) Introduction to Health Care/Health Information (4 Credits)
- [HUCF1201](#) Health Unit Coordinator Procedures (3 Credits)

(1 Course)

- [HUCF1200](#) Health Unit Coordinator Fundamentals (2 Credits)

(1 Course)

- [HLTH1954](#) Safety (1 Credit)
And
[HUCF1200](#) Health Unit Coordinator Fundamentals (2 Credits)

PLEASE NOTE: All program plans are preliminary and curriculum may change without notice. Your [catalog of record](#) may have different requirements.

Health Unit Coordinator - Certificate of Training Course Descriptions**Medical Terminology****HC 1000 3.00 credits**

This course will be a study of the language used in the health care delivery system. The course presents component medical word parts and their use in building and interpreting medical terminology related to each body system. Spelling, pronunciation and usage of medical terminology will be emphasized. (Prerequisites: None)

Healthcare Foundation: Introduction to Health Careers**HC 1500 1 - 3 credits**

This course will focus on the requirements needed by healthcare workers to effectively work in a variety of healthcare settings with a diverse population of clients. Students will explore workplace skills such as accountability and responsibility, standard of dress, workplace behavior, approaches to assist clients, and expectations of teams and team members. Also included is discussion about how healthcare workers can impact the quality of health care and balance their work and personal life to maintain personal wellness. In addition, students will examine the emotional, spiritual, and social needs of clients as well as the type of care needed by different populations. The course also provides a framework for healthcare workers to interact with diverse clients and staff. Included are belief systems, cultural practices, and respect and sensitivity to cultural, gender, and age issues. (Prerequisite: None)

Introduction to Health Care/Health Information**HC 2930 4.00 credits**

This course reviews the evolution of health care and the health insurance industry. The course will introduce the types of healthcare facilities and discusses concepts of healthcare finance. The student will gain knowledge of the major types of healthcare insurance, medical record systems, confidentiality, and the legal aspects of medical records and health care. The course reviews medical documentation and the standardization of forms used in the health record and will review both manual and electronic medical records (EMR) and how each provides the documentation of care provided to patients. (Prerequisites: None)

Health Unit Coordinator Procedures**HUCF1201 3.00 credits**

This course expands on the role and job duties of the Health Unit Coordinator. Students will work with medical terminology and information necessary to comprehend and process a variety of orders within a health care setting. Examples of various kinds of orders are studied and many opportunities for practicing procedures is provided. Interaction with the patient chart and the Electronic Health Record continue to be explored, and multiple types of entries are practiced by students. Also, an overview of basic anatomy as well as disease and disorders will be covered to enhance understanding of orders and other elements of working in a health care setting. This course will focus on preparing students for certification through the National Association of Health Unity Coordinators. (Prerequisite: None)

Safety**HLTH1954 1.00 credits**

This course includes basic OSHA safety standards. Hearing protection, eye protection, back injuries, lockout/tagout procedures, Hazard Communication standard, bloodborne pathogens, and substance abuse in the workplace are examples of topics covered in this course. The consequences of disregarding safety practices are explored. This course is appropriate for individuals who may be entering a new

Health Unit Coordinator Fundamentals**HUCF1200 2.00 credits**

This course includes the study of health care facility office and communication skills for nonclinical functions. Information about working with nursing and medical staff, other department staff, patients and visitors to contribute to the patients'/clients'/residents' care and well being is emphasized. Communication of many kinds, including telephone, written, electronic, and interpersonal is a focus of the course. Students

vocation. The topics covered include items from the health care realm to items concerning business, manufacturing, and industrial issues. (Prerequisite: None)

will also learn about clerical support duties such as typing, scheduling, faxing, and using the computer. Chart creation and interaction are also explored, both in paper format and in the Electronic Health Record. (Prerequisite: None)

Health Unit Coordinator Fundamentals

HUCF1200 2.00 credits

This course includes the study of health care facility office and communication skills for nonclinical functions. Information about working with nursing and medical staff, other department staff, patients and visitors to contribute to the patients'/clients'/residents' care and well being is emphasized. Communication of many kinds, including telephone, written, electronic, and interpersonal is a focus of the course. Students will also learn about clerical support duties such as typing, scheduling, faxing, and using the computer. Chart creation and interaction are also explored, both in paper format and in the Electronic Health Record. (Prerequisite: None)

Heating, Ventilation, Air Conditioning, Refrigeration Department Overview

Trained, highly skilled personnel are needed for the exciting new technological demands of the residential/commercial refrigeration and heating, ventilation, air conditioning industry. Independent and critical thinking men and women instilled with troubleshooting and electrical control circuit skills are vital for the future installation and servicing of HVAC/R equipment. This program is designed to prepare these individuals for entry-level positions in the HVAC/R field.

To participate in this program, you should have a strong mechanical aptitude, strong math skills and enjoy problem solving.

This career field is not as sensitive to economic times because maintenance of existing systems and installation of more energy-efficient systems make up a large part of the duties. HVAC/R graduates are in high demand due to a shortage of qualified technicians.

Core Competencies

1. Test electrical circuits
2. Build or repair a refrigeration system
3. Conduct testing of different heating systems
4. Recover system refrigerants
5. Identify electrical, heating, and refrigeration components

Department Faculty

Todd Huxford, Jay Schmit

Heating, Ventilation, Air Conditioning, Refrigeration Degrees

Heating, Ventilation, Air Conditioning/Refrigeration AAS Degree
Heating, Ventilation, Air Cond/Refrig - Foundation Diploma
Heating, Ventilation, Air Conditioning/Refrigeration - Advanced Diploma
Heating, Vent., Air Cond./Refrigeration (Refrigeration Cert) Certificate
Heating, Ventilation, Air Cond/Refrigeration (Heating Cert) Certificate

Heating, Ventilation, Air Conditioning/Refrigeration

A.A.S. Degree • 72 Credits

AAS 3456



Degree Description

Trained, highly skilled personnel are needed for the exciting new technological demands of the residential/commercial refrigeration and heating, ventilation, air conditioning industry. Independent and critical thinking men and women instilled with troubleshooting and electrical control circuit skills are vital for the future installation and servicing of HVAC/R equipment. The HVAC/R program at SCC is designed to prepare these individuals for entry-level positions in the HVAC/R field.

To participate in the program, you should have a strong mechanical aptitude, strong math skills and enjoy problem solving.

Admission Dates: Fall and Spring Semester

Offered on the North Mankato Campus

The course requirements listed below are specific to the 2013-2014 school year. If you need to view the program from previous years view our [Catalog Archive](#).

This credential is part of the Heating, Ventilation, Air Conditioning, Refrigeration department. [See the Heating, Ventilation, Air Conditioning, Refrigeration department page for more details](#)

Required Technical Courses: (16 Courses)

Complete all of the following courses:

- [HVAC2000](#) Electrical Circuits (2 Credits)
- [HVAC2010](#) IPH Motors and Auxiliary Controls (2 Credits)
- [HVAC2100](#) Refrigeration Theory (2 Credits)
- [HVAC2110](#) Refrigeration Controls (2 Credits)
- [HVAC2120](#) Testing Refrigeration Systems (2 Credits)
- [HVAC2205](#) Coolers/Freezers Electrical Systems & Components (3 Credits)
- [HVAC2215](#) Coolers/Freezers Refrigeration Diagnostics & Operations (3 Credits)
- [HVAC2220](#) Commercial Ice Makers (3 Credits)
- [HVAC2230](#) Commercial Alternative Systems (1 Credit)
- [HVAC2240](#) Central Air Conditioning (2 Credits)
- [HVAC2251](#) Brazing (2 Credits)
- [HVAC2301](#) Indoor Air Quality (1 Credit)
- [HVAC2310](#) Hydronic Heat (2 Credits)
- [HVAC2320](#) Gas Heat (3 Credits)
- [HVAC2325](#) Commercial Package Heat/Cool Units (2 Credits)
- [HVAC2340](#) Sheet Metal Ductwork Fabrication (3 Credits)

Other Elective Credits (3 Credits)

Technical Courses- Select three credits from any technical courses in consultation with advisor/faculty.

PLEASE NOTE: All program plans are preliminary and curriculum may change without notice. Your [catalog of record](#) may have different requirements.

Required Technical Electives (19 Credits)

Complete 19 credits from the following courses:

- [HLTH1950](#) CPR (1 Credit)
- [HVAC2410](#) Advanced Central Air Conditioning Lab II (2 Credits)
- [HVAC2420](#) Air Conditioning Internship I (1 Credit)
- [HVAC2430](#) Air Conditioning Internship II (2 Credits)
- [HVAC2440](#) Advanced Refrigeration Lab I (1 Credit)
- [HVAC2450](#) Advanced Refrigeration Lab II (2 Credits)
- [HVAC2460](#) Refrigeration Internship I (1 Credit)
- [HVAC2470](#) Refrigeration Internship II (2 Credits)
- [HVAC2500](#) Advance Heating Lab I (1 Credit)
- [HVAC2510](#) Advanced Heating Lab II (2 Credits)
- [HVAC2520](#) Heating Internship I (1 Credit)
- [HLTH1952](#) First Aid (1 Credit)
- [HVAC2530](#) Heating Internship II (2 Credits)
- [HLTH1954](#) Safety (1 Credit)
- [MKT 1800](#) Introduction to Sales (3 Credits)
- [QTEC2000](#) Employment Search Skills (2 Credits)
- [HVAC1000](#) Alternative Refrigeration Systems Lab I (1 Credit)
- [HVAC1200](#) Alternative Refrigeration Systems Lab II (2 Credits)
- [HVAC2330](#) Alternative Heating Systems (2 Credits)
- [HVAC2400](#) Advance Central A/C Lab 1 (1 Credit)

Required Liberal Arts and Sciences

To complete an AAS Degree, students must complete 15 MnTC credits from 3 of the 10 MnTC Goal Areas.

Heating, Ventilation, Air Conditioning/Refrigeration - Associate of Applied Science Degree Course Descriptions**Electrical Circuits****HVAC2000 2.00 credits**

This is an introductory course designed to help students understand the relationships of electricity. Electrical units, terms, formulas, and electrical schematics are covered. (Prerequisites: None)

IPH Motors and Auxiliary Controls**HVAC2010 2.00 credits**

The course will introduce the student to the different types of single-phase and three phase AC motors used on HVAC/R equipment. Motor starting devices and motor protection devices for single-phase motors will also be covered in depth. From an electrical controls schematic the student will connect and wire motors in start-stop circuits, reversing circuits and three phase circuits. The student will learn to electrically troubleshoot motors and motor control circuits utilizing motor wiring schematics. To be successful in this class the student will need to be enrolled in the HVAC program and be in their second or third semester. (Prerequisites: None)

Refrigeration Theory**HVAC2100 2.00 credits**

This course introduces the students to the refrigeration system, how it works, and the relationship between pressure and temperatures. We will discuss the reasons for EPA testing, refrigeration terminology, troubleshooting, and the proper handling of refrigerants. (Prerequisites: None)

Refrigeration Controls**HVAC2110 2.00 credits**

This course covers controls found in both household and commercial refrigeration systems. The functions and operation of these controls will be discussed along with proper troubleshooting procedures. This course will be offered concurrently with refrigeration theory and electrical circuits. (Prerequisites: None)

Testing Refrigeration Systems**HVAC2120 2.00 credits**

This course will cover analyzing, troubleshooting and testing of both the electrical and refrigeration systems. Safety will be stressed throughout this course. This course will be offered concurrently with refrigeration controls. (Prerequisites: None)

Coolers/Freezers Electrical Systems & Components**HVAC2205 3.00 credits**

This course will cover both commercial coolers and freezers. The electrical components that are used in commercial coolers and freezers will be studied, analyzed, operated, and tested. A large portion of the class will be designated to the drawing and understanding of wiring schematics for the purpose of troubleshooting electrical failures. Proper safety and troubleshooting techniques will be followed. To be successful in this course, you should have knowledge in electrical circuits, refrigeration theory, and refrigeration controls. (Prerequisite: HVAC 2120)

Coolers/Freezers Refrigeration Diagnostics & Operations**HVAC2215 3.00 credits**

This course will cover both commercial coolers and freezers. We will discuss the operation of the refrigeration sealed

Commercial Ice Makers**HVAC2220 3.00 credits**

This course covers commercial ice makers used in the industry today. The electrical, mechanical and water systems

system and analyze how to diagnose system failures and their causes. The student will learn the proper way to recover and charge a commercial refrigeration unit. The students will study and follow EPA regulations regarding the handling of refrigerants. Proper safety and troubleshooting techniques will be followed. To be successful in this course, you should have knowledge in electrical circuits, refrigeration theory, and controls. (Prerequisite: HVAC 2120)

Commercial Alternative Systems

HVAC2230 1.00 credits

This course will take a look at commercial refrigeration systems found in the Mankato area, along with the companies that service them. The class will take field trips to local businesses and service companies to see how they operate. To be successful in this course, you should have an understanding of the refrigeration sealed system components and how they work. (Prerequisites: None)

Brazing

HVAC2251 2.00 credits

This course covers brazing equipment and materials. Students will be introduced to the soldering and brazing process, terms, and personal safety. (Prerequisites: None)

Hydronic Heat

HVAC2310 2.00 credits

This course covers systems that utilize fluid for the transfer of heat known as hydronic heating. The electrical and mechanical systems will be studied and analyzed along with troubleshooting system fluid problems, air infiltration and proper operating pressures. The students will identify fluid control components, and demonstrate knowledge of each component's purpose in the lab. To be successful in this class the student will need to be enrolled in the HVAC program and be in their second or third semester. (Prerequisites: None)

Commercial Package Heat/Cool Units

HVAC2325 2.00 credits

This course covers the different commercial packaged heating and cooling systems found in residential, commercial and industrial applications. The electrical, mechanical systems will be studied and analyzed along with troubleshooting and safety procedures. The principle and operation of economizers and their controls will be discussed in class. The student will then take this knowledge and apply it in the lab. To be successful in this class the student will need to be enrolled in the HVAC program and be in their second or third semester. (Prerequisites: None)

will be studied, analyzed, connected and operated. The students will study proper troubleshooting and safety procedures. The students will then apply this knowledge when testing the electrical, mechanical and water systems. To be successful in this course, you should have knowledge in electrical circuits, refrigeration theory, controls and refrigeration sealed systems. (Prerequisites: None)

Central Air Conditioning

HVAC2240 2.00 credits

This course covers the different central air conditioning systems found in residential and light commercial applications today. The electrical and mechanical systems will be studied and analyzed along with troubleshooting and safety procedures. The students will then apply this knowledge by using proper troubleshooting techniques for testing electrical and mechanical operations in the lab. To be successful in this class the student will need to be enrolled in the HVAC program and be in their second or third semester. (Prerequisites: None)

Indoor Air Quality

HVAC2301 1.00 credits

This course covers equipment that deals with today's problem with indoor air quality. Students will study, analyze the causes of poor IAQ in homes and the work place. Each student will give an oral report on a topic picked by the instructor. (Prerequisites: None)

Gas Heat

HVAC2320 3.00 credits

This course covers the forced air gas heating systems found in residential and light commercial applications. The electrical and mechanical systems will be studied and analyzed along with troubleshooting and safety procedures. The students will then apply this knowledge by using proper troubleshooting techniques for testing electrical and mechanical operations in the lab. To be successful in this class the student should take HVAC 2000 and HVAC 2100 before or concurrent. (Prerequisite: None)

Sheet Metal Ductwork Fabrication

HVAC2340 3.00 credits

The course will introduce the student to the layout and fabrication of sheet metal ductwork in both commercial and residential applications. The student will fabricate fittings including reducers, transitions, takeoffs, ogee offsets and radius elbows. Residential duct design and sizing methods will be discussed along with heat loss/heat gain calculations with related computer software applications. The student will be exposed to blue print reading and related specification books. (Prerequisites: None)

CPR

HLTH1950 1.00 credits

This course covers the skills of infant, child and adult single and two rescue CPR as well as relief of foreign body airway obstruction procedures for infant, child and adult. Automated external defibrillators, bag-valve masks and pocket masks are also used. Signs and symptoms of stroke and heart attack are also discussed. This course meets the criteria of the American Heart Association 2010 Guidelines for CPR and ECC.

Air Conditioning Internship I

HVAC2420 1.00 credits

This course covers air conditioning work related experiences. Each student taking this course will be required to fill-out an internship experience worksheet. Students will be repairing equipment in the shop as well as in the customer's home. This is under the guidance of the employer. To be successful in this course, you must have knowledge in electrical circuits, refrigeration theory, controls, refrigeration sealed systems or concurrently taking HVAC 2240. (Prerequisites: None)

Advanced Refrigeration Lab I

HVAC2440 1.00 credits

This course covers all aspects of today's refrigeration systems. This course is designed for students who want more hands-on training. The students will repair, replace and troubleshoot different types of refrigeration systems. EPA regulations will be followed. To be successful in this course, you must be knowledgeable in the following areas: electrical circuits, refrigeration theory, controls, and sealed systems. (Prerequisites: None)

Refrigeration Internship I

HVAC2460 1.00 credits

This course covers household or commercial refrigeration work related experiences. Each student taking this course will be required to fill-out an internship experience worksheet. Students will be repairing equipment in the shop as well as in the customer's home. This is under the guidance of the employer. In order to be successful in this course, you must be knowledgeable in the areas of electrical circuits, refrigeration theory, controls, and sealed systems. (Prerequisites: None)

Advance Heating Lab I

HVAC2500 1.00 credits

This course is designed to give the student a more hands on

Advanced Central Air Conditioning Lab II

HVAC2410 2.00 credits

This course is designed to give the student a more hands on learner guided course work. The student will be required to work on additional lab projects provided by the instructor, industry or the student themselves. Manufacturer instillation guides will be studied and detailed final project will be handed in. The student will practice troubleshooting techniques and get involved in helping fellow students in the lab area to sharpen their communication skills. To be successful in this class the student will need to be enrolled in the HVAC program, be in their second or third semester and take HVAC 2240 before or concurrent. (Prerequisites: None) ,

Air Conditioning Internship II

HVAC2430 2.00 credits

This course covers air conditioning work related experiences. Each student taking this course will be required to fill-out an internship experience worksheet. Students will be repairing equipment in the shop as well as in the customer's home. This is under the guidance of the employer. To be successful in this course, you must have knowledge in electrical circuits, refrigeration theory, controls, refrigeration sealed systems or concurrently taking HVAC 2240. (Prerequisites: None)

Advanced Refrigeration Lab II

HVAC2450 2.00 credits

This course covers all aspects of today's refrigeration systems. This course is designed for students who want more hands-on training. The students will repair, replace and troubleshoot different types of refrigeration systems. EPA regulations will be followed. To be successful in this course, you must be knowledgeable in the following areas: electrical circuits, refrigeration theory, controls, and sealed systems. (Prerequisites: None)

Refrigeration Internship II

HVAC2470 2.00 credits

This course covers household or commercial refrigeration work related experiences. Each student taking this course will be required to fill-out an internship experience worksheet. Students will be repairing equipment in the shop as well as in the customer's home. This is under the guidance of the employer. In order to be successful in this course, you must be knowledgeable in the areas of electrical circuits, refrigeration theory, controls and sealed systems. (Prerequisites: None)

Advanced Heating Lab II

HVAC2510 2.00 credits

This course is designed to give the student a more hands on

learner guided course work. The student will be required to work on additional lab projects provided by the instructor, industry or the student themselves. Manufacturer instillation guides will be studied and detailed final project will be handed in. The student will practice troubleshooting techniques and get involved in helping fellow students in the lab area to sharpen their communication skills. To be successful in this class the student will need to be enrolled in the HVAC program, be in their second or third semester and taken HVAC 2320. (Prerequisites: None)

Heating Internship I

HVAC2520 1.00 credits

This course covers heating work related experiences. Each student taking this course will be required to fill-out an internship experience worksheet. Students will be repairing equipment in the shop as well as in the customer's home. This is under the guidance of the employer. In order to be successful in this course, you must be knowledgeable in electrical circuits, controls or concurrently taking HVAC 2320. (Prerequisites: None)

Heating Internship II

HVAC2530 2.00 credits

This course covers heating work related experiences. Each student taking this course will be required to fill-out an internship experience worksheet. Students will be repairing equipment in the shop as well as in the customer's home. This is under the guidance of the employer. In order to be successful in this course, you must be knowledgeable in electrical circuits, controls or concurrently taking HVAC 2320. (Prerequisites: None)

Introduction to Sales

MKT 1800 3.00 credits

This course serves as a foundation for future sales courses. The instructional approach combines both traditional and innovative presentations of course content that is dependent upon student involvement. The content covers the role of sales, steps of the selling process, the importance of communication skills and a positive attitude. In addition, special attention is devoted throughout the course on how the salesperson is viewed as an ambassador for the company that they represent. (Prerequisite: None)

Alternative Refrigeration Systems Lab I

HVAC1000 1.00 credits

This course covers all types of refrigeration systems, residential and commercial. The course is designed for the student who wants more hands-on training. The student will

learner guided course work. The student will be required to work on additional lab projects provided by the instructor, industry or the student themselves. Manufacturer instillation guides will be studied and a detailed final project will be handed in. The student will practice troubleshooting techniques and get involved in helping fellow students in the lab area to sharpen their communication skills. To be successful in this class the student will need to be enrolled in the HVAC program, be in their second or third semester and have already taken HVAC 2320. (Prerequisites: None)

First Aid

HLTH1952 1.00 credits

This course includes emergency care training for initial treatment of illness and injury. Patient assessment, bleeding control, shock management, soft tissue injury, orthopedic injury, diabetic problems, seizures, poisons, heat exposure, and cold exposure are some of the topics covered in this course. This course is appropriate for anyone who may need to render immediate care. The items covered in the course are just as applicable to an industrial or a business work setting, as they are to a daycare facility, or even at home. (Prerequisite: None).

Safety

HLTH1954 1.00 credits

This course includes basic OSHA safety standards. Hearing protection, eye protection, back injuries, lockout/tagout procedures, Hazard Communication standard, bloodborne pathogens, and substance abuse in the workplace are examples of topics covered in this course. The consequences of disregarding safety practices are explored. This course is appropriate for individuals who may be entering a new vocation. The topics covered include items from the health care realm to items concerning business, manufacturing, and industrial issues. (Prerequisite: None)

Employment Search Skills

OTEC2000 2.00 credits

This course introduces students to a process for developing self-awareness - considering career opportunities, constraints, choices, and consequences - identifying career related goals - and planning of work, education, and related experiences to attain specific career goals. Students will also create job search documents and develop interviewing skills. The students will develop an understanding of and appreciation for the job search process. Students will use Internet and library resources.

Alternative Refrigeration Systems Lab II

HVAC1200 2.00 credits

This course covers all types of refrigeration systems, residential and commercial. The course is designed for the student who wants more hands-on training. The student will

troubleshoot, repair, and replace refrigeration systems. To be successful in this course, you should have knowledge in electrical circuits, refrigeration theory, controls and refrigeration sealed systems. (Prerequisites: None)

Alternative Heating Systems

HVAC2330 2.00 credits

This course covers a variety of alternative heating systems, some of the systems included will be oil heating systems, a variety of electrical heating systems, heat pump systems and alternative fuel sources will be discussed. Electrical and mechanical systems will be explored along with safety, troubleshooting and equipment performance. To be successful in this class the student will need to be enrolled in the HVAC program, be in their second or third semester and have already taken HVAC 2240, and HVAC 2320 or concurrent. (Prerequisites: None)

troubleshoot, repair, and replace refrigeration systems. To be successful in this course, you should have knowledge in electrical circuits, refrigeration theory, controls and refrigeration sealed systems. (Prerequisites: None)

Advance Central A/C Lab 1

HVAC2400 1.00 credits

This course is designed to give the student a more hands on learner guided course work. The student will be required to work on additional lab projects provided by the instructor, industry or the student themselves. Manufacturer instillation guides will be studied and detailed final project will be handed in. The student will practice troubleshooting techniques and get involved in helping fellow students in the lab area to sharpen their communication skills. To be successful in this class the student will need to be enrolled in the HVAC program, be in their second or third semester and take HVAC 2240 before or concurrent. (Prerequisites: None)

Heating, Ventilation, Air Cond/Refrig

Diploma • 44 Credits

DIP 3483



Degree Description

Trained, highly skilled personnel are needed for the exciting new technological demands of the residential/commercial refrigeration and heating, ventilation, air conditioning industry. Independent and critical thinking men and women instilled with troubleshooting and electrical control circuit skills are vital for the future installation and servicing of HVAC/R equipment. The HVAC/R program at SCC is designed to prepare these individuals for entry-level positions in the HVAC/R field.

To participate in the program, you should have a strong mechanical aptitude, strong math skills and enjoy problem solving.

Admission Dates: Fall and Spring Semester

Offered on the North Mankato Campus

The course requirements listed below are specific to the 2013-2014 school year. If you need to view the program from previous years view our [Catalog Archive](#).

This credential is part of the Heating, Ventilation, Air Conditioning, Refrigeration department. [See the Heating, Ventilation, Air Conditioning, Refrigeration department page for more details](#)

Required Technical Courses (16 Courses)

Complete the following courses:

- [HVAC2000](#) Electrical Circuits (2 Credits)
- [HVAC2010](#) IPH Motors and Auxiliary Controls (2 Credits)
- [HVAC2100](#) Refrigeration Theory (2 Credits)
- [HVAC2110](#) Refrigeration Controls (2 Credits)
- [HVAC2120](#) Testing Refrigeration Systems (2 Credits)
- [HVAC2205](#) Coolers/Freezers Electrical Systems & Components (3 Credits)
- [HVAC2215](#) Coolers/Freezers Refrigeration Diagnostics & Operations (3 Credits)
- [HVAC2220](#) Commercial Ice Makers (3 Credits)
- [HVAC2230](#) Commercial Alternative Systems (1 Credit)
- [HVAC2240](#) Central Air Conditioning (2 Credits)
- [HVAC2251](#) Brazing (2 Credits)
- [HVAC2301](#) Indoor Air Quality (1 Credit)
- [HVAC2310](#) Hydronic Heat (2 Credits)
- [HVAC2320](#) Gas Heat (3 Credits)
- [HVAC2325](#) Commercial Package Heat/Cool Units (2 Credits)
- [HVAC2340](#) Sheet Metal Ductwork Fabrication (3 Credits)

Elective Credits (9 Credits)

Technical Courses - Select 9 credits from any HVAC course or MKT 1800.

PLEASE NOTE: All program plans are preliminary and curriculum may change without notice. Your [catalog of record](#) may have different requirements.

Heating, Ventilation, Air Cond/Refrig - Foundation - Diploma of Occupational Proficiency Course Descriptions

Electrical Circuits

HVAC2000 2.00 credits

This is an introductory course designed to help students understand the relationships of electricity. Electrical units, terms, formulas, and electrical schematics are covered. (Prerequisites: None)

IPH Motors and Auxiliary Controls

HVAC2010 2.00 credits

The course will introduce the student to the different types of single-phase and three phase AC motors used on HVAC/R equipment. Motor starting devices and motor protection devices for single-phase motors will also be covered in depth. From an electrical controls schematic the student will connect and wire motors in start-stop circuits, reversing circuits and three phase circuits. The student will learn to electrically troubleshoot motors and motor control circuits utilizing motor wiring schematics. To be successful in this class the student will need to be enrolled in the HVAC program and be in their second or third semester. (Prerequisites: None)

Refrigeration Theory

HVAC2100 2.00 credits

This course introduces the students to the refrigeration system, how it works, and the relationship between pressure and temperatures. We will discuss the reasons for EPA testing, refrigeration terminology, troubleshooting, and the proper handling of refrigerants. (Prerequisites: None)

Refrigeration Controls

HVAC2110 2.00 credits

This course covers controls found in both household and commercial refrigeration systems. The functions and operation of these controls will be discussed along with proper troubleshooting procedures. This course will be offered concurrently with refrigeration theory and electrical circuits. (Prerequisites: None)

Testing Refrigeration Systems

HVAC2120 2.00 credits

This course will cover analyzing, troubleshooting and testing of both the electrical and refrigeration systems. Safety will be stressed throughout this course. This course will be offered concurrently with refrigeration controls. (Prerequisites: None)

Coolers/Freezers Electrical Systems & Components

HVAC2205 3.00 credits

This course will cover both commercial coolers and freezers. The electrical components that are used in commercial coolers and freezers will be studied, analyzed, operated, and tested. A large portion of the class will be designated to the drawing and understanding of wiring schematics for the purpose of troubleshooting electrical failures. Proper safety and troubleshooting techniques will be followed. To be successful in this course, you should have knowledge in electrical circuits, refrigeration theory, and refrigeration controls. (Prerequisite: HVAC 2120)

Coolers/Freezers Refrigeration Diagnostics & Operations

HVAC2215 3.00 credits

This course will cover both commercial coolers and freezers. We will discuss the operation of the refrigeration sealed

Commercial Ice Makers

HVAC2220 3.00 credits

This course covers commercial ice makers used in the industry today. The electrical, mechanical and water systems

system and analyze how to diagnose system failures and their causes. The student will learn the proper way to recover and charge a commercial refrigeration unit. The students will study and follow EPA regulations regarding the handling of refrigerants. Proper safety and troubleshooting techniques will be followed. To be successful in this course, you should have knowledge in electrical circuits, refrigeration theory, and controls. (Prerequisite: HVAC 2120)

Commercial Alternative Systems

HVAC2230 1.00 credits

This course will take a look at commercial refrigeration systems found in the Mankato area, along with the companies that service them. The class will take field trips to local businesses and service companies to see how they operate. To be successful in this course, you should have an understanding of the refrigeration sealed system components and how they work. (Prerequisites: None)

Brazing

HVAC2251 2.00 credits

This course covers brazing equipment and materials. Students will be introduced to the soldering and brazing process, terms, and personal safety. (Prerequisites: None)

Hydronic Heat

HVAC2310 2.00 credits

This course covers systems that utilize fluid for the transfer of heat known as hydronic heating. The electrical and mechanical systems will be studied and analyzed along with troubleshooting system fluid problems, air infiltration and proper operating pressures. The students will identify fluid control components, and demonstrate knowledge of each component's purpose in the lab. To be successful in this class the student will need to be enrolled in the HVAC program and be in their second or third semester. (Prerequisites: None)

Commercial Package Heat/Cool Units

HVAC2325 2.00 credits

This course covers the different commercial packaged heating and cooling systems found in residential, commercial and industrial applications. The electrical, mechanical systems will be studied and analyzed along with troubleshooting and safety procedures. The principle and operation of economizers and their controls will be discussed in class. The student will then take this knowledge and apply it in the lab. To be successful in this class the student will need to be enrolled in the HVAC program and be in their second or third semester. (Prerequisites: None)

will be studied, analyzed, connected and operated. The students will study proper troubleshooting and safety procedures. The students will then apply this knowledge when testing the electrical, mechanical and water systems. To be successful in this course, you should have knowledge in electrical circuits, refrigeration theory, controls and refrigeration sealed systems. (Prerequisites: None)

Central Air Conditioning

HVAC2240 2.00 credits

This course covers the different central air conditioning systems found in residential and light commercial applications today. The electrical and mechanical systems will be studied and analyzed along with troubleshooting and safety procedures. The students will then apply this knowledge by using proper troubleshooting techniques for testing electrical and mechanical operations in the lab. To be successful in this class the student will need to be enrolled in the HVAC program and be in their second or third semester. (Prerequisites: None)

Indoor Air Quality

HVAC2301 1.00 credits

This course covers equipment that deals with today's problem with indoor air quality. Students will study, analyze the causes of poor IAQ in homes and the work place. Each student will give an oral report on a topic picked by the instructor. (Prerequisites: None)

Gas Heat

HVAC2320 3.00 credits

This course covers the forced air gas heating systems found in residential and light commercial applications. The electrical and mechanical systems will be studied and analyzed along with troubleshooting and safety procedures. The students will then apply this knowledge by using proper troubleshooting techniques for testing electrical and mechanical operations in the lab. To be successful in this class the student should take HVAC 2000 and HVAC 2100 before or concurrent. (Prerequisite: None)

Sheet Metal Ductwork Fabrication

HVAC2340 3.00 credits

The course will introduce the student to the layout and fabrication of sheet metal ductwork in both commercial and residential applications. The student will fabricate fittings including reducers, transitions, takeoffs, ogee offsets and radius elbows. Residential duct design and sizing methods will be discussed along with heat loss/heat gain calculations with related computer software applications. The student will be exposed to blue print reading and related specification books. (Prerequisites: None)

Heating, Ventilation, Air Conditioning/Refrigeration

Diploma • 60 Credits

DIP 3472



Degree Description

Trained, highly skilled personnel are needed for the exciting new technological demands of the residential/commercial refrigeration and heating, ventilation, air conditioning industry. Independent and critical thinking men and women instilled with troubleshooting and electrical control circuit skills are vital for the future installation and servicing of HVAC/R equipment. The HVAC/R program at SCC is designed to prepare these individuals for entry-level positions in the HVAC/R field.

To participate in the program, you should have a strong mechanical aptitude, strong math skills and enjoy problem solving.

Admission Dates: Fall and Spring Semester

Offered on the North Mankato Campus

The course requirements listed below are specific to the 2013-2014 school year. If you need to view the program from previous years view our [Catalog Archive](#).

This credential is part of the Heating, Ventilation, Air Conditioning, Refrigeration department. [See the Heating, Ventilation, Air Conditioning, Refrigeration department page for more details](#)

Required Technical Courses (16 Courses)

Complete the following courses:

- [HVAC2000](#) Electrical Circuits (2 Credits)
- [HVAC2010](#) IPH Motors and Auxiliary Controls (2 Credits)
- [HVAC2100](#) Refrigeration Theory (2 Credits)
- [HVAC2110](#) Refrigeration Controls (2 Credits)
- [HVAC2120](#) Testing Refrigeration Systems (2 Credits)
- [HVAC2205](#) Coolers/Freezers Electrical Systems & Components (3 Credits)
- [HVAC2215](#) Coolers/Freezers Refrigeration Diagnostics & Operations (3 Credits)
- [HVAC2220](#) Commercial Ice Makers (3 Credits)
- [HVAC2230](#) Commercial Alternative Systems (1 Credit)
- [HVAC2240](#) Central Air Conditioning (2 Credits)
- [HVAC2251](#) Brazing (2 Credits)
- [HVAC2301](#) Indoor Air Quality (1 Credit)
- [HVAC2310](#) Hydronic Heat (2 Credits)
- [HVAC2320](#) Gas Heat (3 Credits)
- [HVAC2325](#) Commercial Package Heat/Cool Units (2 Credits)
- [HVAC2340](#) Sheet Metal Ductwork Fabrication (3 Credits)

Required Liberal Arts and Sciences (6 Credits)

To complete the Advanced Diploma, students must complete 6 MnTC credits from 2 of the 10 MnTC

Technical Electives (19 Credits)

Complete 19 credits from the following courses:

- [HLTH1950](#) CPR (1 Credit)
- [HVAC2410](#) Advanced Central Air Conditioning Lab II (2 Credits)
- [HVAC2420](#) Air Conditioning Internship I (1 Credit)
- [HVAC2430](#) Air Conditioning Internship II (2 Credits)
- [HVAC2440](#) Advanced Refrigeration Lab I (1 Credit)
- [HVAC2450](#) Advanced Refrigeration Lab II (2 Credits)
- [HVAC2460](#) Refrigeration Internship I (1 Credit)
- [HVAC2470](#) Refrigeration Internship II (2 Credits)
- [HVAC2500](#) Advance Heating Lab I (1 Credit)
- [HVAC2510](#) Advanced Heating Lab II (2 Credits)
- [HVAC2520](#) Heating Internship I (1 Credit)
- [HLTH1952](#) First Aid (1 Credit)
- [HVAC2530](#) Heating Internship II (2 Credits)
- [HLTH1954](#) Safety (1 Credit)
- [MKT 1800](#) Introduction to Sales (3 Credits)
- [QTEC2000](#) Employment Search Skills (2 Credits)
- [HVAC1000](#) Alternative Refrigeration Systems Lab I (1 Credit)
- [HVAC1200](#) Alternative Refrigeration Systems Lab II (2 Credits)
- [HVAC2330](#) Alternative Heating Systems (2 Credits)
- [HVAC2400](#) Advance Central A/C Lab 1 (1 Credit)

PLEASE NOTE: All program plans are preliminary and curriculum may change without notice. Your [catalog of record](#) may have different requirements.

Heating, Ventilation, Air Conditioning/Refrigeration - Advanced - Diploma of Occupational Proficiency Course Descriptions**Electrical Circuits****HVAC2000 2.00 credits**

This is an introductory course designed to help students understand the relationships of electricity. Electrical units, terms, formulas, and electrical schematics are covered. (Prerequisites: None)

IPH Motors and Auxiliary Controls**HVAC2010 2.00 credits**

The course will introduce the student to the different types of single-phase and three phase AC motors used on HVAC/R equipment. Motor starting devices and motor protection devices for single-phase motors will also be covered in depth. From an electrical controls schematic the student will connect and wire motors in start-stop circuits, reversing circuits and three phase circuits. The student will learn to electrically troubleshoot motors and motor control circuits utilizing motor wiring schematics. To be successful in this class the student will need to be enrolled in the HVAC program and be in their second or third semester. (Prerequisites: None)

Refrigeration Theory**HVAC2100 2.00 credits**

This course introduces the students to the refrigeration system, how it works, and the relationship between pressure and temperatures. We will discuss the reasons for EPA testing, refrigeration terminology, troubleshooting, and the proper handling of refrigerants. (Prerequisites: None)

Refrigeration Controls**HVAC2110 2.00 credits**

This course covers controls found in both household and commercial refrigeration systems. The functions and operation of these controls will be discussed along with proper troubleshooting procedures. This course will be offered concurrently with refrigeration theory and electrical circuits. (Prerequisites: None)

Testing Refrigeration Systems**HVAC2120 2.00 credits**

This course will cover analyzing, troubleshooting and testing of both the electrical and refrigeration systems. Safety will be stressed throughout this course. This course will be offered concurrently with refrigeration controls. (Prerequisites: None)

Coolers/Freezers Electrical Systems & Components**HVAC2205 3.00 credits**

This course will cover both commercial coolers and freezers. The electrical components that are used in commercial coolers and freezers will be studied, analyzed, operated, and tested. A large portion of the class will be designated to the drawing and understanding of wiring schematics for the purpose of troubleshooting electrical failures. Proper safety and troubleshooting techniques will be followed. To be successful in this course, you should have knowledge in electrical circuits, refrigeration theory, and refrigeration controls. (Prerequisite: HVAC 2120)

Coolers/Freezers Refrigeration Diagnostics & Operations**HVAC2215 3.00 credits**

This course will cover both commercial coolers and freezers. We will discuss the operation of the refrigeration sealed

Commercial Ice Makers**HVAC2220 3.00 credits**

This course covers commercial ice makers used in the industry today. The electrical, mechanical and water systems

system and analyze how to diagnose system failures and their causes. The student will learn the proper way to recover and charge a commercial refrigeration unit. The students will study and follow EPA regulations regarding the handling of refrigerants. Proper safety and troubleshooting techniques will be followed. To be successful in this course, you should have knowledge in electrical circuits, refrigeration theory, and controls. (Prerequisite: HVAC 2120)

Commercial Alternative Systems

HVAC2230 1.00 credits

This course will take a look at commercial refrigeration systems found in the Mankato area, along with the companies that service them. The class will take field trips to local businesses and service companies to see how they operate. To be successful in this course, you should have an understanding of the refrigeration sealed system components and how they work. (Prerequisites: None)

Brazing

HVAC2251 2.00 credits

This course covers brazing equipment and materials. Students will be introduced to the soldering and brazing process, terms, and personal safety. (Prerequisites: None)

Hydronic Heat

HVAC2310 2.00 credits

This course covers systems that utilize fluid for the transfer of heat known as hydronic heating. The electrical and mechanical systems will be studied and analyzed along with troubleshooting system fluid problems, air infiltration and proper operating pressures. The students will identify fluid control components, and demonstrate knowledge of each component's purpose in the lab. To be successful in this class the student will need to be enrolled in the HVAC program and be in their second or third semester. (Prerequisites: None)

Commercial Package Heat/Cool Units

HVAC2325 2.00 credits

This course covers the different commercial packaged heating and cooling systems found in residential, commercial and industrial applications. The electrical, mechanical systems will be studied and analyzed along with troubleshooting and safety procedures. The principle and operation of economizers and their controls will be discussed in class. The student will then take this knowledge and apply it in the lab. To be successful in this class the student will need to be enrolled in the HVAC program and be in their second or third semester. (Prerequisites: None)

will be studied, analyzed, connected and operated. The students will study proper troubleshooting and safety procedures. The students will then apply this knowledge when testing the electrical, mechanical and water systems. To be successful in this course, you should have knowledge in electrical circuits, refrigeration theory, controls and refrigeration sealed systems. (Prerequisites: None)

Central Air Conditioning

HVAC2240 2.00 credits

This course covers the different central air conditioning systems found in residential and light commercial applications today. The electrical and mechanical systems will be studied and analyzed along with troubleshooting and safety procedures. The students will then apply this knowledge by using proper troubleshooting techniques for testing electrical and mechanical operations in the lab. To be successful in this class the student will need to be enrolled in the HVAC program and be in their second or third semester. (Prerequisites: None)

Indoor Air Quality

HVAC2301 1.00 credits

This course covers equipment that deals with today's problem with indoor air quality. Students will study, analyze the causes of poor IAQ in homes and the work place. Each student will give an oral report on a topic picked by the instructor. (Prerequisites: None)

Gas Heat

HVAC2320 3.00 credits

This course covers the forced air gas heating systems found in residential and light commercial applications. The electrical and mechanical systems will be studied and analyzed along with troubleshooting and safety procedures. The students will then apply this knowledge by using proper troubleshooting techniques for testing electrical and mechanical operations in the lab. To be successful in this class the student should take HVAC 2000 and HVAC 2100 before or concurrent. (Prerequisite: None)

Sheet Metal Ductwork Fabrication

HVAC2340 3.00 credits

The course will introduce the student to the layout and fabrication of sheet metal ductwork in both commercial and residential applications. The student will fabricate fittings including reducers, transitions, takeoffs, ogee offsets and radius elbows. Residential duct design and sizing methods will be discussed along with heat loss/heat gain calculations with related computer software applications. The student will be exposed to blue print reading and related specification books. (Prerequisites: None)

CPR

HLTH1950 1.00 credits

This course covers the skills of infant, child and adult single and two rescue CPR as well as relief of foreign body airway obstruction procedures for infant, child and adult. Automated external defibrillators, bag-valve masks and pocket masks are also used. Signs and symptoms of stroke and heart attack are also discussed. This course meets the criteria of the American Heart Association 2010 Guidelines for CPR and ECC.

Air Conditioning Internship I

HVAC2420 1.00 credits

This course covers air conditioning work related experiences. Each student taking this course will be required to fill-out an internship experience worksheet. Students will be repairing equipment in the shop as well as in the customer's home. This is under the guidance of the employer. To be successful in this course, you must have knowledge in electrical circuits, refrigeration theory, controls, refrigeration sealed systems or concurrently taking HVAC 2240. (Prerequisites: None)

Advanced Refrigeration Lab I

HVAC2440 1.00 credits

This course covers all aspects of today's refrigeration systems. This course is designed for students who want more hands-on training. The students will repair, replace and troubleshoot different types of refrigeration systems. EPA regulations will be followed. To be successful in this course, you must be knowledgeable in the following areas: electrical circuits, refrigeration theory, controls, and sealed systems. (Prerequisites: None)

Refrigeration Internship I

HVAC2460 1.00 credits

This course covers household or commercial refrigeration work related experiences. Each student taking this course will be required to fill-out an internship experience worksheet. Students will be repairing equipment in the shop as well as in the customer's home. This is under the guidance of the employer. In order to be successful in this course, you must be knowledgeable in the areas of electrical circuits, refrigeration theory, controls, and sealed systems. (Prerequisites: None)

Advance Heating Lab I

HVAC2500 1.00 credits

This course is designed to give the student a more hands on

Advanced Central Air Conditioning Lab II

HVAC2410 2.00 credits

This course is designed to give the student a more hands on learner guided course work. The student will be required to work on additional lab projects provided by the instructor, industry or the student themselves. Manufacturer instillation guides will be studied and detailed final project will be handed in. The student will practice troubleshooting techniques and get involved in helping fellow students in the lab area to sharpen their communication skills. To be successful in this class the student will need to be enrolled in the HVAC program, be in their second or third semester and take HVAC 2240 before or concurrent. (Prerequisites: None) ,

Air Conditioning Internship II

HVAC2430 2.00 credits

This course covers air conditioning work related experiences. Each student taking this course will be required to fill-out an internship experience worksheet. Students will be repairing equipment in the shop as well as in the customer's home. This is under the guidance of the employer. To be successful in this course, you must have knowledge in electrical circuits, refrigeration theory, controls, refrigeration sealed systems or concurrently taking HVAC 2240. (Prerequisites: None)

Advanced Refrigeration Lab II

HVAC2450 2.00 credits

This course covers all aspects of today's refrigeration systems. This course is designed for students who want more hands-on training. The students will repair, replace and troubleshoot different types of refrigeration systems. EPA regulations will be followed. To be successful in this course, you must be knowledgeable in the following areas: electrical circuits, refrigeration theory, controls, and sealed systems. (Prerequisites: None)

Refrigeration Internship II

HVAC2470 2.00 credits

This course covers household or commercial refrigeration work related experiences. Each student taking this course will be required to fill-out an internship experience worksheet. Students will be repairing equipment in the shop as well as in the customer's home. This is under the guidance of the employer. In order to be successful in this course, you must be knowledgeable in the areas of electrical circuits, refrigeration theory, controls and sealed systems. (Prerequisites: None)

Advanced Heating Lab II

HVAC2510 2.00 credits

This course is designed to give the student a more hands on

learner guided course work. The student will be required to work on additional lab projects provided by the instructor, industry or the student themselves. Manufacturer instillation guides will be studied and detailed final project will be handed in. The student will practice troubleshooting techniques and get involved in helping fellow students in the lab area to sharpen their communication skills. To be successful in this class the student will need to be enrolled in the HVAC program, be in their second or third semester and taken HVAC 2320. (Prerequisites: None)

Heating Internship I

HVAC2520 1.00 credits

This course covers heating work related experiences. Each student taking this course will be required to fill-out an internship experience worksheet. Students will be repairing equipment in the shop as well as in the customer's home. This is under the guidance of the employer. In order to be successful in this course, you must be knowledgeable in electrical circuits, controls or concurrently taking HVAC 2320. (Prerequisites: None)

Heating Internship II

HVAC2530 2.00 credits

This course covers heating work related experiences. Each student taking this course will be required to fill-out an internship experience worksheet. Students will be repairing equipment in the shop as well as in the customer's home. This is under the guidance of the employer. In order to be successful in this course, you must be knowledgeable in electrical circuits, controls or concurrently taking HVAC 2320. (Prerequisites: None)

Introduction to Sales

MKT 1800 3.00 credits

This course serves as a foundation for future sales courses. The instructional approach combines both traditional and innovative presentations of course content that is dependent upon student involvement. The content covers the role of sales, steps of the selling process, the importance of communication skills and a positive attitude. In addition, special attention is devoted throughout the course on how the salesperson is viewed as an ambassador for the company that they represent. (Prerequisite: None)

Alternative Refrigeration Systems Lab I

HVAC1000 1.00 credits

This course covers all types of refrigeration systems, residential and commercial. The course is designed for the student who wants more hands-on training. The student will

learner guided course work. The student will be required to work on additional lab projects provided by the instructor, industry or the student themselves. Manufacturer instillation guides will be studied and a detailed final project will be handed in. The student will practice troubleshooting techniques and get involved in helping fellow students in the lab area to sharpen their communication skills. To be successful in this class the student will need to be enrolled in the HVAC program, be in their second or third semester and have already taken HVAC 2320. (Prerequisites: None)

First Aid

HLTH1952 1.00 credits

This course includes emergency care training for initial treatment of illness and injury. Patient assessment, bleeding control, shock management, soft tissue injury, orthopedic injury, diabetic problems, seizures, poisons, heat exposure, and cold exposure are some of the topics covered in this course. This course is appropriate for anyone who may need to render immediate care. The items covered in the course are just as applicable to an industrial or a business work setting, as they are to a daycare facility, or even at home. (Prerequisite: None).

Safety

HLTH1954 1.00 credits

This course includes basic OSHA safety standards. Hearing protection, eye protection, back injuries, lockout/tagout procedures, Hazard Communication standard, bloodborne pathogens, and substance abuse in the workplace are examples of topics covered in this course. The consequences of disregarding safety practices are explored. This course is appropriate for individuals who may be entering a new vocation. The topics covered include items from the health care realm to items concerning business, manufacturing, and industrial issues. (Prerequisite: None)

Employment Search Skills

OTEC2000 2.00 credits

This course introduces students to a process for developing self-awareness - considering career opportunities, constraints, choices, and consequences - identifying career related goals - and planning of work, education, and related experiences to attain specific career goals. Students will also create job search documents and develop interviewing skills. The students will develop an understanding of and appreciation for the job search process. Students will use Internet and library resources.

Alternative Refrigeration Systems Lab II

HVAC1200 2.00 credits

This course covers all types of refrigeration systems, residential and commercial. The course is designed for the student who wants more hands-on training. The student will

troubleshoot, repair, and replace refrigeration systems. To be successful in this course, you should have knowledge in electrical circuits, refrigeration theory, controls and refrigeration sealed systems. (Prerequisites: None)

Alternative Heating Systems

HVAC2330 2.00 credits

This course covers a variety of alternative heating systems, some of the systems included will be oil heating systems, a variety of electrical heating systems, heat pump systems and alternative fuel sources will be discussed. Electrical and mechanical systems will be explored along with safety, troubleshooting and equipment performance. To be successful in this class the student will need to be enrolled in the HVAC program, be in their second or third semester and have already taken HVAC 2240, and HVAC 2320 or concurrent. (Prerequisites: None)

troubleshoot, repair, and replace refrigeration systems. To be successful in this course, you should have knowledge in electrical circuits, refrigeration theory, controls and refrigeration sealed systems. (Prerequisites: None)

Advance Central A/C Lab 1

HVAC2400 1.00 credits

This course is designed to give the student a more hands on learner guided course work. The student will be required to work on additional lab projects provided by the instructor, industry or the student themselves. Manufacturer instillation guides will be studied and detailed final project will be handed in. The student will practice troubleshooting techniques and get involved in helping fellow students in the lab area to sharpen their communication skills. To be successful in this class the student will need to be enrolled in the HVAC program, be in their second or third semester and take HVAC 2240 before or concurrent. (Prerequisites: None)

Heating, Vent., Air Cond./Refrigeration (Refrigeration Cert)

Certificate • 26 Credits

CERT3461

**Degree Description**

Trained, highly skilled personnel are needed for the exciting new technological demands of the residential/commercial refrigeration and heating, ventilation, air conditioning industry. Independent and critical thinking men and women instilled with troubleshooting and electrical control circuit skills are vital for the future installation and servicing of HVAC/R equipment. The HVAC/R program at SCC is designed to prepare these individuals for entry-level positions in the HVAC/R field.

To participate in the program, you should have a strong mechanical aptitude, strong math skills and enjoy problem solving.

Admission Dates: Fall and Spring Semester

Offered on the North Mankato Campus

The course requirements listed below are specific to the 2013-2014 school year. If you need to view the program from previous years view our [Catalog Archive](#).

This credential is part of the Heating, Ventilation, Air Conditioning, Refrigeration department. [See the Heating, Ventilation, Air Conditioning, Refrigeration department page for more details](#)

Required Technical Courses (12 Courses)

Complete the following courses:

- [HVAC2000](#) Electrical Circuits (2 Credits)
- [HVAC2010](#) IPH Motors and Auxiliary Controls (2 Credits)
- [HVAC2100](#) Refrigeration Theory (2 Credits)
- [HVAC2110](#) Refrigeration Controls (2 Credits)
- [HVAC2120](#) Testing Refrigeration Systems (2 Credits)
- [HVAC2205](#) Coolers/Freezers Electrical Systems & Components (3 Credits)
- [HVAC2215](#) Coolers/Freezers Refrigeration Diagnostics & Operations (3 Credits)
- [HVAC2220](#) Commercial Ice Makers (3 Credits)
- [HVAC2230](#) Commercial Alternative Systems (1 Credit)
- [HVAC2240](#) Central Air Conditioning (2 Credits)
- [HVAC2251](#) Brazing (2 Credits)
- [HVAC2325](#) Commercial Package Heat/Cool Units (2 Credits)

PLEASE NOTE: All program plans are preliminary and curriculum may change without notice. Your [catalog of record](#) may have different requirements.

Heating, Vent., Air Cond./Refrigeration (Refrigeration Cert) - Certificate of Training Course Descriptions**Electrical Circuits****HVAC2000 2.00 credits**

This is an introductory course designed to help students understand the relationships of electricity. Electrical units, terms, formulas, and electrical schematics are covered. (Prerequisites: None)

IPH Motors and Auxiliary Controls**HVAC2010 2.00 credits**

The course will introduce the student to the different types of single-phase and three phase AC motors used on HVAC/R equipment. Motor starting devices and motor protection devices for single-phase motors will also be covered in depth. From an electrical controls schematic the student will connect and wire motors in start-stop circuits, reversing circuits and three phase circuits. The student will learn to electrically troubleshoot motors and motor control circuits utilizing motor wiring schematics. To be successful in this class the student will need to be enrolled in the HVAC program and be in their second or third semester. (Prerequisites: None)

Refrigeration Theory**HVAC2100 2.00 credits**

This course introduces the students to the refrigeration system, how it works, and the relationship between pressure and temperatures. We will discuss the reasons for EPA testing, refrigeration terminology, troubleshooting, and the proper handling of refrigerants. (Prerequisites: None)

Refrigeration Controls**HVAC2110 2.00 credits**

This course covers controls found in both household and commercial refrigeration systems. The functions and operation of these controls will be discussed along with proper troubleshooting procedures. This course will be offered concurrently with refrigeration theory and electrical circuits. (Prerequisites: None)

Testing Refrigeration Systems**HVAC2120 2.00 credits**

This course will cover analyzing, troubleshooting and testing of both the electrical and refrigeration systems. Safety will be stressed throughout this course. This course will be offered concurrently with refrigeration controls. (Prerequisites: None)

Coolers/Freezers Electrical Systems & Components**HVAC2205 3.00 credits**

This course will cover both commercial coolers and freezers. The electrical components that are used in commercial coolers and freezers will be studied, analyzed, operated, and tested. A large portion of the class will be designated to the drawing and understanding of wiring schematics for the purpose of troubleshooting electrical failures. Proper safety and troubleshooting techniques will be followed. To be successful in this course, you should have knowledge in electrical circuits, refrigeration theory, and refrigeration controls. (Prerequisite: HVAC 2120)

Coolers/Freezers Refrigeration Diagnostics & Operations**HVAC2215 3.00 credits**

This course will cover both commercial coolers and freezers. We will discuss the operation of the refrigeration sealed system and analyze how to diagnose system failures and their

Commercial Ice Makers**HVAC2220 3.00 credits**

This course covers commercial ice makers used in the industry today. The electrical, mechanical and water systems will be studied, analyzed, connected and operated. The

causes. The student will learn the proper way to recover and charge a commercial refrigeration unit. The students will study and follow EPA regulations regarding the handling of refrigerants. Proper safety and troubleshooting techniques will be followed. To be successful in this course, you should have knowledge in electrical circuits, refrigeration theory, and controls. (Prerequisite: HVAC 2120)

Commercial Alternative Systems

HVAC2230 1.00 credits

This course will take a look at commercial refrigeration systems found in the Mankato area, along with the companies that service them. The class will take field trips to local businesses and service companies to see how they operate. To be successful in this course, you should have an understanding of the refrigeration sealed system components and how they work. (Prerequisites: None)

Brazing

HVAC2251 2.00 credits

This course covers brazing equipment and materials. Students will be introduced to the soldering and brazing process, terms, and personal safety. (Prerequisites: None)

students will study proper troubleshooting and safety procedures. The students will then apply this knowledge when testing the electrical, mechanical and water systems. To be successful in this course, you should have knowledge in electrical circuits, refrigeration theory, controls and refrigeration sealed systems.(Prerequisites: None)

Central Air Conditioning

HVAC2240 2.00 credits

This course covers the different central air conditioning systems found in residential and light commercial applications today. The electrical and mechanical systems will be studied and analyzed along with troubleshooting and safety procedures. The students will then apply this knowledge by using proper troubleshooting techniques for testing electrical and mechanical operations in the lab. To be successful in this class the student will need to be enrolled in the HVAC program and be in their second or third semester. (Prerequisites: None)

Commercial Package Heat/Cool Units

HVAC2325 2.00 credits

This course covers the different commercial packaged heating and cooling systems found in residential, commercial and industrial applications. The electrical, mechanical systems will be studied and analyzed along with troubleshooting and safety procedures. The principle and operation of economizers and their controls will be discussed in class. The student will then take this knowledge and apply it in the lab. To be successful in this class the student will need to be enrolled in the HVAC program and be in their second or third semester. (Prerequisites: None)

Heating, Ventilation, Air Cond/Refrigeration (Heating Cert)

Certificate • 26 Credits

CERT3460



Degree Description

Trained, highly skilled personnel are needed for the exciting new technological demands of the residential/commercial refrigeration and heating, ventilation, air conditioning industry. Independent and critical thinking men and women instilled with troubleshooting and electrical control circuit skills are vital for the future installation and servicing of HVAC/R equipment. The HVAC/R program at SCC is designed to prepare these individuals for entry-level positions in the HVAC/R field.

To participate in the program, you should have a strong mechanical aptitude, strong math skills and enjoy problem solving.

Admission Dates: Fall and Spring Semester

Offered on the North Mankato Campus

The course requirements listed below are specific to the 2013-2014 school year. If you need to view the program from previous years view our [Catalog Archive](#).

This credential is part of the Heating, Ventilation, Air Conditioning, Refrigeration department. [See the Heating, Ventilation, Air Conditioning, Refrigeration department page for more details](#)

Required Technical Courses (7 Courses)

Complete the following courses:

- [HVAC2000](#) Electrical Circuits (2 Credits)
- [HVAC2010](#) IPH Motors and Auxiliary Controls (2 Credits)
- [HVAC2301](#) Indoor Air Quality (1 Credit)
- [HVAC2310](#) Hydronic Heat (2 Credits)
- [HVAC2320](#) Gas Heat (3 Credits)
- [HVAC2325](#) Commercial Package Heat/Cool Units (2 Credits)
- [HVAC2340](#) Sheet Metal Ductwork Fabrication (3 Credits)

Technical Electives (11 Credits)

Complete 11 credits from the following courses:

- [HLTH1950](#) CPR (1 Credit)
- [HLTH1952](#) First Aid (1 Credit)
- [HLTH1954](#) Safety (1 Credit)
- [OTEC2000](#) Employment Search Skills (2 Credits)
- [HVAC2330](#) Alternative Heating Systems (2 Credits)
- [HVAC2500](#) Advance Heating Lab I (1 Credit)
- [HVAC2510](#) Advanced Heating Lab II (2 Credits)
- [HVAC2520](#) Heating Internship I (1 Credit)
- [HVAC2530](#) Heating Internship II (2 Credits)

PLEASE NOTE: All program plans are preliminary and curriculum may change without notice. Your [catalog of record](#) may have different requirements.

Heating, Ventilation, Air Cond/Refrigeration (Heating Cert) - Certificate of Training Course Descriptions**Electrical Circuits****HVAC2000 2.00 credits**

This is an introductory course designed to help students understand the relationships of electricity. Electrical units, terms, formulas, and electrical schematics are covered. (Prerequisites: None)

IPH Motors and Auxiliary Controls**HVAC2010 2.00 credits**

The course will introduce the student to the different types of single-phase and three phase AC motors used on HVAC/R equipment. Motor starting devices and motor protection devices for single-phase motors will also be covered in depth. From an electrical controls schematic the student will connect and wire motors in start-stop circuits, reversing circuits and three phase circuits. The student will learn to electrically troubleshoot motors and motor control circuits utilizing motor wiring schematics. To be successful in this class the student will need to be enrolled in the HVAC program and be in their second or third semester. (Prerequisites: None)

Indoor Air Quality**HVAC2301 1.00 credits**

This course covers equipment that deals with today's problem with indoor air quality. Students will study, analyze the causes of poor IAQ in homes and the work place. Each student will give an oral report on a topic picked by the instructor. (Prerequisites: None)

Hydronic Heat**HVAC2310 2.00 credits**

This course covers systems that utilize fluid for the transfer of heat known as hydronic heating. The electrical and mechanical systems will be studied and analyzed along with troubleshooting system fluid problems, air infiltration and proper operating pressures. The students will identify fluid control components, and demonstrate knowledge of each component's purpose in the lab. To be successful in this class the student will need to be enrolled in the HVAC program and be in their second or third semester. (Prerequisites: None)

Gas Heat**HVAC2320 3.00 credits**

This course covers the forced air gas heating systems found in residential and light commercial applications. The electrical and mechanical systems will be studied and analyzed along with troubleshooting and safety procedures. The students will then apply this knowledge by using proper troubleshooting techniques for testing electrical and mechanical operations in the lab. To be successful in this class the student should take HVAC 2000 and HVAC 2100 before or concurrent. (Prerequisite: None)

Commercial Package Heat/Cool Units**HVAC2325 2.00 credits**

This course covers the different commercial packaged heating and cooling systems found in residential, commercial and industrial applications. The electrical, mechanical systems will be studied and analyzed along with troubleshooting and safety procedures. The principle and operation of economizers and their controls will be discussed in class. The student will then take this knowledge and apply it in the lab. To be successful in this class the student will need to be enrolled in the HVAC program and be in their second or third semester. (Prerequisites: None)

Sheet Metal Ductwork Fabrication**HVAC2340 3.00 credits****CPR****HLTH1950 1.00 credits**

The course will introduce the student to the layout and fabrication of sheet metal ductwork in both commercial and residential applications. The student will fabricate fittings including reducers, transitions, takeoffs, ogee offsets and radius elbows. Residential duct design and sizing methods will be discussed along with heat loss/heat gain calculations with related computer software applications. The student will be exposed to blue print reading and related specification books. (Prerequisites: None)

First Aid

HLTH1952 1.00 credits

This course includes emergency care training for initial treatment of illness and injury. Patient assessment, bleeding control, shock management, soft tissue injury, orthopedic injury, diabetic problems, seizures, poisons, heat exposure, and cold exposure are some of the topics covered in this course. This course is appropriate for anyone who may need to render immediate care. The items covered in the course are just as applicable to an industrial or a business work setting, as they are to a daycare facility, or even at home. (Prerequisite: None).

Employment Search Skills

OTEC2000 2.00 credits

This course introduces students to a process for developing self-awareness - considering career opportunities, constraints, choices, and consequences - identifying career related goals - and planning of work, education, and related experiences to attain specific career goals. Students will also create job search documents and develop interviewing skills. The students will develop an understanding of and appreciation for the job search process. Students will use Internet and library resources.

Advance Heating Lab I

HVAC2500 1.00 credits

This course is designed to give the student a more hands on learner guided course work. The student will be required to work on additional lab projects provided by the instructor, industry or the student themselves. Manufacturer instillation guides will be studied and detailed final project will be handed in. The student will practice troubleshooting techniques and get involved in helping fellow students in the lab area to sharpen their communication skills. To be successful in this class the student will need to be enrolled in the HVAC program, be in their second or third semester and taken HVAC 2320. (Prerequisites: None)

Heating Internship I

HVAC2520 1.00 credits

This course covers heating work related experiences. Each student taking this course will be required to fill-out an

This course covers the skills of infant, child and adult single and two rescue CPR as well as relief of foreign body airway obstruction procedures for infant, child and adult. Automated external defibrillators, bag-valve masks and pocket masks are also used. Signs and symptoms of stroke and heart attack are also discussed. This course meets the criteria of the American Heart Association 2010 Guidelines for CPR and ECC.

Safety

HLTH1954 1.00 credits

This course includes basic OSHA safety standards. Hearing protection, eye protection, back injuries, lockout/tagout procedures, Hazard Communication standard, bloodborne pathogens, and substance abuse in the workplace are examples of topics covered in this course. The consequences of disregarding safety practices are explored. This course is appropriate for individuals who may be entering a new vocation. The topics covered include items from the health care realm to items concerning business, manufacturing, and industrial issues. (Prerequisite: None)

Alternative Heating Systems

HVAC2330 2.00 credits

This course covers a variety of alternative heating systems, some of the systems included will be oil heating systems, a variety of electrical heating systems, heat pump systems and alternative fuel sources will be discussed. Electrical and mechanical systems will be explored along with safety, troubleshooting and equipment performance. To be successful in this class the student will need to be enrolled in the HVAC program, be in their second or third semester and have already taken HVAC 2240, and HVAC 2320 or concurrent. (Prerequisites: None)

Advanced Heating Lab II

HVAC2510 2.00 credits

This course is designed to give the student a more hands on learner guided course work. The student will be required to work on additional lab projects provided by the instructor, industry or the student themselves. Manufacturer instillation guides will be studied and a detailed final project will be handed in. The student will practice troubleshooting techniques and get involved in helping fellow students in the lab area to sharpen their communication skills. To be successful in this class the student will need to be enrolled in the HVAC program, be in their second or third semester and have already taken HVAC 2320. (Prerequisites: None)

Heating Internship II

HVAC2530 2.00 credits

This course covers heating work related experiences. Each student taking this course will be required to fill-out an

internship experience worksheet. Students will be repairing equipment in the shop as well as in the customer's home. This is under the guidance of the employer. In order to be successful in this course, you must be knowledgeable in electrical circuits, controls or concurrently taking HVAC 2320. (Prerequisites: None)

internship experience worksheet. Students will be repairing equipment in the shop as well as in the customer's home. This is under the guidance of the employer. In order to be successful in this course, you must be knowledgeable in electrical circuits, controls or concurrently taking HVAC 2320. (Prerequisites: None)

Intensive Care Paramedic Technician Department Overview

As the most highly trained pre-hospital emergency care provider in the EMS field, the paramedic accepts the challenging responsibility for patient care. A willingness to accept this challenge and direct others to carry out treatment plans is the first step in becoming a paramedic. Paramedicine is a relatively young field with a wide range of employment opportunities, including ambulance services, fire departments, police departments, hospitals, helicopter services and educational institutions. A paramedic student can earn either a Diploma or an A.A.S. Degree.

The Paramedic Program at South Central College is accredited by the Commission on Accreditation of Allied Health Education Programs (www.caahep.org) upon the recommendation of the Committee on Accreditation of Educational Programs for the Emergency Medical Services Professions (CoAEMSP).

Commission on Accreditation of Allied Health Education Programs

1361 Park Street
Clearwater, FL 33756
727-210-2350
www.caahep.org

To contact CoAEMSP:

8301 Lakeview Parkway, Suite 111-312
Rowlett TX 75088
(214) 703-8445
FAX (214) 703-8992
www.caahep.org

Evening/Part-Time Options:

Both the A.A.S. Degree and the Diploma options are offered part-time (evenings and Saturday). Clinical experience schedules will be varied during year two.

Basic Entrance Requirements

1. Current certification as an Emergency Medical Technician.
2. Documentation of a minimum of 50 ambulance runs or successful completion of ambulance operations offered through paramedic custom training. This requirement must be met before the student will be allowed to register for spring semester.

Student Background Studies:

Minnesota law requires that any person who provides services that involve direct contact with patients and residents at a health care or child care facility licensed by the Minnesota Department of Health have a background study conducted by the state. An individual who is disqualified from having direct patient contact as a result of the background study, and whose disqualification is not set aside by the Commissioner of Health, will not be permitted to participate in a clinical placement in a Minnesota licensed health care or child care facility. Failure to participate in a clinical placement required by the academic program could result in ineligibility to qualify for a degree in that program.

Core Competencies

1. Conduct assessment to determine differential diagnosis, and provide treatment for patients in pre-hospital/hospital settings
2. Demonstrate technical competence in performing paramedic skills.
3. Demonstrate effective communication skills in interaction with patients, families, and other healthcare team members.
4. Demonstrate the ability to adapt, anticipate, and accommodate changing circumstance.
5. Demonstrate environmental and cultural understanding in delivery of paramedic care.
6. Measure and evaluate personal performance of paramedic responsibilities.

Department Faculty

Lisa Matzke, Laurie Oelslager

Intensive Care Paramedic Technician Degrees

Intensive Care Paramedic Technician AAS Degree
Intensive Care Paramedic Technician Diploma

Intensive Care Paramedic Technician

A.A.S. Degree • 72 Credits

AAS 3311

Degree Description

As the most highly trained pre-hospital emergency care provider in the EMS field, the paramedic accepts the challenging responsibility for patient care. A willingness to accept this challenge and direct others to carry out treatment plans is the first step in becoming a paramedic. Paramedicine is a relatively young field with a wide range of employment opportunities, including ambulance services, fire departments, police departments, hospitals, helicopter services and educational institutions. A paramedic student can earn either a Diploma or an A.A.S. Degree. The program is fully accredited by the Committee on Accreditation of Educational Programs for the Emergency Medical Services Professionals.

Admission Dates: Fall Semester

Offered on the North Mankato Campus

The course requirements listed below are specific to the 2013-2014 school year. If you need to view the program from previous years view our [Catalog Archive](#).

This credential is part of the Intensive Care Paramedic Technician department. [See the Intensive Care Paramedic Technician department page for more details](#)

Required Technical Courses (15 Courses)

Complete the following courses:

- [ICP 1000](#) Introduction to Paramedicine (3 Credits)
- [ICP 1005](#) Applied Anatomy and Physiology for EMS (3 Credits)
- [ICP 1010](#) EMS Skills (5 Credits)
- [ICP 1020](#) Pharmacology for EMS (3 Credits)
- [ICP 1040](#) Cardiac Care in EMS (4 Credits)
- [ICP 1050](#) Trauma Care (3 Credits)
- [ICP 1060](#) Pathophysiology in EMS (5 Credits)
- [ICP 2010](#) EMS Advanced Skills (5 Credits)
- [ICP 2030](#) Critical Care I (3 Credits)
- [ICP 2040](#) Critical Care II (3 Credits)
- [ICP 2050](#) Field Internship I (3 Credits)
- [ICP 2060](#) Field Internship II (3 Credits)
- [ICP 2070](#) Special Populations (5 Credits)
- [ICP 2080](#) Paramedic Refresher (3 Credits)
- [ICP 2090](#) Hazardous Materials (1 Credit)

Required Liberal Arts & Sciences

To complete an AAS Degree, students must complete 20 MNTC credits from 3 of the 10 MNTC Goal Areas.

PLEASE NOTE: All program plans are preliminary and curriculum may change without notice. Your [catalog of record](#) may have different requirements.

Intensive Care Paramedic Technician - Associate of Applied Science Degree Course Descriptions**Introduction to Paramedicine****ICP 1000 3.00 credits**

The Paramedic has a variety of duties. This course demonstrates the difference between the various levels of the Emergency Medical Technician and the responsibilities that accompany each level of training. It also includes introductory topics that the individual must understand in order to function as a paramedic. Such topics include medical/legal issues, communications, stress, system structure, lifting mechanics, medical terminology, infection control, etc. (Prerequisite: Admission into the Paramedic Program. All classes must be taken in sequence.)

EMS Skills**ICP 1010 5.00 credits**

EMS SKILLS focuses on the Basic Life Support skills that the EMT-P must master along with this introduction to advanced skills. These include: Patient assessment, airway control with adjuncts, IV therapy, suctioning, communication skills, AED's, intubation, medication administration, cardiac skills, and other invasive techniques. (Prerequisite: Admission into the Paramedic Program. All classes must be taken in sequence.)

Cardiac Care in EMS**ICP 1040 4.00 credits**

The course will prepare the EMT-P to assess and manage those cardiac emergencies that result from coronary atherosclerosis, along with a number of conditions involving pathology of peripheral/central circulation. The interpretation of cardiac dysrhythmias receives much emphasis in this course. ACLS Provider certification may be included. (Prerequisite: Admission into the Paramedic Program. All classes must be taken in sequence.)

Pathophysiology in EMS**ICP 1060 5.00 credits**

This course discusses a variety of topics and medical conditions that occur in the various body systems. Emphasis is placed on field management of medical emergencies. (Prerequisite: Admission into the Paramedic Program. All

Applied Anatomy and Physiology for EMS**ICP 1005 3.00 credits**

This course is designed as an introduction to body structure and function. An emphasis will be placed on body systems specifically related to paramedicine and how that knowledge can be applied to EMS care. (Prerequisite: Admission into the Paramedic Program. All classes must be taken in sequence.)

Pharmacology for EMS**ICP 1020 3.00 credits**

The intent of this course is to introduce the student to basic pharmacological concepts, principles of drug safety and basic drug categories. Legal aspects of drug administration, drug standards, and use of reference material will be included. Specialized medications utilized in ALS transports will also be discussed. This course will have a primary focus on specific drugs used by paramedics. (Prerequisite: Admission into the Paramedic Program. All classes must be taken in sequence.)

Trauma Care**ICP 1050 3.00 credits**

This course deals with the many aspects of trauma, including kinematics, evaluation, management, packaging, and transport. Advanced ITLS certification may be obtained. (Prerequisite: Admission into the Paramedic Program. All classes must be taken in sequence)

EMS Advanced Skills**ICP 2010 5.00 credits**

This course is designed to orient the student to the rescue environment. Emphasis is placed on the role and responsibilities of the paramedic during a rescue response, including essential skills needed to keep the paramedic and

classes must be taken in sequence.)

the patient safe. Topics include Mass Casualty Incidents (includes ICS & START disaster response), hazardous materials, basic rescue, water and ice rescue awareness, high level-low angle rescue, emergency driving, special rescue situations and auto extrication for the paramedic. Also included is an introduction to advanced intensive care paramedic skills. Additional clinical rotations will also be completed. (Prerequisite: Admission into the Paramedic Program. All classes must be taken in sequence.)

Critical Care I

ICP 2030 3.00 credits

This course orients students to the emergency room, intensive care unit, cardiac intensive care, telemetry unit and critical care departments. (Prerequisite: Admission into the Paramedic Program. All classes must be taken in sequence.)

Critical Care II

ICP 2040 3.00 credits

Clinical areas may include: Psychiatric Unit, Obstetrics, Pediatrics and Geriatrics. (Prerequisite: Admission into the Paramedic Program. All classes must be taken in sequence.)

Field Internship I

ICP 2050 3.00 credits

This internship involves experiences with an advanced life support system provided by a fire service, municipal, hospital or other. (Prerequisites: Admission into the Paramedic Program. All classes must be taken in sequence.)

Field Internship II

ICP 2060 3.00 credits

This internship involves experiences with an advanced life support system provided by a private service. (Prerequisites: Admission into the Paramedic Program. All classes must be taken in sequence.)

Special Populations

ICP 2070 5.00 credits

This course covers medical considerations in areas such as geriatrics, obstetrics, gynecology, neonates, pediatrics, behavior disorders, and patients with special needs. PALS certification may be obtained. (Prerequisites: Admission into the Paramedic Program. All classes must be taken in sequence.)

Paramedic Refresher

ICP 2080 3.00 credits

This course is a comprehensive review of the technical courses and designed to prepare the candidate to challenge the National Registry Exam. It also meets the requirements for the 48-hour refresher. (Prerequisites: Admission into the Paramedic Program. All classes must be taken in sequence.)

Hazardous Materials

ICP 2090 1.00 credits

This course is designed to meet the training standards designed in NFPA473 "Standards for Competencies of EMS Personnel Responding to Hazardous Materials Incidents". The class combines didactic training with audio-visual materials that will provide a review of pertinent "awareness" level information. To insure a safe EMS response to a hazardous materials situation at the Operations Level, additional information and practical laboratory time will be provided as necessary. (Prerequisite: Permission of the Instructor)

Intensive Care Paramedic Technician

Diploma • 58 Credits

DIP 3310

Degree Description

As the most highly trained pre-hospital emergency care provider in the EMS field, the paramedic accepts the challenging responsibility for patient care. A willingness to accept this challenge and direct others to carry out treatment plans is the first step in becoming a paramedic. Paramedicine is a relatively young field with a wide range of employment opportunities, including ambulance services, fire departments, police departments, hospitals, helicopter services and educational institutions. A paramedic student can earn either a Diploma or an A.A.S. Degree. The program is fully accredited by the Committee on Accreditation of Educational Programs for the Emergency Medical Services Professionals.

Admission Dates: Fall Semester

Offered on the North Mankato Campus

The course requirements listed below are specific to the 2013-2014 school year. If you need to view the program from previous years view our [Catalog Archive](#).

This credential is part of the Intensive Care Paramedic Technician department. [See the Intensive Care Paramedic Technician department page for more details](#)

Required Technical Courses (15 Courses)

Complete the following classes:

- [ICP 1000](#) Introduction to Paramedicine (3 Credits)
- [ICP 1005](#) Applied Anatomy and Physiology for EMS (3 Credits)
- [ICP 1010](#) EMS Skills (5 Credits)
- [ICP 1020](#) Pharmacology for EMS (3 Credits)
- [ICP 1040](#) Cardiac Care in EMS (4 Credits)
- [ICP 1050](#) Trauma Care (3 Credits)
- [ICP 1060](#) Pathophysiology in EMS (5 Credits)
- [ICP 2010](#) EMS Advanced Skills (5 Credits)
- [ICP 2030](#) Critical Care I (3 Credits)
- [ICP 2040](#) Critical Care II (3 Credits)
- [ICP 2050](#) Field Internship I (3 Credits)
- [ICP 2060](#) Field Internship II (3 Credits)
- [ICP 2070](#) Special Populations (5 Credits)
- [ICP 2080](#) Paramedic Refresher (3 Credits)
- [ICP 2090](#) Hazardous Materials (1 Credit)

Required Liberal Arts and Sciences (6 Credits)

Complete 6 credits from any of the 10 MNTC Goal Areas.

PLEASE NOTE: All program plans are preliminary and curriculum may change without notice. Your [catalog of record](#) may have different requirements.

Intensive Care Paramedic Technician - Diploma of Occupational Proficiency Course Descriptions**Introduction to Paramedicine****ICP 1000 3.00 credits**

The Paramedic has a variety of duties. This course demonstrates the difference between the various levels of the Emergency Medical Technician and the responsibilities that accompany each level of training. It also includes introductory topics that the individual must understand in order to function as a paramedic. Such topics include medical/legal issues, communications, stress, system structure, lifting mechanics, medical terminology, infection control, etc. (Prerequisite: Admission into the Paramedic Program. All classes must be taken in sequence.)

EMS Skills**ICP 1010 5.00 credits**

EMS SKILLS focuses on the Basic Life Support skills that the EMT-P must master along with this introduction to advanced skills. These include: Patient assessment, airway control with adjuncts, IV therapy, suctioning, communication skills, AED's, intubation, medication administration, cardiac skills, and other invasive techniques. (Prerequisite: Admission into the Paramedic Program. All classes must be taken in sequence.)

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The course will prepare the EMT-P to assess and manage those cardiac emergencies that result from coronary atherosclerosis, along with a number of conditions involving pathology of peripheral/central circulation. The interpretation of cardiac dysrhythmias receives much emphasis in this course. ACLS Provider certification may be included. (Prerequisite: Admission into the Paramedic Program. All classes must be taken in sequence.)

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This course discusses a variety of topics and medical conditions that occur in the various body systems. Emphasis is placed on field management of medical emergencies. (Prerequisite: Admission into the Paramedic Program. All

Applied Anatomy and Physiology for EMS**ICP 1005 3.00 credits**

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Pharmacology for EMS**ICP 1020 3.00 credits**

The intent of this course is to introduce the student to basic pharmacological concepts, principles of drug safety and basic drug categories. Legal aspects of drug administration, drug standards, and use of reference material will be included. Specialized medications utilized in ALS transports will also be discussed. This course will have a primary focus on specific drugs used by paramedics. (Prerequisite: Admission into the Paramedic Program. All classes must be taken in sequence.)

Trauma Care**ICP 1050 3.00 credits**

This course deals with the many aspects of trauma, including kinematics, evaluation, management, packaging, and transport. Advanced ITLS certification may be obtained. (Prerequisite: Admission into the Paramedic Program. All classes must be taken in sequence)

EMS Advanced Skills**ICP 2010 5.00 credits**

This course is designed to orient the student to the rescue environment. Emphasis is placed on the role and responsibilities of the paramedic during a rescue response, including essential skills needed to keep the paramedic and

classes must be taken in sequence.)

the patient safe. Topics include Mass Casualty Incidents (includes ICS & START disaster response), hazardous materials, basic rescue, water and ice rescue awareness, high level-low angle rescue, emergency driving, special rescue situations and auto extrication for the paramedic. Also included is an introduction to advanced intensive care paramedic skills. Additional clinical rotations will also be completed. (Prerequisite: Admission into the Paramedic Program. All classes must be taken in sequence.)

Critical Care I

ICP 2030 3.00 credits

This course orients students to the emergency room, intensive care unit, cardiac intensive care, telemetry unit and critical care departments. (Prerequisite: Admission into the Paramedic Program. All classes must be taken in sequence.)

Critical Care II

ICP 2040 3.00 credits

Clinical areas may include: Psychiatric Unit, Obstetrics, Pediatrics and Geriatrics. (Prerequisite: Admission into the Paramedic Program. All classes must be taken in sequence.)

Field Internship I

ICP 2050 3.00 credits

This internship involves experiences with an advanced life support system provided by a fire service, municipal, hospital or other. (Prerequisites: Admission into the Paramedic Program. All classes must be taken in sequence.)

Field Internship II

ICP 2060 3.00 credits

This internship involves experiences with an advanced life support system provided by a private service. (Prerequisites: Admission into the Paramedic Program. All classes must be taken in sequence.)

Special Populations

ICP 2070 5.00 credits

This course covers medical considerations in areas such as geriatrics, obstetrics, gynecology, neonates, pediatrics, behavior disorders, and patients with special needs. PALS certification may be obtained. (Prerequisites: Admission into the Paramedic Program. All classes must be taken in sequence.)

Paramedic Refresher

ICP 2080 3.00 credits

This course is a comprehensive review of the technical courses and designed to prepare the candidate to challenge the National Registry Exam. It also meets the requirements for the 48-hour refresher. (Prerequisites: Admission into the Paramedic Program. All classes must be taken in sequence.)

Hazardous Materials

ICP 2090 1.00 credits

This course is designed to meet the training standards designed in NFPA473 "Standards for Competencies of EMS Personnel Responding to Hazardous Materials Incidents". The class combines didactic training with audio-visual materials that will provide a review of pertinent "awareness" level information. To insure a safe EMS response to a hazardous materials situation at the Operations Level, additional information and practical laboratory time will be provided as necessary. (Prerequisite: Permission of the Instructor)

Community Paramedic

Certificate • 12 Credits

CERT3325

Degree Description

The Community Paramedic program responds to identified health needs in underserved communities, ultimately improving the quality of life and health of rural and remote citizens and visitors. The program seeks to prepare students for roles that include the following: outreach; wellness; health screening assessments; health teaching; providing immunizations; wound care; recognition of mental health issues and referral into the existing mental health care systems; and functioning as physician extenders in rural clinics and hospitals. Community Paramedic students will also receive instruction in disease management, including a thorough understanding of monitoring diabetes, congestive heart failure and other high-cost diseases and the methods and medications used to treat them.

NOTE:

Students must be admitted to the Community Paramedic program by following a defined application process. Requirements for admittance include: current certification as an Emergency Medical Technician Paramedic (EMT-P) and a record of at least two years of full time service as an EMT-P or the part time equivalent.

Admission Dates: Fall and Spring Semester

Offered on the North Mankato Campus

The course requirements listed below are specific to the 2013-2014 school year. If you need to view the program from previous years view our [Catalog Archive](#).

This credential is part of the Intensive Care Paramedic Technician department. [See the Intensive Care Paramedic Technician department page for more details](#)

Required Technical Courses (4 Courses)

Select the following courses:

[CP 2500](#) Roles Advocacy and Outreach (2 Credits)

[CP 2505](#) Community Assessment (2 Credits)

[CP 2510](#) Care and Prevention Development Strategies (3 Credits)

[CP 2520](#) Community Paramedic Clinical (5 Credits)

PLEASE NOTE: All program plans are preliminary and curriculum may change without notice. Your [catalog of record](#) may have different requirements.

Community Paramedic - Certificate of Training Course Descriptions**Roles Advocacy and Outreach****CP 2500 2.00 credits**

This is an introduction to the role and function of the Community Paramedic (CP). The student will learn about the Community Paramedic's specific role and function as a member of the health care team and part of the community. The student will identify the components of the role, define it, and explain the "scope of practice" for the position of CP. Additionally, the student will learn about the role of the CP as an advocate for clients in the community. (Prerequisite: Acceptance into the Community Paramedic Program. All CP courses must be taken concurrently)

Care and Prevention Development Strategies**CP 2510 3.00 credits**

This course will introduce the responsibilities of the Community Paramedic (CP) for gathering appropriate patient/client information and maintaining accurate records, including documentation of encounters between the CP and the patient/client. The student will also learn about the CP's role in assessing health care needs and appraising health care conditions. (Prerequisite: Acceptance into the Community Paramedic Program. All CP courses must be taken concurrently)

Community Assessment**CP 2505 2.00 credits**

This course is designed to introduce the role of the Community Paramedic (CP) as a member of the health care team in community assessment. The student will map the community health care services, describe the demographics of the community and assess their impact on the health of the clients. Additionally, the student will gain understanding of community health services in order to give advice on health care needs in the community. (Prerequisite: Acceptance into the Community Paramedic Program. All CP courses must be taken concurrently)

Community Paramedic Clinical**CP 2520 5.00 credits**

This course will provide the student with clinical training under the supervision of a medical director, physician, nurse practitioner, physician's assistant or public health provider. The student will recommend appropriate health and/or social care professionals for the patient, prioritize jobs, and provide both advice and care. The student's placement in the clinical is based on qualifications and past training and experience. (Prerequisite: Acceptance into the Community Paramedic Program. All CP courses must be taken concurrently)

Marketing Management Department Overview

Marketing is critical to the success of every organization, whether big or small, profit or nonprofit, product or service oriented. To provide quality customer service, these organizations must identify and research target markets, determine customer needs, and establish how products and services can most efficiently be distributed, priced and promoted.

The Marketing Management major at South Central College offers an Associate of Applied Science (A.A.S.) degree, diploma or certificate option.

Marketing is a vast field, training people for multitudes of professions. It is estimated that nearly one third of all Americans have marketing activities in their positions.

Core Competencies

1. Manage human resources effectively
2. Perform merchandising operations
3. Apply business related technology
4. Develop and deliver professional presentations
5. Critical thinking/management decision making

Department Faculty

Kristi Maruska, Roberta Moorhouse, Shayne Narjes

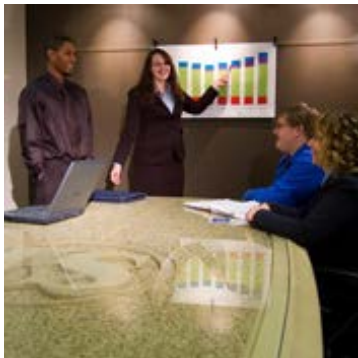
Marketing Management Degrees

Marketing Management AAS Degree
Marketing Management Diploma
Marketing Management Certificate

Marketing Management

A.A.S. Degree • 60 Credits

AAS 3272/AAS 2284



Degree Description

The Associate of Applied Science Marketing program is designed to prepare individuals for employment in marketing, sales management, and retail management fields. Students will learn current practices and acquire knowledge in marketing fundamentals, management, sales, retail operations, managing human resources, sales force management, managing a sales business for profitability and new applications in the art of selling. Students are required to participate in a business and industry internship in positions including customer service, sales, retailing, marketing and advertising to reinforce newly acquired skills. In addition, the program requires Liberal Arts & Sciences courses designed to provide an understanding of the culture and environment in which we live. Advisors will work with students in developing a program of study, encouraging timely program completion. You can now earn your BAS Degree through Southwest Minnesota State University. After you complete your A.A.S. Degree in Marketing, you can transfer your program credits into a Bachelor of Applied Science Degree in Marketing. Courses are offered at South Central via ITV, and online. See

an advisor for program requirements.

Admission Dates: Fall and Spring Semester

Offered on the Faribault and North Mankato Campuses

The course requirements listed below are specific to the 2013-2014 school year. If you need to view the program from previous years view our [Catalog Archive](#).

This credential is part of the Marketing Management department. [See the Marketing Management department page for more details](#)

Required Technical Courses (11 Courses)

Complete all of the following courses:

- [MKT 1800](#) Introduction to Sales (3 Credits)
- [MKT 1810](#) Principles of Marketing (3 Credits)
- [MKT 1820](#) Introduction to Business (3 Credits)
- [MKT 1830](#) Customer Service (3 Credits)
- [MKT 1840](#) Principles of Advertising (3 Credits)
- [MKT 1850](#) Professional Development I (1 Credit)
- [MKT 1900](#) Principles of Management (3 Credits)
- [MKT 1910](#) Entrepreneurship (3 Credits)
- [MKT 1920](#) Marketing Research (3 Credits)
- [MKT 1930](#) Human Resource Management (3 Credits)
- [MKT 1940](#) Leadership Strategies (3 Credits)

Marketing Internship (6 Credits)

You must complete 6 credits of internship:

- [MKT 1817](#) Internship (3 Credits)
- [MKT 2817](#) Internship (3 Credits)
- [MKT 2827](#) Marketing Management Internship (1 - 3 Credits)

Required Liberal Arts & Sciences (2 Courses)

To complete an AAS Degree, students must complete 15 MNTC credits from 3 of the 10 MNTC Goal Areas. Courses must be approved by advisor/faculty.

Management Core (2 Courses)

Select the following two courses:

- [MGT 2810](#) Retail Management (3 Credits)
- [MGT 2820](#) Introduction to Management Information Systems (3 Credits)

PLEASE NOTE: All program plans are preliminary and curriculum may change without notice. Your [catalog of record](#) may have different requirements.

Technical Elective Credits (2 Credits)

Complete 2 additional credits from the following:

- [MKT 1860](#) Marketing and Business Management Practicum (2 Credits)
- [MKT 1875](#) Internet Marketing (2 Credits)
- [MKT 1950](#) Special Topics in Marketing (2 Credits)
- [MKT 2827](#) Marketing Management Internship (1 - 3 Credits)

The following two courses are required:

[COMM110](#) Public Speaking (3 Credits)

[ENGL100](#) Composition (4 Credits)

Marketing Management - Associate of Applied Science Degree Course Descriptions**Introduction to Sales****MKT 1800 3.00 credits**

This course serves as a foundation for future sales courses. The instructional approach combines both traditional and innovative presentations of course content that is dependent upon student involvement. The content covers the role of sales, steps of the selling process, the importance of communication skills and a positive attitude. In addition, special attention is devoted throughout the course on how the salesperson is viewed as an ambassador for the company that they represent. (Prerequisite: None)

Introduction to Business**MKT 1820 3.00 credits**

This course covers the basic fundamentals of the world of business. Emphasis will be placed on the nature of business and the trends that will change the way business is conducted in the twenty-first century. The latest technology and business terms will provide an updated look at the business world.

Principles of Advertising**MKT 1840 3.00 credits**

This course provides a broad overview of the entire advertising and sales promotion industry. The focus will cover the entire spectrum of paid and non-paid activities designed to encourage the purchase and use of products, services and ideas. Discussion will include theory and practice about advertising media, public relations, packaging, special events, creation of ads and evaluation.

Principles of Management**MKT 1900 3.00 credits**

This course will introduce the student to the responsibilities and roles of managers and supervisors. Course focus will be on topics related to the management functions of planning, organizing, leading and controlling. Project management, the decision-making process, organizational structures and team skills will be explored. Students will also be exposed to financial, economic and productivity tools for use in

Principles of Marketing**MKT 1810 3.00 credits**

This course covers the basic marketing concepts for Marketing and non-marketing students. Developing a rational marketing approach to the practices of modern marketing as they are used in a wide variety of settings. The course includes discussion on the marketing mix, the four p's of marketing, channels of distribution, target marketing, ethic, social responsibility, global marketing and the impact of the internet.

Customer Service**MKT 1830 3.00 credits**

This course covers the importance of customer service and how the student can achieve quality customer service. Total Quality Management is an essential part of customer service and how quality service is relayed to the consumer. This course explains how to develop a service attitude, dealing with various types of customers, handling customer complaints, decision making and using the team concept.

Professional Development I**MKT 1850 1.00 credits**

This course focuses on the importance of professionalism and leadership opportunities. Students will have the opportunity to improve their understanding, interpretation and participation in a variety of activities within the college and their community. Attendance in professional conferences, seminars and meetings will be required.

Entrepreneurship**MKT 1910 3.00 credits**

This course utilizes a variety of tools to stimulate student interest and to promote learning. We will discuss the importance of entrepreneurship in our business climate with an emphasis on the small business. The course culminates with each student creating parts of a business plan. (Prerequisites: None)

management.

Marketing Research

MKT 1920 3.00 credits

This course involves practical application of the concepts of involved in marketing research. Students will work in teams to explore the fundamentals of marketing research by completing a major project. The course content includes: finding secondary data, conducting focus groups, organizing observational research, creating surveys, statistical analysis and report writing.

Leadership Strategies

MKT 1940 3.00 credits

This course is designed to help students recognize their leadership potential and help improve their interpersonal skills needed in today's workplace. Students will explore various leadership strategies through self assessment and reflection. Self assessments will then be used to provide the framework for developing career portfolios. Resume development, interviewing skills and networking are an integral part of the course.

Introduction to Management Information Systems

MGT 2820 3.00 credits

This course is an introduction to management information systems (MIS) and involves the interactions between technology and business practices. The course involves the planning, organizing and controlling of information technologies related to organizational objectives. Specific attention will be given to database management with a focus on contact management. The course also involves the use of spreadsheet applications, collaborative tools, and other technologies utilized in the business environment. (Prerequisites: None)

Internship

MKT 2817 3.00 credits

This course allows students the opportunity to continue to develop their marketing & management skills in an internship. (Prerequisites: None)

Marketing and Business Management Practicum

Human Resource Management

MKT 1930 3.00 credits

This course focuses on human resource management issues. The course covers the techniques and legal aspects of recruiting, hiring, firing, promotion, documentation, evaluation and other areas essential to the personnel function. (Prerequisites: None)

Retail Management

MGT 2810 3.00 credits

This course focuses on the changing demographics of retail marketing, the growth of new retail formats and the use of information technology to enable quick responses to market dynamics through customer service, vendor-retailer partnering and employee diversity. (Prerequisites: None)

Internship

MKT 1817 3.00 credits

This course allows the student to receive practical experience in his/her chosen career area. A training plan outlining what will be learned is jointly developed among the student, employer and college. (Prerequisites: None)

Marketing Management Internship

MKT 2827 1 - 3 credits

This course allows the student to receive practical experience in his/her chosen career area. This internship is designed to offer students a customized experience. A training plan, outlining what will be learned, is jointly developed between the student, employer and the department site coordinator. This course is designed for students in Restaurant Management who need a minimum of 9 credits of internship or for Marketing Management or Business Management students wishing to further their internship experience with elective credits. (Prerequisites: It is recommended, after advisor review, that students register for this variable credit course after completing MKT 1817 & 2817)

Internet Marketing

MKT 1860 2.00 credits

This course is designed to assist Marketing and Business Management Students in learning more about actively giving back to the community through student learning projects and participating in internationally affiliated competitions through Collegiate DECA. Students will experience volunteer opportunities and professional growth opportunities through classroom projects and by attending professional development conferences in and outside of the state of Minnesota. Students will have the opportunity to meet and compete against similar two and four year institutions to improve personal and professional growth in the field of Marketing and Business Management. (Prerequisite: None)

Special Topics in Marketing**MKT 1950 2.00 credits**

All Special Topics in Marketing courses help students understand how marketing is part of and impacts consumers, business and society. Students will explore broad marketing concepts such as products, price, distribution and promotion through a specific topic of relevance. Any Special Topics in Marketing offering will be specially designed by an SCC Marketing instructor to appeal to SCC students. The instructor has chosen the subject material related to his or her interests, students' interests, or his or her teaching expertise. (Prerequisite: None)

Public Speaking**COMM110 3.00 credits**

This course develops or improves effective performance in acquiring, evaluating, organizing, and communicating information. Learners develop and apply critical and creative thinking to structuring arguments, making presentations, using multimedia, and supporting each other in impromptu and extemporaneous speaking. Course de-emphasizes competition and stresses personal and workplace effectiveness in communication skills. (Prerequisites: Must have a score of 86 or higher on the Sentence Skills portion of the Accuplacer test or completion of ENGL 0080 and ENGL 0090 with a grade of C or higher) (MNTC 1: Communication)

MKT 1875 2.00 credits

This course provides an overview of Internet marketing and electronic commerce marketing. Issues involved with Business to Consumer (B2C), Business to Business (B2B), and Consumer to Consumer (C2C) E-Commerce will be explored.

Marketing Management Internship**MKT 2827 1 - 3 credits**

This course allows the student to receive practical experience in his/her chosen career area. This internship is designed to offer students a customized experience. A training plan, outlining what will be learned, is jointly developed between the student, employer and the department site coordinator. This course is designed for students in Restaurant Management who need a minimum of 9 credits of internship or for Marketing Management or Business Management students wishing to further their internship experience with elective credits. (Prerequisites: It is recommended, after advisor review, that students register for this variable credit course after completing MKT 1817 & 2817)

Composition**ENGL100 4.00 credits**

Composition is concerned with developing, through theory and practice, the ability to communicate in written form for personal and professional reasons. Students will develop writing skills, analytical skills, and critical thinking skills. Students will complete readings, papers, grammar exercises, and in-class activities. Students will learn methods of writing informatively and persuasively. (Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher AND a score of 85.5 or higher on the Sentence Skills portion of the Accuplacer test or completion of ENGL 0080 and ENGL 0090 with a grade of C or higher)(MNTC 1: Communication) This course has an online option.

Marketing Management

Diploma • 53 Credits

DIP 3273



Degree Description

The Marketing Management Diploma is designed to prepare individuals for employment in sales and marketing related positions requiring entry-level skills and knowledge necessary to perform typical job functions. Students seeking opportunities to upgrade present skills will also benefit from the diploma. Courses will cover the fundamentals of marketing, management, sales, retail operations, managing human resources, the art of selling and entrepreneurship. Business and industry internships are required, with positions concentrating in a variety of areas including sales, customer service, retailing, advertising and marketing. Liberal Arts & Sciences courses in public speaking and composition are required. Academic advisors will assist students in choosing additional coursework for the diploma.

Admission Dates: Fall and Spring Semester

Offered on the North Mankato Campus

The course requirements listed below are specific to the 2013-2014 school year. If you need to view the program from previous years view our [Catalog Archive](#).

This credential is part of the Marketing Management department. [See the Marketing Management department page for more details](#)

Required Technical Courses (15 Courses)

Complete all of the following courses:

- [MGT 2810](#) Retail Management (3 Credits)
- [MGT 2820](#) Introduction to Management Information Systems (3 Credits)
- [MKT 1800](#) Introduction to Sales (3 Credits)
- [MKT 1810](#) Principles of Marketing (3 Credits)
- [MKT 1817](#) Internship (3 Credits)
- [MKT 1820](#) Introduction to Business (3 Credits)
- [MKT 1830](#) Customer Service (3 Credits)
- [MKT 1840](#) Principles of Advertising (3 Credits)
- [MKT 1850](#) Professional Development I (1 Credit)
- [MKT 1900](#) Principles of Management (3 Credits)
- [MKT 1910](#) Entrepreneurship (3 Credits)
- [MKT 1920](#) Marketing Research (3 Credits)
- [MKT 1930](#) Human Resource Management (3 Credits)
- [MKT 1940](#) Leadership Strategies (3 Credits)
- [MKT 2817](#) Internship (3 Credits)

Elective Credits (3 Credits)

Complete 3 additional credits from any MGT, MKT, ACCT, OTEC, COMP or Liberal Arts and Sciences courses. Courses must be approved by advisor/faculty.

Required Liberal Arts and Sciences (2 Courses)

Complete the following courses:

- [COMM110](#) Public Speaking (3 Credits)
- [ENGL100](#) Composition (4 Credits)

PLEASE NOTE: All program plans are preliminary and curriculum may change without notice. Your [catalog of record](#) may have different requirements.

Marketing Management - Diploma of Occupational Proficiency Course Descriptions**Retail Management****MGT 2810 3.00 credits**

This course focuses on the changing demographics of retail marketing, the growth of new retail formats and the use of information technology to enable quick responses to market dynamics through customer service, vendor-retailer partnering and employee diversity. (Prerequisites: None)

Introduction to Management Information Systems**MGT 2820 3.00 credits**

This course is an introduction to management information systems (MIS) and involves the interactions between technology and business practices. The course involves the planning, organizing and controlling of information technologies related to organizational objectives. Specific attention will be given to database management with a focus on contact management. The course also involves the use of spreadsheet applications, collaborative tools, and other technologies utilized in the business environment. (Prerequisites: None)

Introduction to Sales**MKT 1800 3.00 credits**

This course serves as a foundation for future sales courses. The instructional approach combines both traditional and innovative presentations of course content that is dependent upon student involvement. The content covers the role of sales, steps of the selling process, the importance of communication skills and a positive attitude. In addition, special attention is devoted throughout the course on how the salesperson is viewed as an ambassador for the company that they represent. (Prerequisite: None)

Principles of Marketing**MKT 1810 3.00 credits**

This course covers the basic marketing concepts for Marketing and non-marketing students. Developing a rational marketing approach to the practices of modern marketing as they are used in a wide variety of settings. The course includes discussion on the marketing mix, the four p's of marketing, channels of distribution, target marketing, ethic, social responsibility, global marketing and the impact of the internet.

Internship**MKT 1817 3.00 credits**

This course allows the student to receive practical experience in his/her chosen career area. A training plan outlining what will be learned is jointly developed among the student, employer and college. (Prerequisites: None)

Introduction to Business**MKT 1820 3.00 credits**

This course covers the basic fundamentals of the world of business. Emphasis will be placed on the nature of business and the trends that will change the way business is conducted in the twenty-first century. The latest technology and business terms will provide an updated look at the business world.

Customer Service**MKT 1830 3.00 credits**

This course covers the importance of customer service and how the student can achieve quality customer service. Total Quality Management is an essential part of customer service and how quality service is relayed to the consumer. This course explains how to develop a service attitude, dealing with various types of customers, handling customer complaints,

Principles of Advertising**MKT 1840 3.00 credits**

This course provides a broad overview of the entire advertising and sales promotion industry. The focus will cover the entire spectrum of paid and non-paid activities designed to encourage the purchase and use of products, services and ideas. Discussion will include theory and practice about advertising media, public relations, packaging, special events,

decision making and using the team concept.

creation of ads and evaluation.

Professional Development I

MKT 1850 1.00 credits

This course focuses on the importance of professionalism and leadership opportunities. Students will have the opportunity to improve their understanding, interpretation and participation in a variety of activities within the college and their community. Attendance in professional conferences, seminars and meetings will be required.

Principles of Management

MKT 1900 3.00 credits

This course will introduce the student to the responsibilities and roles of managers and supervisors. Course focus will be on topics related to the management functions of planning, organizing, leading and controlling. Project management, the decision-making process, organizational structures and team skills will be explored. Students will also be exposed to financial, economic and productivity tools for use in management.

Entrepreneurship

MKT 1910 3.00 credits

This course utilizes a variety of tools to stimulate student interest and to promote learning. We will discuss the importance of entrepreneurship in our business climate with an emphasis on the small business. The course culminates with each student creating parts of a business plan. (Prerequisites: None)

Marketing Research

MKT 1920 3.00 credits

This course involves practical application of the concepts of involved in marketing research. Students will work in teams to explore the fundamentals of marketing research by completing a major project. The course content includes: finding secondary data, conducting focus groups, organizing observational research, creating surveys, statistical analysis and report writing.

Human Resource Management

MKT 1930 3.00 credits

This course focuses on human resource management issues. The course covers the techniques and legal aspects of recruiting, hiring, firing, promotion, documentation, evaluation and other areas essential to the personnel function. (Prerequisites: None)

Leadership Strategies

MKT 1940 3.00 credits

This course is designed to help students recognize their leadership potential and help improve their interpersonal skills needed in today's workplace. Students will explore various leadership strategies through self assessment and reflection. Self assessments will then be used to provide the framework for developing career portfolios. Resume development, interviewing skills and networking are an integral part of the course.

Internship

MKT 2817 3.00 credits

This course allows students the opportunity to continue to develop their marketing & management skills in an internship. (Prerequisites: None)

Public Speaking

COMM110 3.00 credits

This course develops or improves effective performance in acquiring, evaluating, organizing, and communicating information. Learners develop and apply critical and creative thinking to structuring arguments, making presentations, using multimedia, and supporting each other in impromptu and extemporaneous speaking. Course de-emphasizes competition and stresses personal and workplace effectiveness in communication skills. (Prerequisites: Must have a score of 86 or higher on the Sentence Skills portion of the Accuplacer test or completion of ENGL 0080 and ENGL 0090 with a grade of C or higher) (MNTC 1: Communication)

Composition

ENGL100 4.00 credits

Composition is concerned with developing, through theory and practice, the ability to communicate in written form for personal and professional reasons. Students will develop writing skills, analytical skills, and critical thinking skills. Students will complete readings, papers, grammar exercises, and in-class activities. Students will learn methods of writing informatively and persuasively. (Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher AND a score of 85.5 or higher on the Sentence Skills portion of the Accuplacer test or completion of ENGL 0080 and ENGL 0090 with a grade of C or higher)(MNTC 1: Communication) This course has an online option.

Marketing Management

Certificate • 30 Credits

CERT3274



Degree Description

The Marketing Management Certificate is designed to provide skills for those students wishing to complete a compressed program of study with specific skills unique to their individual needs. With advisor approval, students will develop a program of study consisting of 18 credits of technical courses, 12 credits of core management courses. Students are encouraged to complete an internship, providing experience in the world of work.

Admission Dates: Fall and Spring Semester

Offered on the North Mankato Campus

The course requirements listed below are specific to the 2013-2014 school year. If you need to view the program from previous years view our [Catalog Archive](#).

This credential is part of the Marketing Management department. [See the Marketing Management department page for more details](#)

Required Technical Courses (4 Courses)

Complete all of the following courses

- [MKT 1810](#) Principles of Marketing (3 Credits)
- [MKT 1820](#) Introduction to Business (3 Credits)
- [MGT 2810](#) Retail Management (3 Credits)
- [MGT 2820](#) Introduction to Management Information Systems (3 Credits)

Elective Credits (18 Credits)

Choose 18 credits from the following courses:

- [MKT 1800](#) Introduction to Sales (3 Credits)
- [MKT 1817](#) Internship (3 Credits)
- [MKT 1830](#) Customer Service (3 Credits)
- [MKT 1840](#) Principles of Advertising (3 Credits)
- [MKT 1850](#) Professional Development I (1 Credit)
- [MKT 1900](#) Principles of Management (3 Credits)
- [MKT 1910](#) Entrepreneurship (3 Credits)
- [MKT 1920](#) Marketing Research (3 Credits)
- [MKT 1930](#) Human Resource Management (3 Credits)
- [MKT 1940](#) Leadership Strategies (3 Credits)
- [MKT 2817](#) Internship (3 Credits)
- [MKT 2827](#) Marketing Management Internship (1 - 3 Credits)
- [OTEC2810](#) Computer Technology (3 Credits)

PLEASE NOTE: All program plans are preliminary and curriculum may change without notice. Your [catalog of record](#) may have different requirements.

Marketing Management - Certificate of Training Course Descriptions**Principles of Marketing****MKT 1810 3.00 credits**

This course covers the basic marketing concepts for Marketing and non-marketing students. Developing a rational marketing approach to the practices of modern marketing as they are used in a wide variety of settings. The course includes discussion on the marketing mix, the four p's of marketing, channels of distribution, target marketing, ethic, social responsibility, global marketing and the impact of the internet.

Introduction to Business**MKT 1820 3.00 credits**

This course covers the basic fundamentals of the world of business. Emphasis will be placed on the nature of business and the trends that will change the way business is conducted in the twenty-first century. The latest technology and business terms will provide an updated look at the business world.

Retail Management**MGT 2810 3.00 credits**

This course focuses on the changing demographics of retail marketing, the growth of new retail formats and the use of information technology to enable quick responses to market dynamics through customer service, vendor-retailer partnering and employee diversity. (Prerequisites: None)

Introduction to Management Information Systems**MGT 2820 3.00 credits**

This course is an introduction to management information systems (MIS) and involves the interactions between technology and business practices. The course involves the planning, organizing and controlling of information technologies related to organizational objectives. Specific attention will be given to database management with a focus on contact management. The course also involves the use of spreadsheet applications, collaborative tools, and other technologies utilized in the business environment. (Prerequisites: None)

Introduction to Sales**MKT 1800 3.00 credits**

This course serves as a foundation for future sales courses. The instructional approach combines both traditional and innovative presentations of course content that is dependent upon student involvement. The content covers the role of sales, steps of the selling process, the importance of communication skills and a positive attitude. In addition, special attention is devoted throughout the course on how the salesperson is viewed as an ambassador for the company that they represent. (Prerequisite: None)

Internship**MKT 1817 3.00 credits**

This course allows the student to receive practical experience in his/her chosen career area. A training plan outlining what will be learned is jointly developed among the student, employer and college. (Prerequisites: None)

Customer Service**MKT 1830 3.00 credits**

This course covers the importance of customer service and how the student can achieve quality customer service. Total Quality Management is an essential part of customer service and how quality service is relayed to the consumer. This

Principles of Advertising**MKT 1840 3.00 credits**

This course provides a broad overview of the entire advertising and sales promotion industry. The focus will cover the entire spectrum of paid and non-paid activities designed to encourage the purchase and use of products, services and

course explains how to develop a service attitude, dealing with various types of customers, handling customer complaints, decision making and using the team concept.

Professional Development I

MKT 1850 1.00 credits

This course focuses on the importance of professionalism and leadership opportunities. Students will have the opportunity to improve their understanding, interpretation and participation in a variety of activities within the college and their community. Attendance in professional conferences, seminars and meetings will be required.

Entrepreneurship

MKT 1910 3.00 credits

This course utilizes a variety of tools to stimulate student interest and to promote learning. We will discuss the importance of entrepreneurship in our business climate with an emphasis on the small business. The course culminates with each student creating parts of a business plan. (Prerequisites: None)

Human Resource Management

MKT 1930 3.00 credits

This course focuses on human resource management issues. The course covers the techniques and legal aspects of recruiting, hiring, firing, promotion, documentation, evaluation and other areas essential to the personnel function. (Prerequisites: None)

Internship

MKT 2817 3.00 credits

This course allows students the opportunity to continue to develop their marketing & management skills in an internship. (Prerequisites: None)

Computer Technology

ideas. Discussion will include theory and practice about advertising media, public relations, packaging, special events, creation of ads and evaluation.

Principles of Management

MKT 1900 3.00 credits

This course will introduce the student to the responsibilities and roles of managers and supervisors. Course focus will be on topics related to the management functions of planning, organizing, leading and controlling. Project management, the decision-making process, organizational structures and team skills will be explored. Students will also be exposed to financial, economic and productivity tools for use in management.

Marketing Research

MKT 1920 3.00 credits

This course involves practical application of the concepts of involved in marketing research. Students will work in teams to explore the fundamentals of marketing research by completing a major project. The course content includes: finding secondary data, conducting focus groups, organizing observational research, creating surveys, statistical analysis and report writing.

Leadership Strategies

MKT 1940 3.00 credits

This course is designed to help students recognize their leadership potential and help improve their interpersonal skills needed in today's workplace. Students will explore various leadership strategies through self assessment and reflection. Self assessments will then be used to provide the framework for developing career portfolios. Resume development, interviewing skills and networking are an integral part of the course.

Marketing Management Internship

MKT 2827 1 - 3 credits

This course allows the student to receive practical experience in his/her chosen career area. This internship is designed to offer students a customized experience. A training plan, outlining what will be learned, is jointly developed between the student, employer and the department site coordinator. This course is designed for students in Restaurant Management who need a minimum of 9 credits of internship or for Marketing Management or Business Management students wishing to further their internship experience with elective credits. (Prerequisites: It is recommended, after advisor review, that students register for this variable credit course after completing MKT 1817 & 2817)

OTEC2810 3.00 credits

This course provides computer technical information that goes beyond the basics for college educated students. It covers not only hardware and software but the new, emerging technology trends that affect computing and everyday life. Topics such as networks, data security, personal privacy, online safety, digital rights, and Internet usage will be addressed. There will be an emphasis on social and ethical issues for thought-provoking course discussions. (Prerequisite: None)

Mechatronics Engineering Technology Department Overview

Mechatronics is a new and rapidly growing field that integrates electronics, mechanics, pneumatics, hydraulics, and computer control systems to create new and improved automated manufacturing production systems. This program is designed for people who are interested in plant maintenance, set up, installation, and assembly. These jobs are found in medical, electronics, agriculture, biotechnology, and automotive industries.

Core Competencies

1. Demonstrate effective participation on a team.
2. Perform assembly, repair, operation and adjustment of manufacturing equipment.
3. Conduct trouble shooting of manufacturing equipment.
4. Diagnose and repair electromechanical systems.
5. Perform parts department operations including assembly, inventory, quality assurance, and testing.
6. Use test equipment.

Department Faculty

David Ewel, Eric Hall, Doug Laven, Jerry Soost

Mechatronics Engineering Technology Degrees

Mechatronics Engineering Technology AAS Degree
Intermediate Mechatronics Engineering Technology Diploma
Basic Mechatronics Engineering Technology Certificate
Mechatronics Industrial Maintenance Certificate

Mechatronics Engineering Technology

A.A.S. Degree • 71 Credits

AAS 3470



Degree Description

Mechatronics is a new and rapidly growing field that integrates electronics, mechanics, pneumatics, hydraulics, and computer control systems to create new and improved automated manufacturing production systems. This program is designed for people who are interested in plant maintenance, set up, installation, and assembly. These jobs are found in medical, electronics, agriculture, biotechnology, and automotive industries.

Admission Dates: Fall and Spring Semester

Offered on the North Mankato Campus

The course requirements listed below are specific to the 2013-2014 school year. If you need to view the program from previous years view our [Catalog Archive](#).

This credential is part of the Mechatronics Engineering Technology department. [See the Mechatronics Engineering Technology department page for more details](#)

Required Technical Courses (18 Courses)

Select the following courses:

- [MECA1000](#) Introduction to Mechatronics (3 Credits)
- [MECA1122](#) Electricity - Devices and Circuits I (3 Credits)
- [MECA1131](#) Computer Applications (3 Credits)
- [MECA1140](#) Introduction to Geometric Dimensioning & Tolerancing (1 Credit)
- [MECA1210](#) Digital Electronics (3 Credits)
- [MECA1220](#) Mechanical Systems (3 Credits)
- [MECA1222](#) Electricity - Devices and Circuits II (3 Credits)
- [MECA1240](#) Quality Concepts in Manufacturing (2 Credits)
- [MECA1250](#) Mechatronics Systems Operations I (3 Credits)
- [MECA1270](#) Modeling and Simulation (3 Credits)
- [MECA2110](#) Sensors and Control (3 Credits)
- [MECA2115](#) SolidWorks II (3 Credits)
- [MECA2120](#) Pneumatics Systems (3 Credits)
- [MECA2130](#) Hydraulics (3 Credits)
- [MECA2150](#) Mechatronics Systems Operations II (3 Credits)
- [MECA2235](#) Robotics & Industrial Automation (3 Credits)
- [MECA2240](#) Senior Project (5 Credits)
- [MECA2250](#) Mechatronics Systems Operations III (3 Credits)

Required Liberal Arts and Sciences (5 Courses)

To earn an AAS degree, students must complete 18 MNTC credits in 3 of the 10 MNTC goal areas.

The following courses are required:

- [ENGL100](#) Composition (4 Credits)
- [ENGL240](#) Technical Communication (4 Credits)
- [COMM110](#) Public Speaking (3 Credits)
- Or
- [COMM120](#) Small Group Communication (3 Credits)
- [PHYS101](#) Introductory Physics (3 Credits)
- [MATH120](#) College Algebra (4 Credits)

PLEASE NOTE: All program plans are preliminary and curriculum may change without notice. Your [catalog of record](#) may have different requirements.

Mechatronics Engineering Technology - Associate of Applied Science Degree Course Descriptions**Introduction to Mechatronics****MECA1000 3.00 credits**

Introduction to Engineering Design is a foundation course in the Mechatronics program. By exploring various technology systems and manufacturing processes, students will learn how technicians use technology in manufacturing and production settings. Theoretical and hands-on problem-solving activities are emphasized. This course will also engage the student to the proper and safe use of hand and shop tools. Hands-on labs and software are used as learning tools for students to design and produce projects related to industry. Students should take this as the first course in the sequence of Mechatronics courses. This course will also provide an overview of decision-making techniques and the application and benefits of decision-making using the Value Method process. (Prerequisites: None)

Computer Applications**MECA1131 3.00 credits**

This course is designed to provide students programs enrolled in technical programs an understanding of how the computer can be used as a tool to address a variety of applications utilizing input and output sources common to industry. Activities will also include, but are not limited to browser usage, word processing, spreadsheets, graphing capabilities, engineering scheduling applications and modeling and simulation software. (Prerequisites: None)

Digital Electronics**MECA1210 3.00 credits**

This course explores the general fundamentals of digital electronic circuits. To learn the theory and operation of digital electronics, students will get hands-on experience with basic logic gates; sequential logic circuits, such as flip-flops, counters, and shift registers; and combinational logic circuits that include encoders, decoders, multiplexers, and arithmetic devices. A variety of measurement equipment will be used to test and troubleshoot solid state and digital circuits created on breadboards during lab sessions. Teamwork, critical thinking skills, and practical applications of circuits will be emphasized. (Prerequisite: None)

Electricity - Devices and Circuits I**MECA1122 3.00 credits**

This course provides an exploration of the basics in electricity and electronics. Topics include an overview of direct current, circuit laws, components, and use of test equipment. Students learn the basic technique of troubleshooting electric circuits, including measurement techniques, analysis of faults, and repair procedures. Teamwork, critical thinking, and problem solving are emphasized. Hands-on experience and practical applications are included. (Prerequisites: Must have a score of 56 or higher on the Arithmetic portion of the Accuplacer test or Instructor approval)

Introduction to Geometric Dimensioning & Tolerancing**MECA1140 1.00 credits**

Students receive step-by-step instruction in Geometric Dimensioning & Tolerancing (GD&T) fundamentals with detailed explanations of each topic, GD&T symbols and definitions. Practice exercises are used throughout the instruction to provide additional discussion and learning opportunities. Students also learn to apply GD&T to industry-standard drawings. (Prerequisite: None)

Mechanical Systems**MECA1220 3.00 credits**

This course includes an introduction to mechanical drive systems, power transmission systems, chain drives, v-belt and, multiple shaft drives, linear motion assemblies, and auxiliary control functions. The student will study the application of spur, helical, bevel and worm gears as well as the use of keys, pins, and splines to attach gears to shafts. Machine elements such as; displacement, velocity, acceleration, springs, power screws, brakes and clutches will also be topics covered. Computer simulation and 3D software will be used throughout the course. Troubleshooting of mechanical systems will be emphasized. Technical writing skills and safety procedures will be implemented throughout the course. (Prerequisites: PHYS 101 or comparable with approval of Instructor)

Electricity - Devices and Circuits II

MECA1222 3.00 credits

This course provides an exploration of the basics in electricity and electronics. Topics include an overview of alternating current, circuit laws, components, and use of test equipment. Students learn the basic technique of troubleshooting electric circuits, including measurement techniques, analysis of faults, and repair procedures. Teamwork, critical thinking, and problem solving are emphasized. Hands-on experience and practical applications are included. (Prerequisites: MECA 1122)

Mechatronics Systems Operations I

MECA1250 3.00 credits

This course will provide the student with the principles of programmable logic controllers (PLC) hardware and fundamental sequence control systems. The student will gain essential knowledge necessary to create and edit basic PLC programs that will include timers, counters and special function blocks. As well as gaining an understanding of interfacing discrete input-output (I/O). The student will also perform fundamental PLC troubleshooting procedures. Technical writing skills and safety procedures will be implemented throughout the course. (Prerequisites: MECA 1122)

Sensors and Control

MECA2110 3.00 credits

This course will provide students with the principles of measurement and control systems. The student will gain an understanding of different sensor technologies used to measure and detect physical properties used in a variety of electro mechanical, electro hydraulic and electro pneumatic systems. The student, through lab work, will also learn how to use and troubleshoot sensors used in open and closed loop control systems. Technical writing skills and safety procedures will be implemented throughout the course. This course assumes the student understands basic electrical, mechanical, and programming concepts. (Prerequisites: MECA 1122)

Pneumatics Systems

MECA2120 3.00 credits

This course provides the basics of pneumatically operated devices and the systems found in modern industrial machinery and automation. Topics include proper safety procedures, basic laws of fluid mechanics, standard symbols, pumps, control valves, control assemblies, actuators, maintenance procedures, and switching and control devices. At the completion of this course, the student will be able to apply basic laws of fluid mechanics to design and specify characteristics of a pneumatic system; select and size actuators and control valves, and match the pneumatic components with its ANSI symbol. Upon completion of this course, the student should be able to identify long-term

Quality Concepts in Manufacturing

MECA1240 2.00 credits

This is an introductory course to quality for students who are pursuing careers in technical fields. Topics include fundamentals of statistics, control chart variables and attributes, reliability and quality costs. This course also introduces the student to the requirements of ISO 9000, Lean concepts, Value Stream Mapping and 5S philosophies, principles and techniques of managing quality. (Prerequisites: Must have a score of 56 or higher on the Arithmetic portion of the Accuplacer test or Instructor approval)

Modeling and Simulation

MECA1270 3.00 credits

This course will provide students with the understanding of the interaction of the parts of a system, and of the system as a whole. A unified approach to modeling of dynamic systems using computer simulation and model validation is used. Emphasis will be on modeling and simulation of mechanical parts and assemblies, electronic circuits, fluid power systems and PLC controlled automation systems. Technical writing skills and safety procedures will be implemented throughout the course. (Prerequisites: MECA 1131)

SolidWorks II

MECA2115 3.00 credits

Student will advance their SolidWorks skills beyond core concepts of parts, assemblies and drawings. Learning outcomes are designed to prepare students in the more advanced concepts evaluated in the Certified SolidWorks Associate Exam in areas such as: Advanced Parts, Advanced Assemblies, Advanced Surfacing, Sheet Metal, Routing and Simulation. (Prerequisite: MECA 1270)

Hydraulics

MECA2130 3.00 credits

This course provides the basics of hydraulically operated devices and systems found in modern industrial machinery and automation. Topics include proper safety procedures, basic laws of fluid mechanics, standard symbols, pumps, control valves, control assemblies, actuators, maintenance procedures, and switching and control devices. At the completion of this course, the student will be able to design and specify characteristics of a hydraulic system; select and size actuators, and match the hydraulic component name with its ANSI symbol. Upon completion of this course, the student should be able to identify long-term symptoms associated with a lack of preventive maintenance of hydraulic components

symptoms associated with a lack of preventive maintenance of pneumatic components while demonstrating good safety practices including lock out procedures. Technical writing skills and safety procedures will be implemented throughout the course. (Prerequisites: None)

while demonstrating good safety practices including lock out procedures. Technical writing skills and safety procedures will be implemented throughout the course. (Prerequisites: None)

Mechatronics Systems Operations II

MECA2150 3.00 credits

This course will focus on advanced principles of Programmable Logic Controllers (PLC). The student will become familiar with interfacing input and output with automation motion control systems used in manufacturing. Introduction of analog inputs and outputs, internal registers and tables, comparison functions, computational functions, data move functions, subroutines, data manipulation and sequencing functions, high speed counting, analog functions, trigonometric and advanced math functions. Technical writing skills and safety procedures will be implemented throughout the course. (Prerequisite: MECA 1250)

Robotics & Industrial Automation

MECA2235 3.00 credits

This course will provide students with the principles of programming and control of automated systems, closed-loop control systems and multi-axis robotic systems used in an industrial environment. The student will gain the ability to program and implement various types of automated machine systems, integrate actuators and sensors commonly found in automated systems, and setup an automated robotic work cell. The student will also perform fundamental automated system troubleshooting procedures. Technical writing skills and safety procedures will be implemented throughout the course. This course builds on the student's understanding of basic electrical, mechanical, pneumatic, and programming concepts. (Prerequisite: MECA 1230, 2110, 2150)

Senior Project

MECA2240 5.00 credits

The Senior Project at South Central College is an opportunity for students to demonstrate what they know and to showcase their achievement. The project must be successfully completed as a component of the Mechatronics program, which is a required course for all graduating seniors. The Senior Project is a fitting conclusion to a student's education because through this endeavor, one is able to demonstrate accumulated skills in reasoning, research, problem solving, human interaction, organization, and public speaking. (Prerequisite: MECA 2150 or Instructor Approval)

Mechatronics Systems Operations III

MECA2250 3.00 credits

This course will focus on advanced principals of Programmable Logic Controllers (PLC). The student will become familiar with interfacing input and output with automation motion control systems used in manufacturing. Introduction of PLC networking, Supervisory Control and Data Acquisition (SCADA), Proportional - Integral - Derivative (PID) Control and the use of Human Machine Interface (HMI) in a Control System. Troubleshooting exercises, technical writing assignments and safety procedures will be implemented throughout the course. (Prerequisite: MECA 2150)

Composition

ENGL100 4.00 credits

Composition is concerned with developing, through theory and practice, the ability to communicate in written form for personal and professional reasons. Students will develop writing skills, analytical skills, and critical thinking skills. Students will complete readings, papers, grammar exercises, and in-class activities. Students will learn methods of writing informatively and persuasively. (Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher AND a score of 85.5 or higher on the Sentence Skills portion of the Accuplacer test or completion of ENGL 0080 and ENGL 0090 with a grade of C or higher)(MNTC 1: Communication) This course has an online option.

Technical Communication

ENGL240 4.00 credits

This course will teach the essential skills of technical communication. It is an introduction in written communication, design production, and design evaluation of technical information. Adapting technical material using a procedural writing style targeted for specific audiences is emphasized. Students will be using rhetorical analysis, collaborative writing, and usability testing. Topics include the design, writing, and editing of proposals and reports. (Prerequisite: ENGL 100 or a score of 104 or higher on the Sentence Skills portion of the Accuplacer test) (MNTC 1: Communication)

Public Speaking

COMM110 3.00 credits

This course develops or improves effective performance in

Small Group Communication

COMM120 3.00 credits

This course develops or improves effective communication for

acquiring, evaluating, organizing, and communicating information. Learners develop and apply critical and creative thinking to structuring arguments, making presentations, using multimedia, and supporting each other in impromptu and extemporaneous speaking. Course de-emphasizes competition and stresses personal and workplace effectiveness in communication skills. (Prerequisites: Must have a score of 86 or higher on the Sentence Skills portion of the Accuplacer test or completion of ENGL 0080 and ENGL 0090 with a grade of C or higher) (MNTC 1: Communication)

Introductory Physics

PHYS101 3.00 credits

A one semester course covering the basic principles of physics at a conceptual level and with a minimal amount of math. Topics generally included mechanics, simple machines, atomic structure, heat, light, and sound. Lecture and laboratory. (Prerequisites: Must have a score of 56 or higher on the Arithmetic portion of the Accuplacer test or completion of MATH 0075 with a grade of C or higher) (MNTC 3: Natural Sciences)

leaders and participants in the small group setting. Learners develop and apply critical thinking and communication skills through class discussion, group activities, and group presentations. (Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher) (MNTC 1, 2: Communication, Critical Thinking)

College Algebra

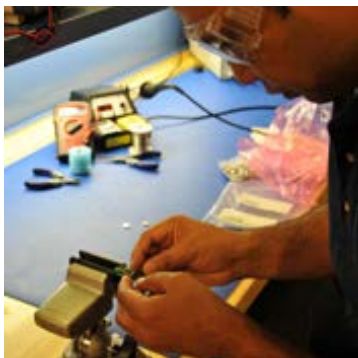
MATH120 4.00 credits

This course is mainly concerned with functions, most of which are algebraic. It begins with a general treatment of equations and inequalities and then proceeds to cover linear functions, quadratic functions, other polynomial and rational functions, piecewise functions, equations involving radicals and absolute values, logarithms and exponentials, systems of equations and inequalities, permutations and combinations. (Prerequisites: Two years of high school algebra or completion of MATH 0085 with a grade of C or higher, or a score of 75.5 on the Elementary Algebra portion of the Accuplacer test AND a score of 49.5 or higher on the College Level Math portion of the Accuplacer test) (MNTC 4: Mathematical/Logical Reasoning)

Intermediate Mechatronics Engineering Technology

Diploma • 38 Credits

DIP 3485



Degree Description

Mechatronics is a new and rapidly growing field that integrates electronics, mechanics, pneumatics, hydraulics, and computer control systems to create new and improved automated manufacturing production systems. This program is designed for people who are interested in plant maintenance, set up, installation, and assembly. These jobs are found in medical, electronics, agriculture, biotechnology, and automotive industries.

Admission Dates: Fall and Spring Semester

Offered on the North Mankato Campus

The course requirements listed below are specific to the 2013-2014 school year. If you need to view the program from previous years view our [Catalog Archive](#).

This credential is part of the Mechatronics Engineering Technology department. [See the Mechatronics Engineering Technology department page for more details](#)

Required Technical Courses (10 Courses)

Complete the following courses:

- [MECA1000](#) Introduction to Mechatronics (3 Credits)
- [MECA1122](#) Electricity - Devices and Circuits I (3 Credits)
- [MECA1131](#) Computer Applications (3 Credits)
- [MECA1140](#) Introduction to Geometric Dimensioning & Tolerancing (1 Credit)
- [MECA1210](#) Digital Electronics (3 Credits)
- [MECA1220](#) Mechanical Systems (3 Credits)
- [MECA1222](#) Electricity - Devices and Circuits II (3 Credits)
- [MECA1250](#) Mechatronics Systems Operations I (3 Credits)
- [MECA1270](#) Modeling and Simulation (3 Credits)
- [MECA2110](#) Sensors and Control (3 Credits)
- [MECA2115](#) SolidWorks II (3 Credits)
- [MECA2120](#) Pneumatics Systems (3 Credits)
- [MECA2130](#) Hydraulics (3 Credits)
- [MECA2150](#) Mechatronics Systems Operations II (3 Credits)
- [MECA2250](#) Mechatronics Systems Operations III (3 Credits)

Required Liberal Arts and Sciences (3 Courses)

Choose the following courses:

- [ENGL100](#) Composition (4 Credits)
- [ENGL240](#) Technical Communication (4 Credits)
- [MATH120](#) College Algebra (4 Credits)
- [PHYS101](#) Introductory Physics (3 Credits)

PLEASE NOTE: All program plans are preliminary and curriculum may change without notice. Your [catalog of record](#) may have different requirements.

Intermediate Mechatronics Engineering Technology - Diploma of Occupational Proficiency Course Descriptions

Introduction to Mechatronics

MECA1000 3.00 credits

Introduction to Engineering Design is a foundation course in the Mechatronics program. By exploring various technology systems and manufacturing processes, students will learn how technicians use technology in manufacturing and production settings. Theoretical and hands-on problem-solving activities are emphasized. This course will also engage the student to the proper and safe use of hand and shop tools. Hands-on labs and software are used as learning tools for students to design and produce projects related to industry. Students should take this as the first course in the sequence of Mechatronics courses. This course will also provide an overview of decision-making techniques and the application and benefits of decision-making using the Value Method process. (Prerequisites: None)

Computer Applications

MECA1131 3.00 credits

This course is designed to provide students programs enrolled in technical programs an understanding of how the computer can be used as a tool to address a variety of applications utilizing input and output sources common to industry. Activities will also include, but are not limited to browser usage, word processing, spreadsheets, graphing capabilities, engineering scheduling applications and modeling and simulation software. (Prerequisites: None)

Digital Electronics

MECA1210 3.00 credits

This course explores the general fundamentals of digital electronic circuits. To learn the theory and operation of digital electronics, students will get hands-on experience with basic logic gates; sequential logic circuits, such as flip-flops, counters, and shift registers; and combinational logic circuits that include encoders, decoders, multiplexers, and arithmetic devices. A variety of measurement equipment will be used to test and troubleshoot solid state and digital circuits created on breadboards during lab sessions. Teamwork, critical thinking skills, and practical applications of circuits will be emphasized. (Prerequisite: None)

Electricity - Devices and Circuits I

MECA1122 3.00 credits

This course provides an exploration of the basics in electricity and electronics. Topics include an overview of direct current, circuit laws, components, and use of test equipment. Students learn the basic technique of troubleshooting electric circuits, including measurement techniques, analysis of faults, and repair procedures. Teamwork, critical thinking, and problem solving are emphasized. Hands-on experience and practical applications are included. (Prerequisites: Must have a score of 56 or higher on the Arithmetic portion of the Accuplacer test or Instructor approval)

Introduction to Geometric Dimensioning & Tolerancing

MECA1140 1.00 credits

Students receive step-by-step instruction in Geometric Dimensioning & Tolerancing (GD&T) fundamentals with detailed explanations of each topic, GD&T symbols and definitions. Practice exercises are used throughout the instruction to provide additional discussion and learning opportunities. Students also learn to apply GD&T to industry-standard drawings. (Prerequisite: None)

Mechanical Systems

MECA1220 3.00 credits

This course includes an introduction to mechanical drive systems, power transmission systems, chain drives, v-belt and, multiple shaft drives, linear motion assemblies, and auxiliary control functions. The student will study the application of spur, helical, bevel and worm gears as well as the use of keys, pins, and splines to attach gears to shafts. Machine elements such as; displacement, velocity, acceleration, springs, power screws, brakes and clutches will also be topics covered. Computer simulation and 3D software will be used throughout the course. Troubleshooting of mechanical systems will be emphasized. Technical writing skills and safety procedures will be implemented throughout the course. (Prerequisites: PHYS 101 or comparable with approval of Instructor)

Electricity - Devices and Circuits II

MECA1222 3.00 credits

This course provides an exploration of the basics in electricity and electronics. Topics include an overview of alternating current, circuit laws, components, and use of test equipment. Students learn the basic technique of troubleshooting electric circuits, including measurement techniques, analysis of faults, and repair procedures. Teamwork, critical thinking, and problem solving are emphasized. Hands-on experience and practical applications are included. (Prerequisites: MECA 1122)

Modeling and Simulation

MECA1270 3.00 credits

This course will provide students with the understanding of the interaction of the parts of a system, and of the system as a whole. A unified approach to modeling of dynamic systems using computer simulation and model validation is used. Emphasis will be on modeling and simulation of mechanical parts and assemblies, electronic circuits, fluid power systems and PLC controlled automation systems. Technical writing skills and safety procedures will be implemented throughout the course. (Prerequisites: MECA 1131)

SolidWorks II

MECA2115 3.00 credits

Student will advance their SolidWorks skills beyond core concepts of parts, assemblies and drawings. Learning outcomes are designed to prepare students in the more advanced concepts evaluated in the Certified SolidWorks Associate Exam in areas such as: Advanced Parts, Advanced Assemblies, Advanced Surfacing, Sheet Metal, Routing and Simulation. (Prerequisite: MECA 1270)

Hydraulics

MECA2130 3.00 credits

This course provides the basics of hydraulically operated devices and systems found in modern industrial machinery and automation. Topics include proper safety procedures,

Mechatronics Systems Operations I

MECA1250 3.00 credits

This course will provide the student with the principles of programmable logic controllers (PLC) hardware and fundamental sequence control systems. The student will gain essential knowledge necessary to create and edit basic PLC programs that will include timers, counters and special function blocks. As well as gaining an understanding of interfacing discrete input-output (I/O). The student will also perform fundamental PLC troubleshooting procedures. Technical writing skills and safety procedures will be implemented throughout the course. (Prerequisites: MECA 1122)

Sensors and Control

MECA2110 3.00 credits

This course will provide students with the principles of measurement and control systems. The student will gain an understanding of different sensor technologies used to measure and detect physical properties used in a variety of electro mechanical, electro hydraulic and electro pneumatic systems. The student, through lab work, will also learn how to use and troubleshoot sensors used in open and closed loop control systems. Technical writing skills and safety procedures will be implemented throughout the course. This course assumes the student understands basic electrical, mechanical, and programming concepts. (Prerequisites: MECA 1122)

Pneumatics Systems

MECA2120 3.00 credits

This course provides the basics of pneumatically operated devices and the systems found in modern industrial machinery and automation. Topics include proper safety procedures, basic laws of fluid mechanics, standard symbols, pumps, control valves, control assemblies, actuators, maintenance procedures, and switching and control devices. At the completion of this course, the student will be able to apply basic laws of fluid mechanics to design and specify characteristics of a pneumatic system; select and size actuators and control valves, and match the pneumatic components with its ANSI symbol. Upon completion of this course, the student should be able to identify long-term symptoms associated with a lack of preventive maintenance of pneumatic components while demonstrating good safety practices including lock out procedures. Technical writing skills and safety procedures will be implemented throughout the course. (Prerequisites: None)

Mechatronics Systems Operations II

MECA2150 3.00 credits

This course will focus on advanced principles of Programmable Logic Controllers (PLC). The student will become familiar with interfacing input and output with

basic laws of fluid mechanics, standard symbols, pumps, control valves, control assemblies, actuators, maintenance procedures, and switching and control devices. At the completion of this course, the student will be able to design and specify characteristics of a hydraulic system; select and size actuators, and match the hydraulic component name with its ANSI symbol. Upon completion of this course, the student should be able to identify long-term symptoms associated with a lack of preventive maintenance of hydraulic components while demonstrating good safety practices including lock out procedures. Technical writing skills and safety procedures will be implemented throughout the course. (Prerequisites: None)

Mechatronics Systems Operations III

MECA2250 3.00 credits

This course will focus on advanced principals of Programmable Logic Controllers (PLC). The student will become familiar with interfacing input and output with automation motion control systems used in manufacturing. Introduction of PLC networking, Supervisory Control and Data Acquisition (SCADA), Proportional - Integral - Derivative (PID) Control and the use of Human Machine Interface (HMI) in a Control System. Troubleshooting exercises, technical writing assignments and safety procedures will be implemented throughout the course. (Prerequisite: MECA 2150)

Technical Communication

ENGL240 4.00 credits

This course will teach the essential skills of technical communication. It is an introduction in written communication, design production, and design evaluation of technical information. Adapting technical material using a procedural writing style targeted for specific audiences is emphasized. Students will be using rhetorical analysis, collaborative writing, and usability testing. Topics include the design, writing, and editing of proposals and reports. (Prerequisite: ENGL 100 or a score of 104 or higher on the Sentence Skills portion of the Accuplacer test) (MNTC 1: Communication)

Introductory Physics

PHYS101 3.00 credits

A one semester course covering the basic principles of physics at a conceptual level and with a minimal amount of math. Topics generally included mechanics, simple machines, atomic structure, heat, light, and sound. Lecture and laboratory. (Prerequisites: Must have a score of 56 or higher on the Arithmetic portion of the Accuplacer test or completion of MATH 0075 with a grade of C or higher) (MNTC 3: Natural Sciences)

automation motion control systems used in manufacturing. Introduction of analog inputs and outputs, internal registers and tables, comparison functions, computational functions, data move functions, subroutines, data manipulation and sequencing functions, high speed counting, analog functions, trigonometric and advanced math functions. Technical writing skills and safety procedures will be implemented throughout the course. (Prerequisite: MECA 1250)

Composition

ENGL100 4.00 credits

Composition is concerned with developing, through theory and practice, the ability to communicate in written form for personal and professional reasons. Students will develop writing skills, analytical skills, and critical thinking skills. Students will complete readings, papers, grammar exercises, and in-class activities. Students will learn methods of writing informatively and persuasively. (Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher AND a score of 85.5 or higher on the Sentence Skills portion of the Accuplacer test or completion of ENGL 0080 and ENGL 0090 with a grade of C or higher)(MNTC 1: Communication) This course has an online option.

College Algebra

MATH120 4.00 credits

This course is mainly concerned with functions, most of which are algebraic. It begins with a general treatment of equations and inequalities and then proceeds to cover linear functions, quadratic functions, other polynomial and rational functions, piecewise functions, equations involving radicals and absolute values, logarithms and exponentials, systems of equations and inequalities, permutations and combinations. (Prerequisites: Two years of high school algebra or completion of MATH 0085 with a grade of C or higher, or a score of 75.5 on the Elementary Algebra portion of the Accuplacer test AND a score of 49.5 or higher on the College Level Math portion of the Accuplacer test) (MNTC 4: Mathematical/Logical Reasoning)

Basic Mechatronics Engineering Technology

Certificate • 19 Credits

CERT3484

**Degree Description**

Mechatronics is a new and rapidly growing field that integrates electronics, mechanics, pneumatics, hydraulics, and computer control systems to create new and improved automated manufacturing production systems. This program is designed for people who are interested in plant maintenance, set up, installation, and assembly. These jobs are found in medical, electronics, agriculture, biotechnology, and automotive industries.

Admission Dates: Fall and Spring Semester**Offered on the North Mankato Campus**

The course requirements listed below are specific to the 2013-2014 school year. If you need to view the program from previous years view our [Catalog Archive](#).

This credential is part of the Mechatronics Engineering Technology department. [See the Mechatronics Engineering Technology department page for more details](#)

Required Technical Courses (7 Courses)

Complete the following courses:

[MECA1122](#) Electricity - Devices and Circuits I (3 Credits)

[MECA1131](#) Computer Applications (3 Credits)

[MECA1140](#) Introduction to Geometric Dimensioning & Tolerancing (1 Credit)

[MECA1220](#) Mechanical Systems (3 Credits)

[MECA1222](#) Electricity - Devices and Circuits II (3 Credits)

[MECA1250](#) Mechatronics Systems Operations I (3 Credits)

[PHYS101](#) Introductory Physics (3 Credits)

PLEASE NOTE: All program plans are preliminary and curriculum may change without notice. Your [catalog of record](#) may have different requirements.

Basic Mechatronics Engineering Technology - Certificate of Training Course Descriptions**Electricity - Devices and Circuits I****MECA1122 3.00 credits**

This course provides an exploration of the basics in electricity and electronics. Topics include an overview of direct current, circuit laws, components, and use of test equipment. Students learn the basic technique of troubleshooting electric circuits, including measurement techniques, analysis of faults, and repair procedures. Teamwork, critical thinking, and problem solving are emphasized. Hands-on experience and practical applications are included. (Prerequisites: Must have a score of 56 or higher on the Arithmetic portion of the Accuplacer test or Instructor approval)

Introduction to Geometric Dimensioning & Tolerancing**MECA1140 1.00 credits**

Students receive step-by-step instruction in Geometric Dimensioning & Tolerancing (GD&T) fundamentals with detailed explanations of each topic, GD&T symbols and definitions. Practice exercises are used throughout the instruction to provide additional discussion and learning opportunities. Students also learn to apply GD&T to industry-standard drawings. (Prerequisite: None)

Electricity - Devices and Circuits II**MECA1222 3.00 credits**

This course provides an exploration of the basics in electricity and electronics. Topics include an overview of alternating current, circuit laws, components, and use of test equipment. Students learn the basic technique of troubleshooting electric circuits, including measurement techniques, analysis of faults, and repair procedures. Teamwork, critical thinking, and problem solving are emphasized. Hands-on experience and practical applications are included. (Prerequisites: MECA 1122)

Computer Applications**MECA1131 3.00 credits**

This course is designed to provide students programs enrolled in technical programs an understanding of how the computer can be used as a tool to address a variety of applications utilizing input and output sources common to industry. Activities will also include, but are not limited to browser usage, word processing, spreadsheets, graphing capabilities, engineering scheduling applications and modeling and simulation software. (Prerequisites: None)

Mechanical Systems**MECA1220 3.00 credits**

This course includes an introduction to mechanical drive systems, power transmission systems, chain drives, v-belt and, multiple shaft drives, linear motion assemblies, and auxiliary control functions. The student will study the application of spur, helical, bevel and worm gears as well as the use of keys, pins, and splines to attach gears to shafts. Machine elements such as; displacement, velocity, acceleration, springs, power screws, brakes and clutches will also be topics covered. Computer simulation and 3D software will be used throughout the course. Troubleshooting of mechanical systems will be emphasized. Technical writing skills and safety procedures will be implemented throughout the course. (Prerequisites: PHYS 101 or comparable with approval of Instructor)

Mechatronics Systems Operations I**MECA1250 3.00 credits**

This course will provide the student with the principles of programmable logic controllers (PLC) hardware and fundamental sequence control systems. The student will gain essential knowledge necessary to create and edit basic PLC programs that will include timers, counters and special function blocks. As well as gaining an understanding of interfacing discrete input-output (I/O). The student will also perform fundamental PLC troubleshooting procedures. Technical writing skills and safety procedures will be implemented throughout the course. (Prerequisites: MECA 1122)

Introductory Physics

PHYS101 3.00 credits

A one semester course covering the basic principles of physics at a conceptual level and with a minimal amount of math. Topics generally included mechanics, simple machines, atomic structure, heat, light, and sound. Lecture and laboratory. (Prerequisites: Must have a score of 56 or higher on the Arithmetic portion of the Accuplacer test or completion of MATH 0075 with a grade of C or higher) (MNTC 3: Natural Sciences)

Mechatronics Industrial Maintenance

Certificate • 19 Credits

CERT3603



Degree Description

This 19 credit certificate is designed to prepare students to enter the Industrial Maintenance field in an entry-level position and to enhance the skills of students already employed in the field. This certificate will allow successful students to be proficient in many different areas including plant safety, reading technical drawings, mechanical drives, bearings, lubrication, alignment, pneumatics, industrial electricity, motor controls, boilers and welding. This stackable certificate allows a pathway for students to continue their education in Mechatronics.

Admission Dates: Fall Semester

Offered on the North Mankato Campus

The course requirements listed below are specific to the 2013-2014 school year. If you need to view the program from previous years view our [Catalog Archive](#).

This credential is part of the Mechatronics Engineering Technology department. [See the Mechatronics Engineering Technology department page for more details](#)

Required Technical Courses (7 Courses)

Complete the following courses: NOTE: MECA 1150 Boiler Operation Principles may be substituted for 1 credit of MECA 2240. Please see your advisor for assistance.

[MECA1122](#) Electricity - Devices and Circuits I (3 Credits)

[MECA1140](#) Introduction to Geometric Dimensioning & Tolerancing (1 Credit)

[MECA1220](#) Mechanical Systems (3 Credits)

[MECA1240](#) Quality Concepts in Manufacturing (2 Credits)

[MECA2120](#) Pneumatics Systems (3 Credits)

[MECA2240](#) Senior Project (5 Credits)

[CIM 2250](#) Applied Welding (2 Credits)

PLEASE NOTE: All program plans are preliminary and curriculum may change without notice. Your [catalog of record](#) may have different requirements.

Mechatronics Industrial Maintenance - Certificate of Training Course Descriptions

Electricity - Devices and Circuits I

MECA1122 3.00 credits

This course provides an exploration of the basics in electricity and electronics. Topics include an overview of direct current, circuit laws, components, and use of test equipment. Students learn the basic technique of troubleshooting electric circuits, including measurement techniques, analysis of faults, and repair procedures. Teamwork, critical thinking, and problem solving are emphasized. Hands-on experience and practical applications are included. (Prerequisites: Must have a score of 56 or higher on the Arithmetic portion of the Accuplacer test or Instructor approval)

Mechanical Systems

MECA1220 3.00 credits

This course includes an introduction to mechanical drive systems, power transmission systems, chain drives, v-belt and, multiple shaft drives, linear motion assemblies, and auxiliary control functions. The student will study the application of spur, helical, bevel and worm gears as well as the use of keys, pins, and splines to attach gears to shafts. Machine elements such as; displacement, velocity, acceleration, springs, power screws, brakes and clutches will also be topics covered. Computer simulation and 3D software will be used throughout the course. Troubleshooting of mechanical systems will be emphasized. Technical writing skills and safety procedures will be implemented throughout the course. (Prerequisites: PHYS 101 or comparable with approval of Instructor)

Pneumatics Systems

MECA2120 3.00 credits

This course provides the basics of pneumatically operated devices and the systems found in modern industrial machinery and automation. Topics include proper safety procedures, basic laws of fluid mechanics, standard symbols, pumps, control valves, control assemblies, actuators, maintenance procedures, and switching and control devices. At the completion of this course, the student will be able to apply basic laws of fluid mechanics to design and specify characteristics of a pneumatic system; select and size actuators and control valves, and match the pneumatic components with its ANSI symbol. Upon completion of this course, the student should be able to identify long-term symptoms associated with a lack of preventive maintenance of

Introduction to Geometric Dimensioning & Tolerancing

MECA1140 1.00 credits

Students receive step-by-step instruction in Geometric Dimensioning & Tolerancing (GD&T) fundamentals with detailed explanations of each topic, GD&T symbols and definitions. Practice exercises are used throughout the instruction to provide additional discussion and learning opportunities. Students also learn to apply GD&T to industry-standard drawings. (Prerequisite: None)

Quality Concepts in Manufacturing

MECA1240 2.00 credits

This is an introductory course to quality for students who are pursuing careers in technical fields. Topics include fundamentals of statistics, control chart variables and attributes, reliability and quality costs. This course also introduces the student to the requirements of ISO 9000, Lean concepts, Value Stream Mapping and 5S philosophies, principles and techniques of managing quality. (Prerequisites: Must have a score of 56 or higher on the Arithmetic portion of the Accuplacer test or Instructor approval)

Senior Project

MECA2240 5.00 credits

The Senior Project at South Central College is an opportunity for students to demonstrate what they know and to showcase their achievement. The project must be successfully completed as a component of the Mechatronics program, which is a required course for all graduating seniors. The Senior Project is a fitting conclusion to a student's education because through this endeavor, one is able to demonstrate accumulated skills in reasoning, research, problem solving, human interaction, organization, and public speaking. (Prerequisite: MECA 2150 or Instructor Approval)

pneumatic components while demonstrating good safety practices including lock out procedures. Technical writing skills and safety procedures will be implemented throughout the course. (Prerequisites: None)

Applied Welding

CIM 2250 2.00 credits

This course covers necessary topics for the production of the advanced project. Topics included will be Beginner and Advance Tungsten Inert Gas Welding (TIG). (Prerequisite: CIM 1110)

Medical Assistant Department Overview

The Medical Assistant is a professional, multi-skilled person dedicated to assisting in patient care management. The practitioner performs administrative duties which might include answering the telephones, greeting patients, updating and filing patient medical records, filling out insurance forms, scheduling appointments and arranging admission and laboratory services. They may also be involved in the billing and bookkeeping for the facility.

Clinical duties vary, but could include taking medical histories and recording vital signs, explaining treatment procedures to patients and preparing patients for examinations. They may collect and prepare laboratory specimens or perform basic laboratory tests on the premises and they may work with patients on discharge instructions, prepare and administer medications as directed by a physician, authorize drug refills as directed or even prepare patients for X-rays, take electrocardiograms, remove suture or change dressings.

Medical Assistants are classified as allied health practitioners. They can be found in doctor offices, hospitals, outpatient clinics, ambulatory facilities and other health care related businesses. The program goal is to prepare competent, entry-level medical assistants in the cognitive (knowledge), psychomotor (skills), and affective (behavior) learning domains.

The South Central College Medical Assistant program is accredited by the Commission on Accreditation of Allied Health Education Programs (CAAHEP), 1361 Park St. Clearwater, FL 33756, 727-210-2350 upon the recommendation of the Medical Assistant Education Review Board (MAERB).

The SCC Medical Assistant program is affiliated with the The American Association of Medical Assistants (AAMA). AAMA has chapters throughout Minnesota which allow students to enhance their professional development and prepare for their national certification as a Certified Medical Assistant.

Student Background Studies:

Minnesota law requires that any person who provides services that involve direct contact with patients and residents at a health care or child care facility licensed by the Minnesota Department of Health have a background study conducted by the state. An individual who is disqualified from having direct patient contact as a result of the background study, and whose disqualification is not set aside by the Commissioner of Health, will not be permitted to participate in a clinical placement in a Minnesota licensed health care or child care facility. Failure to participate in a clinical placement required by the academic program could result in ineligibility to qualify for a degree in that program.

Department Faculty

Cristen Cox

Medical Assistant Degrees

Medical Assistant AAS Degree

Medical Assistant

A.A.S. Degree • 60 Credits

AAS 2364/AAS 3364



Degree Description

The Medical Assistant is a professional, multi-skilled person dedicated to assisting in patient care management. The practitioner performs administrative duties which might include answering the telephones, greeting patients, updating and filing patient medical records, filling out insurance forms, scheduling appointments and arranging admission and laboratory services. They may also be involved in the billing and bookkeeping for the facility.

Clinical duties vary, but could include taking medical histories and recording vital signs, explaining treatment procedures to patients and preparing patients for examinations. They may collect and prepare laboratory specimens or perform basic laboratory tests on the premises and they may work with patients on discharge instructions, prepare and administer medications as directed by a physician, authorize drug refills as directed or even prepare patients for X-rays, take electrocardiograms, remove suture or change dressings.

Medical Assistants are classified as allied health practitioners. They can be found in doctor offices, hospitals, outpatient clinics, ambulatory facilities and other health care related businesses.

Admission Dates: Fall Semester

Offered on the Faribault and North Mankato Campuses

The course requirements listed below are specific to the 2013-2014 school year. If you need to view the program from previous years view our [Catalog Archive](#).

This credential is part of the Medical Assistant department. [See the Medical Assistant department page for more details](#)

Required Technical Courses (13 Courses)

Complete the following courses:

- [HC 1000](#) Medical Terminology (3 Credits)
- [HC 1001](#) Advanced Medical Terminology (3 Credits)
- [HC 1914](#) Anatomy & Physiology/Disease Conditions I (4 Credits)
- [HC 1924](#) Anatomy & Physiology Disease Conditions II (4 Credits)
- [HC 2930](#) Introduction to Health Care/Health Information (4 Credits)
- [HCTC1886](#) Basic Nursing 101 (CNA) (4 Credits)
- [HLTH1950](#) CPR (1 Credit)
- [OTEC1001](#) Computer Software for College (2 Credits)
- [MA 2000](#) Pharmacology for Medical Assistants (3 Credits)
- [MA 2010](#) Laboratory Skills for Medical Assistants (3 Credits)

(1 Course)

- [HLTH1954](#) Safety (1 Credit)
- And
- [HUCF1200](#) Health Unit Coordinator Fundamentals (2 Credits)

PLEASE NOTE: All program plans are preliminary and curriculum may change without notice. Your [catalog of record](#) may have different requirements.

Or

[MDLT1810](#) Laboratory Techniques and Orientation (3 Credits)

[MA 2020](#) Clinical Skills for Medical Assistants (3 Credits)

[MA 2030](#) Radiography Skills for Medical Assistants (3 Credits)

[MA 2040](#) Medical Assistant Internship (4 Credits)

(1 Course)

[HUCF1200](#) Health Unit Coordinator Fundamentals (2 Credits)

Required Liberal Arts and Sciences (5 Courses)

To complete an AAS degree, students must complete 16 MNTC credits from 3 of the 10 MNTC goal areas. Select the following required courses:

[ENGL100](#) Composition (4 Credits)

[COMM140](#) Interpersonal Communication (3 Credits)

[HUM 100](#) Critical Thinking (3 Credits)

[PSYC110](#) Lifespan Psychology (3 Credits)

[PHIL150](#) Medical Ethics (3 Credits)

Medical Assistant - Associate of Applied Science Degree Course Descriptions**Medical Terminology****HC 1000 3.00 credits**

This course will be a study of the language used in the health care delivery system. The course presents component medical word parts and their use in building and interpreting medical terminology related to each body system. Spelling, pronunciation and usage of medical terminology will be emphasized. (Prerequisites: None)

Advanced Medical Terminology**HC 1001 3.00 credits**

This course is the continuation of HC1000. Review of medical terminology as it pertains to the body systems that were covered in HC1000 with emphasis on developing an understanding of the pathological terminology used in the individual medical specialties throughout medicine. Specialty areas within the allied health professional fields of respiratory therapy, physical therapy, pathology, radiology, anesthesia, pharmacology and others will be introduced. (Prerequisites: HC 1000).

Anatomy & Physiology/Disease Conditions I**HC 1914 4.00 credits**

This course is designed to provide two approaches to assist the student in learning about the human body. The first is in developing a basic understanding of the normal structure and function of the human body and secondly to discuss disease processes that affect each body system. (Prerequisite: HC 1000)

Anatomy & Physiology Disease Conditions II**HC 1924 4.00 credits**

This course is a continuation of HC 1914 Anatomy/Physiology/Disease Conditions I with emphasis on the pathophysiology of the human body. The student will apply previous knowledge in medical terminology and structure and function of the human body. This course prepares the student in understanding the abnormalities and diseases that affect the organs and organ systems. (Prerequisites: HC 1914, 1000)

Introduction to Health Care/Health Information**HC 2930 4.00 credits**

This course reviews the evolution of health care and the health insurance industry. The course will introduce the types of healthcare facilities and discusses concepts of healthcare finance. The student will gain knowledge of the major types of healthcare insurance, medical record systems, confidentiality, and the legal aspects of medical records and health care. The course reviews medical documentation and the standardization of forms used in the health record and will review both manual and electronic medical records (EMR) and how each provides the documentation of care provided to patients. (Prerequisites: None)

Basic Nursing 101 (CNA)**HCTC1886 4.00 credits**

This course meets federal and state criteria for eligibility to take the state test to become a NAR, HHA, as well as the requirements for Basic Nursing 101, a requirement for the Practical Nursing Program. It introduces concepts of basic human needs, the health/illness continuum and focuses on preparing the student to safely perform basic nursing skills needed to function as a Nursing Assistant or Home Health Aide. (Prerequisites: None)

CPR**HLTH1950 1.00 credits**

This course covers the skills of infant, child and adult single and two rescue CPR as well as relief of foreign body airway obstruction procedures for infant, child and adult. Automated

Computer Software for College**OTEC1001 2.00 credits**

This course covers basic information about computer hardware and software and the use of computer software as a business productivity tool. Students will be given introductory

external defibrillators, bag-valve masks and pocket masks are also used. Signs and symptoms of stroke and heart attack are also discussed. This course meets the criteria of the American Heart Association 2010 Guidelines for CPR and ECC.

Pharmacology for Medical Assistants

MA 2000 3.00 credits

In this course students will learn topics essential for the Medical Assistant to thoroughly understand drug sources, herbs and supplements, legislation relating to drugs, drug references and drug classifications. Students will also gain knowledge in basic principles for administering different types of medications and the universal precautions and standards related to the role of a Medical Assistant. (Prerequisites: HC 1001, 1914, MA 2010)

Laboratory Techniques and Orientation

MDLT1810 3.00 credits

This course is an orientation course that familiarizes the student with a career in the medical laboratory field. It covers basic skills in clinical laboratory techniques and provides the student with practice. Topics include: MLT/Phlebotomy program policies; certification; working with various pieces of equipment; safety; infection control; quality control; specimen collection/handling/processing; good laboratory technique and maintaining efficiency and accuracy. The practice of phlebotomy is heavily emphasized in this course. Students will continue to enhance their phlebotomy skills in other technical courses, where blood samples are needed, and also during the clinical internship. (Prerequisites: None)

Radiography Skills for Medical Assistants

MA 2030 3.00 credits

This course is a comprehensive look at the skills and process needed to obtain a limited scope of practice certificate in radiography. Students will learn information regarding, radiation protection, image production and evaluation, equipment operation and quality control, patient care and education, as well as radiographic procedures for each anatomical region. (Prerequisites: HC 1000, 1914)

Safety

HLTH1954 1.00 credits

This course includes basic OSHA safety standards. Hearing protection, eye protection, back injuries, lockout/tagout

training on a Windows operating system and the common business applications of word processing, spreadsheets, database, and presentation graphics. This course is designed to equip the student with knowledge of hardware and software applications. This course will cover the business application software that will be used in more advanced courses. (Prerequisites: Basic computer skills or Computer Basic class; mouse proficiency, keyboarding skill of 25 words per minute)

Laboratory Skills for Medical Assistants

MA 2010 3.00 credits

This course is designed to teach laboratory fundamentals of medical assisting in a clinical office setting. Students will learn aspects of standard precautions, laboratory safety, venipuncture, collection of patient specimens, perform CLIA waived laboratory testing along with identification of infectious agents. (Prerequisites: None)

Clinical Skills for Medical Assistants

MA 2020 3.00 credits

This is a comprehensive clinical course for the Medical Assisting student. In this course students will learn the general practice related to the position of a medical assistant who works in a clinical setting. It will cover practical information and allow students to practice key concepts, skills and tasks in a clinical setting. (Prerequisites: HC 1000, 1914, MA2010)

Medical Assistant Internship

MA 2040 4.00 credits

Students will engage in a non paid medical assisting internship within an ambulatory health care setting. In actual work situations, students will perform administrative and clinical competencies. Administrative competencies may include and are not limited to, clerical functions, performing bookkeeping tasks and scheduling appointments. Clinical competencies may include and are not limited to, specimen collection, diagnostic testing and patient care. Students will participate in mandatory campus meetings where the student will learn job search and interview techniques along with participation in test preparation for their National Certification Exam. (Prerequisites: MA 2000, 2020)

Health Unit Coordinator Fundamentals

HUCF1200 2.00 credits

This course includes the study of health care facility office and communication skills for nonclinical functions. Information

procedures, Hazard Communication standard, bloodborne pathogens, and substance abuse in the workplace are examples of topics covered in this course. The consequences of disregarding safety practices are explored. This course is appropriate for individuals who may be entering a new vocation. The topics covered include items from the health care realm to items concerning business, manufacturing, and industrial issues. (Prerequisite: None)

Health Unit Coordinator Fundamentals

HUCF1200 2.00 credits

This course includes the study of health care facility office and communication skills for nonclinical functions. Information about working with nursing and medical staff, other department staff, patients and visitors to contribute to the patients'/clients'/residents' care and well being is emphasized. Communication of many kinds, including telephone, written, electronic, and interpersonal is a focus of the course. Students will also learn about clerical support duties such as typing, scheduling, faxing, and using the computer. Chart creation and interaction are also explored, both in paper format and in the Electronic Health Record. (Prerequisite: None)

Interpersonal Communication

COMM140 3.00 credits

In this class, participants will examine key components of interpersonal communication theory, identify the interpersonal communication skills necessary for healthy relationships, assess their own interpersonal communication effectiveness, and practice and hone interpersonal communication skills necessary for healthy home and work relationships. This course will also address relevant issues of social interaction, including how human diversity/culture (age, race, gender, etc.) affects our interpersonal communication. (Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher)(MNTC 1: Communication)

Lifespan Psychology

PSYC110 3.00 credits

This is an introductory course examining human development across the lifespan, with emphasis on normal physical, cognitive, and social development. (Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher) (MNTC 5, 7: History/Social & Behavioral Sciences, Human Diversity)

about working with nursing and medical staff, other department staff, patients and visitors to contribute to the patients'/clients'/residents' care and well being is emphasized. Communication of many kinds, including telephone, written, electronic, and interpersonal is a focus of the course. Students will also learn about clerical support duties such as typing, scheduling, faxing, and using the computer. Chart creation and interaction are also explored, both in paper format and in the Electronic Health Record. (Prerequisite: None)

Composition

ENGL100 4.00 credits

Composition is concerned with developing, through theory and practice, the ability to communicate in written form for personal and professional reasons. Students will develop writing skills, analytical skills, and critical thinking skills. Students will complete readings, papers, grammar exercises, and in-class activities. Students will learn methods of writing informatively and persuasively. (Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher AND a score of 85.5 or higher on the Sentence Skills portion of the Accuplacer test or completion of ENGL 0080 and ENGL 0090 with a grade of C or higher)(MNTC 1: Communication) This course has an online option.

Critical Thinking

HUM 100 3.00 credits

This course introduces students to the importance of critical thinking in our culture today. Students will be provided with methods of critical thinking as well as relevant topics on which to practice their skills. (Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher) (MNTC 2: Critical Thinking)

Medical Ethics

PHIL150 3.00 credits

This course examines the moral problems confronting physicians, patients and others concerned with medical treatment, research, and health policy. It covers general meta-ethical issues-constructivism and objectivism-along with the normative principles supplied by such theories as utilitarianism, natural law, ethical pluralism and virtue ethics. Finally, the course addresses particular issues in medical ethics such as beginning and end of life issues, doctor and patient obligations (e.g. informed consent, patient confidentiality, proxy-decision making, etc.), the allocation of medical resources, and biomedical research. (Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher) (MNTC 6, 9: Humanities and

Medical Laboratory Technician Department Overview

South Central College's Medical Laboratory Technician program is a hybrid* program that prepares students for a career as a medical laboratory professional who makes a difference in people's lives everyday. Medical Laboratory Technicians work in all areas of a clinical laboratory providing invaluable information to assist physicians in preventing, diagnosing and treating disease.

(*Hybrid courses blend face-to-face interactions such as classroom activities, student group work and live lectures with online educational technologies such as lectures, assignments, discussions, and other web-based learning tools. These types of courses have significantly reduced seat time, amounting to at least 30% of the course time. For example, the MLT Program technical courses have all lecture-related material online with the student laboratory sessions constituting the face-to-face interactions.)

Medical Laboratory Technicians:

- Are problem solvers
- Like challenges and responsibility
- Are accurate and reliable
- Work well under pressure
- Communicate well
- Set high standards for themselves
- Are fascinated by science

A Medical Laboratory Technician performs routine clinical laboratory tests in all areas of the clinical laboratory. An MLT searches for basic causes to the presence, absence, extent and cause of diseases. Qualifications of this highly skilled individual include being dedicated and self-motivated with a keen commitment to accuracy and precision to ensure quality patient outcomes. MLT's work in a variety of laboratory environments including hospitals, clinics, doctor's offices, research, technical, sales and reference labs in both private and public sectors.

Job opportunities are excellent in both metropolitan and rural areas of the country and include such places as: hospitals, clinics, research laboratories, reference laboratories, physician's offices, public health agencies, private laboratories, universities and medical sales. US News and World Report put Medical Laboratory Technician on their 50 Best Careers of 2011 list based on job growth projections, salaries and job satisfaction.

The structure of the program is a combination of general education and support courses; online lectures; face-to-face student laboratory sessions; and placement of students in a hospital or clinic internship experience. The program is considered a "hybrid" program because there are required face-to-face student laboratory sessions in which a student must physically be present on one of SCC's two campuses in order to fulfill the requirements of the student laboratory sessions.

Additionally, South Central College graduates may continue their education toward bachelor's and master's degrees through articulation agreements with the University of North Dakota. South Central College and UND offer all courses with face-to-face and hybrid online options.

Student Background Studies:

Minnesota law requires that any person who provides services that involve direct contact with patients and residents at a health care or child care facility licensed by the Minnesota Department of Health have a background study conducted by the state. An individual who is disqualified from having direct patient contact as a result of a background study, and whose disqualification is not set aside by the Commissioner of Health, will not be permitted to participate in a clinical internship in a Minnesota licensed health care or child care facility. Failure to participate in a clinical internship required by the academic program could result in ineligibility to qualify for a degree from that program.

Accreditation

:
NAACLS (National Accrediting Agency for Clinical Laboratory Sciences)
5600 N River Road, Suite 720
Rosemont, IL 60018-5119
(773)-714-8880

Upon graduation from the Medical Laboratory Technician program at South Central College, students are eligible to take a national

certification examination given by the American Society of Clinical Pathology)(ASCP) and become certified as a Medical Laboratory Technician (ASCP).

Core Competencies

1. Demonstrate standard safety practices designed for the medical laboratory professions.
2. Perform basic phlebotomy procedures that include both venipuncture and capillary techniques.
3. Demonstrate multitasking skills where a wide variety of testing procedures are performed.
4. Demonstrate standard quality assurance practices to ensure quality patient outcomes.
5. Demonstrate proper procedures in maintenance, calibration, operation, and troubleshooting of laboratory analyzers and equipment.
6. Correlate pathologic conditions and the laboratory's role in diagnosis and treatment.

Department Faculty

Stacy Hohenstein, Cathy Smesrud

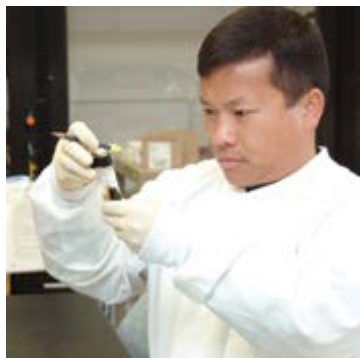
Medical Laboratory Technician Degrees

Medical Laboratory Technician AAS Degree

Medical Laboratory Technician

A.A.S. Degree • 72 Credits

AAS 2301/AAS 3309



Degree Description

Under the supervision of a certified Clinical Laboratory Scientist. The experience allows the student to apply knowledge learned in the didactic phase in an employment-like setting. Students rotate through all areas of the clinical laboratory gaining experience and practice in basic clinical laboratory techniques, procedures and phlebotomy.

Admission Process

Application to the Medical Laboratory Technician program requires a separate application process from admission to the college. Applicants must have completed or be in the process of completing the following sequence of courses with a grade of "C" or higher:

- HLTH1000 Medical Terminology (1 credit)
- OTEC1001 Computer Software for College (2 credits)
- ENGL100 Composition (4 credits)
- CHEM108 Introduction to Chemistry (4 credits)
- BIOL160 Human Biology (3 credits)
- BIOL 161 Human Biology Lab (1 credit)

BIOL 160 and BIOL 161 are taken together

Admission Dates: Fall Semester

Offered on the Faribault and North Mankato Campuses

The course requirements listed below are specific to the 2013-2014 school year. If you need to view the program from previous years view our [Catalog Archive](#).

This credential is part of the Medical Laboratory Technician department. [See the Medical Laboratory Technician department page for more details](#)

Required Technical Courses (12 Courses)

You must complete the following required courses:

- [MDLT1810](#) Laboratory Techniques and Orientation (3 Credits)
- [MDLT1815](#) Hematology I (3 Credits)
- [MDLT1820](#) Coagulation (2 Credits)
- [MDLT1825](#) Urinalysis/Body Fluids (3 Credits)
- [MDLT1830](#) Hematology II (3 Credits)
- [MDLT1835](#) Immunology (2 Credits)
- [MDLT2806](#) Immunohematology I (2 Credits)
- [MDLT2807](#) Immunohematology II (2 Credits)
- [MDLT2811](#) Microbiology I (3 Credits)
- [MDLT2817](#) Chemistry I (4 Credits)
- [MDLT2818](#) Chemistry II (3 Credits)
- [MDLT2821](#) Microbiology II (3 Credits)

Required Liberal Arts and Sciences (5 Courses)

To complete an AAS Degree, students must complete 19 MNTC credits from 3 of the 10 MNTC Goal Areas.

The following courses are specifically required.

Required Clinical Credits (8 Courses)

You must complete all of the following courses:

- [MDLT2825](#) Clinical Practice & Orientation (1 Credit)
- [MDLT2900](#) Clinical: Hematology (3 Credits)
- [MDLT2901](#) Clinical: Chemistry (3 Credits)
- [MDLT2907](#) Clinical: Urinalysis and Body Fluids (1 Credit)
- [MDLT2903](#) Clinical: Immunohematology (4 Credits)
- [MDLT2904](#) Clinical: Immunology (1 Credit)
- [MDLT2905](#) Clinical: Microbiology (3 Credits)
- [MDLT2906](#) Clinical: Coagulation (1 Credit)

PLEASE NOTE: All program plans are preliminary and curriculum may change without notice. Your [catalog of record](#) may have different requirements.

Other Required Courses (2 Courses)

Applicant must have completed or be in the process of completing the following pre-major courses with a grade of "C" or higher.

- [HLTH1000](#) Medical Terminology (1 Credit)
- [OTEC1001](#) Computer Software for College (2 Credits)

COMM140 Interpersonal Communication (3 Credits)

Or

COMM110 Public Speaking (3 Credits)

ENGL100 Composition (4 Credits)

BIOL162 Human Biology (4 Credits)

CHEM108 Introduction to Chemistry (4 Credits)

PSYC100 Introduction to Psychology (4 Credits)

Or

PSYC110 Lifespan Psychology (3 Credits)

Medical Laboratory Technician - Associate of Applied Science Degree Course Descriptions**Laboratory Techniques and Orientation****MDLT1810 3.00 credits**

This course is an orientation course that familiarizes the student with a career in the medical laboratory field. It covers basic skills in clinical laboratory techniques and provides the student with practice. Topics include: MLT/Phlebotomy program policies; certification; working with various pieces of equipment; safety; infection control; quality control; specimen collection/handling/processing; good laboratory technique and maintaining efficiency and accuracy. The practice of phlebotomy is heavily emphasized in this course. Students will continue to enhance their phlebotomy skills in other technical courses, where blood samples are needed, and also during the clinical internship. (Prerequisites: None)

Coagulation**MDLT1820 2.00 credits**

The course of study for this course covers the basic principles and practical applications of and the common abnormalities associated with hemostasis. The structure of this course allows the student to perform basic coagulation tests. Quality assurance measurements are also a part of the curriculum. (Prerequisites: MDLT 1810 may be taken concurrently or with Program Director permission)

Hematology II**MDLT1830 3.00 credits**

This course is a continuation of Hematology I. It includes the study of anemias and leukemias, and the correlation of these disease processes. Instruction includes lecture and laboratory case studies, and the use of automated hematology analyzers. A short introduction to electrocardiography (EKG) will also be included. (Prerequisites: MDLT 1815 or with Program Director permission)

Immunochemistry I**MDLT2806 2.00 credits**

This course covers the introduction to both the theory and practical aspects of Immunochemistry. Areas of study

Hematology I**MDLT1815 3.00 credits**

This course covers basic hematology procedures involving such tests as red cell counts, white cell counts, platelet counts, hemoglobin determination, hematocrits, sedimentation rates and reticulocyte counts. Also covered are the abnormalities of these elements which cause diseases, and bone marrow procedures. (Prerequisite: MDLT 1810 may also be taken concurrently or with Program Director permission)

Urinalysis/Body Fluids**MDLT1825 3.00 credits**

The lecture component of this course will cover basic theory in urine formation, renal physiology, and metabolic disorders that produce abnormalities in the urine. Complete urinalysis examinations will be performed in the student laboratory. Basic analysis of other body fluids will be discussed with an emphasis on laboratory methods currently in use. (Prerequisites: MDLT 1810 may be taken concurrently or with Program Director permission)

Immunology**MDLT1835 2.00 credits**

The lecture component of this course will include current theory and knowledge of the immune system and the clinical correlations of inherited and acquired disease processes. Laboratory instruction allows the student to perform basic serological (immunological) procedures for the correlation of immunologic disorders, and the interpreting and reporting of patient results and quality control measures. (Prerequisites: May be taken with Program Director permission)

Immunochemistry II**MDLT2807 2.00 credits**

This course is a continuation of MDLT2806 Immunochemistry I. The student will receive further basic

include red blood cell antigens and antibodies, blood typing, antibody screening, antibody identification, compatibility testing, and quality control in the blood bank. The course is designed to prepare the student for practical training in immunohematology. (Prerequisite: MDLT1810 or Program Director permission)

Microbiology I

MDLT2811 3.00 credits

This course covers the isolation and identification of clinically significant microorganisms. Emphasis is placed on specimen sources, growth characteristics, techniques for identification, and quality control. (Prerequisites: MDLT1810 or with Program Director permission).

Chemistry II

MDLT2818 3.00 credits

This course is a continuation of MDLT 2817 Chemistry I and includes the theory and clinical correlations of acid/base balance, liver function, cardiac function, gastrointestinal function, pancreatic function, endocrinology, therapeutic drug monitoring, toxicology, tumor markers, nutritional assessment, biochemical assessment during pregnancy, and point-of-care testing. The MLT student learns the theory and technique of each procedure, quality control, and normal values of chemical constituents analyzed. Concepts that are basic to the operation of automated laboratory instruments will be discussed. (Prerequisites: MDLT 2817 or with Program Director permission)

Clinical Practice & Orientation

MDLT2825 1.00 credits

This course covers an explanation of the hospital and clinic structure and the student's role in the clinical practice setting. The student will learn the basic knowledge necessary for effective understanding of his/her expectations and evaluations as an MLT student in the clinical practice training and his/her role as an employee after graduation. (Prerequisites: MDLT 1810, 1815, 1825, 1830, 1835, 2805, 2810, 2817, 2818, 2820 or with Program Director permission)

Clinical: Chemistry

MDLT2901 3.00 credits

training practical instruction in both the theory and practical aspects of Immunohematology Areas of study include pretransfusion testing, transfusion therapy, adverse transfusion reactions, hemolytic disease of the newborn, hemolytic anemias, human leukocyte antigens, donor selection, and component processing. The course is designed to prepare the student for practical training in Immunohematology. (Prerequisite: MDLT1810 and MDLT2806 or Program Director permission)

Chemistry I

MDLT2817 4.00 credits

This course covers the analysis of chemical constituents of plasma, serum, urine and other body fluids. Emphasis is placed on physiology, methodology and clinical significance of carbohydrate metabolism, non-protein nitrogen, renal and liver function, tumor markers and porphyrins. Accuracy in performance, quality control and laboratory safety is stressed. (Prerequisites: MDLT 1810 may also be taken concurrently or with Program Director permission)

Microbiology II

MDLT2821 3.00 credits

This course is a continuation of Microbiology I. The students will receive further basic practical instruction in the isolation and identification of clinically significant microorganisms. A short introduction to parasitology/mycology/virology/Mycobacterium species will also be included. (Prerequisites: MDLT 1810 or with Program Director permission).

Clinical: Hematology

MDLT2900 3.00 credits

In the clinical laboratory sequence, the student continues their education in a hospital or clinic laboratory under the supervision of a certified Medical Technologist. The experience allows the student to apply knowledge learned in the didactic phase in an employment-like setting. Students rotate through all areas of the medical laboratory gaining experience and practice in basic medical laboratory techniques, procedures and phlebotomy. (Prerequisites: completion of all MDLT technical courses and general education courses OR Program Director permission) Clinical sequence courses consist of the following: Hematology, Chemistry, Urinalysis and Body Fluids, Immunohematology, Immunology, Microbiology, and Coagulation.

Clinical: Urinalysis and Body Fluids

MDLT2907 1.00 credits

In the clinical laboratory sequence, the student continues their education in a hospital or clinic laboratory under the supervision of a certified Medical Technologist. The experience allows the student to apply knowledge learned in the didactic phase in an employment-like setting. Students rotate through all areas of the medical laboratory gaining experience and practice in basic medical laboratory techniques, procedures and phlebotomy. (Prerequisites: completion of all MDLT technical courses and general education courses OR Program Director permission) Clinical sequence courses consist of the following: Hematology, Chemistry, Urinalysis and Body Fluids, Immunohematology, Immunology, Microbiology, and Coagulation.

Clinical: Immunohematology

MDLT2903 4.00 credits

In the clinical laboratory sequence, the student continues their education in a hospital or clinic laboratory under the supervision of a certified Medical Technologist. The experience allows the student to apply knowledge learned in the didactic phase in an employment-like setting. Students rotate through all areas of the medical laboratory gaining experience and practice in basic medical laboratory techniques, procedures and phlebotomy. (Prerequisites: completion of all MDLT technical courses and general education courses OR Program Director permission) Clinical sequence courses consist of the following: Hematology, Chemistry, Urinalysis and Body Fluids, Immunohematology, Immunology, Microbiology, and Coagulation.

Clinical: Microbiology

MDLT2905 3.00 credits

In the clinical laboratory sequence, the student continues their education in a hospital or clinic laboratory under the supervision of a certified Medical Technologist. The experience allows the student to apply knowledge learned in the didactic phase in an employment-like setting. Students rotate through all areas of the medical laboratory gaining experience and practice in basic medical laboratory techniques, procedures and phlebotomy. (Prerequisites: completion of all MDLT technical courses and general education courses OR Program Director permission) Clinical sequence courses consist of the following: Hematology, Chemistry, Urinalysis and Body Fluids, Immunohematology, Immunology, Microbiology, and Coagulation.

Interpersonal Communication

COMM140 3.00 credits

In this class, participants will examine key components of interpersonal communication theory, identify the interpersonal communication skills necessary for healthy relationships, assess their own interpersonal communication effectiveness, and practice and hone interpersonal communication skills necessary for healthy home and work relationships. This course will also address relevant issues of social interaction, including how human diversity/culture (age, race, gender, etc.) affects our interpersonal communication. (Prerequisites: Must

In the clinical laboratory sequence, the student continues their education in a hospital or clinic laboratory under the supervision of a certified Medical Technologist. The experience allows the student to apply knowledge learned in the didactic phase in an employment-like setting. Students rotate through all areas of the medical laboratory gaining experience and practice in basic medical laboratory techniques, procedures and phlebotomy. (Prerequisites: completion of all MDLT technical courses and general education courses OR Program Director permission) Clinical sequence courses consist of the following: Hematology, Chemistry, Urinalysis and Body Fluids, Immunohematology, Immunology, Microbiology, and Coagulation.

Clinical: Immunology

MDLT2904 1.00 credits

In the clinical laboratory sequence, the student continues their education in a hospital or clinic laboratory under the supervision of a certified Medical Technologist. The experience allows the student to apply knowledge learned in the didactic phase in an employment-like setting. Students rotate through all areas of the medical laboratory gaining experience and practice in basic medical laboratory techniques, procedures and phlebotomy. (Prerequisites: completion of all MDLT technical courses and general education courses OR Program Director permission) Clinical sequence courses consist of the following: Hematology, Chemistry, Urinalysis and Body Fluids, Immunohematology, Immunology, Microbiology, and Coagulation.

Clinical: Coagulation

MDLT2906 1.00 credits

In the clinical laboratory sequence, the student continues their education in a hospital or clinic laboratory under the supervision of a certified Medical Technologist. The experience allows the student to apply knowledge learned in the didactic phase in an employment-like setting. Students rotate through all areas of the medical laboratory gaining experience and practice in basic medical laboratory techniques, procedures and phlebotomy. (Prerequisites: completion of all MDLT technical courses and general education courses OR Program Director permission) Clinical sequence courses consist of the following: Hematology, Chemistry, Urinalysis and Body Fluids, Immunohematology, Immunology, Microbiology, and Coagulation.

Public Speaking

COMM110 3.00 credits

This course develops or improves effective performance in acquiring, evaluating, organizing, and communicating information. Learners develop and apply critical and creative thinking to structuring arguments, making presentations, using multimedia, and supporting each other in impromptu and extemporaneous speaking. Course de-emphasizes competition and stresses personal and workplace effectiveness in communication skills. (Prerequisites: Must have a score of 86 or higher on the Sentence Skills portion of

have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher)(MNTC 1: Communication)

Composition

ENGL100 4.00 credits

Composition is concerned with developing, through theory and practice, the ability to communicate in written form for personal and professional reasons. Students will develop writing skills, analytical skills, and critical thinking skills. Students will complete readings, papers, grammar exercises, and in-class activities. Students will learn methods of writing informatively and persuasively. (Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher AND a score of 85.5 or higher on the Sentence Skills portion of the Accuplacer test or completion of ENGL 0080 and ENGL 0090 with a grade of C or higher)(MNTC 1: Communication) This course has an online option.

Introduction to Chemistry

CHEM108 4.00 credits

A one-semester introduction to the field of chemistry, this course is designed to allow the student to understand how chemistry relates to everyday life and to learn some of the language and concepts of chemistry related to applied health. This course uses a math-based approach. (Prerequisite: Must have a score of 75.5 or higher in the Elementary Algebra portion of the Accuplacer test or completion of MATH 0085 with a grade of C or higher.) (MNTC 3: Natural Sciences)

Lifespan Psychology

PSYC110 3.00 credits

This is an introductory course examining human development across the lifespan, with emphasis on normal physical, cognitive, and social development. (Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher) (MNTC 5, 7: History/Social & Behavioral Sciences, Human Diversity)

Computer Software for College

OTEC1001 2.00 credits

This course covers basic information about computer hardware and software and the use of computer software as a business productivity tool. Students will be given introductory training on a Windows operating system and the common business applications of word processing, spreadsheets, database, and presentation graphics. This course is designed to equip the student with knowledge of hardware and software applications. This course will cover the business application

the Accuplacer test or completion of ENGL 0080 and ENGL 0090 with a grade of C or higher) (MNTC 1: Communication)

Human Biology

BIOL162 4.00 credits

This one-semester course is an introduction to the biology of the human body. Basic form and function of the body systems and their interactions will be emphasized. This knowledge will be applied to the analysis of current health and social issues. Other topics include: terminology, basic chemistry, cell biology, genetics, molecular biology and nutrition as it relates to the human body. This course contains a laboratory portion. (Prerequisites: Must have a score of 50 or higher on the College Level Math portion of the Accuplacer test or completion of MATH 0075 and MATH 0085 with a grade of C or higher AND must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ0090 with a grade of C or higher. It is strongly recommended that the student has taken a high school biology course.) (MNTC 3: Natural Sciences)

Introduction to Psychology

PSYC100 4.00 credits

This course will introduce the broad spectrum of theories and applications that make up the field of psychology. Psychology is the scientific study of behavior and mental processes, and how they are affected by physical and mental states, and external environments and social forces. (Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher) (MNTC 5: History/Social & Behavioral Sciences)

Medical Terminology

HLTH1000 1.00 credits

This course teaches students to recognize and build medical terms after learning the meaning of word parts. The course is based on a systems approach. Students also learn how to interpret and use common medical abbreviations and symbols. With instructor approval, this course may be taken on independent study. (Prerequisite: None)

software that will be used in more advanced courses.
(Prerequisites: Basic computer skills or Computer Basic class;
mouse proficiency, keyboarding skill of 25 words per minute)

Multimedia Technology Department Overview

The Multimedia Technology program at South Central College is a fast paced technology and culture driven major. This program provides students with design and software skills that will enable them to develop work that utilizes animation, graphics, illustration, videography, photography and user interactivity. Using a project-oriented approach, the Multimedia Technology program aims to develop and nurture the creativity, passion and industry knowledge required for meaningful employment in computer-aided multimedia design.

Students enrolled in this program will benefit from:

- Personalized attention
- Current computer labs and work stations
- Comfortable and relaxed atmosphere for learning
- Education that evolves with technology
- Create and design original works using graphics, video, photography, sound and animation
- Develop communication, management and analytical skills
- Involvement with real-world community projects
- Learn design theory and interact with the latest multimedia authoring software

Design and launch their own multimedia project individually, as part of a team and/or complete an internship within the media field

Begin a portfolio to share with prospective employers

Students who earn South Central College's AS degree in Multimedia Technology have the option of a seamless transfer of those credits through a 2+2 partnership with Bethany Lutheran College to work toward a bachelor's degree.

Multimedia Technology Degrees

Multimedia Technology AS Degree

Multimedia Technology

A.S. Degree • 60 Credits

AS 3284



Degree Description

Here is a list of courses required to earn the Multimedia Technology Associate in Science

Admission Dates: Fall and Spring Semester

Offered on the North Mankato Campus

The course requirements listed below are specific to the 2013-2014 school year. If you need to view the program from previous years view our [Catalog Archive](#).

This credential is part of the Multimedia Technology department. [See the Multimedia Technology department page for more details](#)

Required Courses (5 Courses)

Complete the following courses:

- [GCC 1120](#) Graphic Software 1 (4 Credits)
- [GCC 1130](#) Layout and Typography (3 Credits)
- [GCC 1220](#) Graphic Software 2 (4 Credits)
- [GCC 1250](#) Web Interactive Media 1 (3 Credits)
- [GCC 2150](#) Web/Interactive Media 2 (3 Credits)
- [COMP1140](#) Web Development (4 Credits)

Complete 3 credits of one or a combination of the (3 Credits)

following two courses:

- [MULT2295](#) Multimedia Technology Internship (1 - 3 Credits)
- [MULT2285](#) Multimedia Technology Capstone (1 - 3 Credits)

Liberal Arts and Sciences Electives

Select an additional 11-12 credits to fulfill three other MNTC Goal Areas (MNTC Goals 2,3,4,5,7,8,10).

Complete two of the following courses: (2 Courses)

- [MKT 1810](#) Principles of Marketing (3 Credits)
- Or
- [MKT 1820](#) Introduction to Business (3 Credits)
- Or
- [MKT 1840](#) Principles of Advertising (3 Credits)

Required Liberal Arts and Sciences (6 Courses)

To complete the Multimedia Technology AS Degree, students must complete 30 MNTC credits from 6 of the 10 MNTC Goal Areas.

The following courses are required:

- [ENGL100](#) Composition (4 Credits)
- Or
- [COMM110](#) Public Speaking (3 Credits)
- [ART 140](#) Digital Photography (3 Credits)
- [ART 170](#) Digital Video Production (3 Credits)
- [ART 180](#) Digital Photography 2 (3 Credits)
- [ART 270](#) Digital Video Production 2 (3 Credits)
- [MASS110](#) Introduction to Mass Communication (4 Credits)
- Or
- [PHIL100](#) Ethics in Society (3 Credits)
- Or
- [PHIL215](#) Business Ethics (3 Credits)

different requirements.

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Multimedia Technology - Associate in Science Course Descriptions

Graphic Software 1

GCC 1120 4.00 credits

Adobe Creative Suites is the dominant software package in the printing and publishing industry today. This course will be taught in a hands-on atmosphere learning the basics of Adobe InDesign, Illustrator, Photoshop, Acrobat and Bridge, and how these software packages work together in a seamless manner. Students will learn the tools, menus and palettes within each of the softwares, and integrate the use of all the softwares for photographs, graphics and layout applications. Projects will be assigned for a hands-on approach. (Prerequisites: None)

Graphic Software 2

GCC 1220 4.00 credits

Graphic Software 2 is a continuation of working with Adobe Creative Suites software. The course will be taught in a hands-on atmosphere learning more advanced features of Adobe InDesign, Illustrator and Photoshop. Adobe Acrobat and Bridge will also be utilized during class sessions. Students should already have the fundamentals of the tools, menus and palettes within each of the softwares. More advanced topics such as masking, transparency and filters will be an integral part of the course. Projects will be assigned for a hands-on approach. (Prerequisites: GCC 1120)

Web/Interactive Media 2

GCC 2150 3.00 credits

Students will continue to use the planning procedures and software skills they learned in GCC 1250 Web/Interactive Media 1. These planning procedures include layout and design, file preparation and file formatting for web and interactive media. Projects will include web promotional presentations and development of student webfolios. The importance of file naming conventions and filing systems will be emphasized. (Prerequisite: GCC 1250)

Principles of Marketing

MKT 1810 3.00 credits

This course covers the basic marketing concepts for Marketing and non-marketing students. Developing a rational marketing approach to the practices of modern marketing as they are

Layout and Typography

GCC 1130 3.00 credits

Students will be introduced to the conceptual planning process used in layout and design. Students will understand that type as well as graphics are important design elements of a layout. It will be demonstrated how type interacts with graphics in a layout. Layout principles, color, proofing and preparing literature for output and printing will also be included in this course. (Prerequisites: None)

Web Interactive Media 1

GCC 1250 3.00 credits

This course covers the basic planning procedures and the software used in interactive media and web design and production. Students will receive a basic understanding of HTML. File and folder preparation will also be demonstrated. (Prerequisite: GCC1120)

Web Development

COMP1140 4.00 credits

This course focuses on using XHTML to create attractive web presentations. Students will use basic XHTML page markup, good graphical design, planning a web presence, hyperlinks, FTP, using color and images, CSS, tables, multimedia, forms, and an introduction to JavaScript. Minimum typing speed of 20 wpm (35 wpm recommended) (Prerequisites: None)

Introduction to Business

MKT 1820 3.00 credits

This course covers the basic fundamentals of the world of business. Emphasis will be placed on the nature of business and the trends that will change the way business is conducted

used in a wide variety of settings. The course includes discussion on the marketing mix, the four p's of marketing, channels of distribution, target marketing, ethic, social responsibility, global marketing and the impact of the internet.

Principles of Advertising

MKT 1840 3.00 credits

This course provides a broad overview of the entire advertising and sales promotion industry. The focus will cover the entire spectrum of paid and non-paid activities designed to encourage the purchase and use of products, services and ideas. Discussion will include theory and practice about advertising media, public relations, packaging, special events, creation of ads and evaluation.

Multimedia Technology Capstone

MULT2285 1 - 3 credits

The student will propose and produce a project in their area of interest. This plan is based on the college's and the program's core competencies. One credit of Capstone is equal to 32 hours. (Prerequisites: a grade of C- or higher in GCC 1220, GCC 1250, ART 140, and ART 170 OR instructor permission)

Public Speaking

COMM110 3.00 credits

This course develops or improves effective performance in acquiring, evaluating, organizing, and communicating information. Learners develop and apply critical and creative thinking to structuring arguments, making presentations, using multimedia, and supporting each other in impromptu and extemporaneous speaking. Course de-emphasizes competition and stresses personal and workplace effectiveness in communication skills. (Prerequisites: Must have a score of 86 or higher on the Sentence Skills portion of the Accuplacer test or completion of ENGL 0080 and ENGL 0090 with a grade of C or higher) (MNTC 1: Communication)

Digital Video Production

ART 170 3.00 credits

This course introduces students to the fundamentals of digital video production. Students will learn how to produce digital

in the twenty-first century. The latest technology and business terms will provide an updated look at the business world.

Multimedia Technology Internship

MULT2295 1 - 3 credits

This course is designed to provide the student with a purposeful occupational experience in the Multimedia Technology field. Each internship is an individualized experience. A plan is created for each student in conjunction with the training site to provide experience related to the skills and knowledge acquired in the program. This plan is based on the college's and the program's core competencies. One credit of Internship is equal to 48 hours. (Prerequisites: a grade of C- or higher in GCC 1220, GCC 1250, ART 140, and ART 170 OR instructor permission)

Composition

ENGL100 4.00 credits

Composition is concerned with developing, through theory and practice, the ability to communicate in written form for personal and professional reasons. Students will develop writing skills, analytical skills, and critical thinking skills. Students will complete readings, papers, grammar exercises, and in-class activities. Students will learn methods of writing informatively and persuasively. (Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher AND a score of 85.5 or higher on the Sentence Skills portion of the Accuplacer test or completion of ENGL 0080 and ENGL 0090 with a grade of C or higher)(MNTC 1: Communication) This course has an online option.

Digital Photography

ART 140 3.00 credits

Introduction to the conceptual, technical and historical aspects of photography as a creative medium using digital technology within the fine arts context. Students study camera operation and techniques, composition and design, digital image capture, related software, and digital output. This class also utilizes the computer as a digital darkroom to enhance photographic images. Projects provide students with an understanding of how photographs function, not only technically, but also visually and conceptually. Students must have a digital camera; (variable F. Stop, and shutter recommended) Textbook and other supplies will also be required. (Prerequisite: None) (MNTC 6: Humanities and Fine Arts)

Digital Photography 2

ART 180 3.00 credits

This course will introduce the student to both the practical and theoretical application of controlling the digital photographer's

video productions utilizing story-boarding, lighting and shooting techniques. Students will use video and audio editing software to import, assemble and edit clips, add transitions, create super-impositions and titles in finished video productions. In addition, they will learn hardware set-up, capturing techniques and video compression schemes as they output their work to various video formats. The course also examines the history and application of video in contemporary art, documentary, film and television production. (Prerequisite: None) (MNTC 6: Humanities and Fine Arts)

Digital Video Production 2

ART 270 3.00 credits

This course covers advanced digital video techniques including scripting, lighting, shooting, editing and the overall video/audio production sequence. Students will develop advanced skills for any profession that involves video production such as television, documentation, filmmaking, contemporary art, web design, multimedia communication, animation and computer gaming. Students will use advanced non-linear video and audio editing software. Final project is a video series or single production of substantial length within the field of artistic, commercial and/or documentary video. Students will examine and utilize advanced application of cinematic philosophy, production techniques and technologies in the fields of film, videography, documentary production, and multimedia. This course also covers the current visual culture and how it applies to a digital cinematic/video production. Students will participate as a member of a production crew on college productions when available. (Prerequisite: a grade of C or higher in ART 170 or instructor permission) (MNTC 6: Humanities and Fine Arts)

Ethics in Society

PHIL100 3.00 credits

This course studies the foundations for moral beliefs, judgments, and values and the part they play in practical ethical judgments. In its application, the course deals with contemporary issues and explores specific issues of personal morality as well as business and social ethics. (Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher) (MNTC 6, 9: Humanities & Fine Arts, Ethical & Civil Responsibility)

most important tool, light. The course will deal with, through the use of light modifying devices and software, how to control the direction, quantity, quality, ratio and color of light for both outdoor (natural) and indoor (existing) light. Students enrolled in this course will study advanced lighting techniques, contemporary practices and theories in digital photography. Students will work with intermediate and advanced digital imaging software. This course will emphasize the student's development of individual artistic voice applied in a portfolio of digital photographic images. Students enrolling in this course are required to supply their own digital camera, tripod, image editing software, and lighting equipment as specified in the course syllabus. Image editing software will also be available for use in the open computer lab at South Central College's North Mankato campus. (Prerequisite: None) (MNTC 6: Humanities and Fine Arts)

Introduction to Mass Communication

MASS110 4.00 credits

This course explores the structures, functions, responsibilities, and effects of the media in contemporary society. (Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher) (MNTC 2, 9: Critical Thinking, Ethical and Civic Responsibility)

Business Ethics

PHIL215 3.00 credits

The intent of this course is to show that the world of business traffics in the world of ethics. Business is not a neutral domain where one may do as one pleases. For instance, there is the question of what sorts of obligations businesses have toward their employees. Do businesses have a positive moral duty to promote social goods? Do they have a primary obligation or do their moral responsibilities comprise a set of different and equally important obligations? We will examine several views of the moral relation between businesses and others including the stockholder theory and the stakeholder theory. The goals of this course are to become acquainted with the architecture of morality, master the various moral theories and their unique implications for business, and to gain facility sliding between talk of each and applying each in various business contexts. We will examine various moral theories like utilitarianism and deontological type theories and then examine them in the context of applied business ethical issues. We will also look at broader issues about the nature of a just society and just economy in which the business is to function. (Prerequisites: Must have a score of 78 or higher on the Reading portion of

the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher) (MNTC 2, 9: Critical Thinking, Ethical & Civil Responsibility)

Nursing Department Overview

SCC's Nursing Programs prepare students to apply for licensure as a Practical, Registered Nurse or Nursing Assistant.

Students in the nursing program take liberal arts and science courses and nursing theory courses. In addition, clinical courses are required off campus under the guidance and supervision of the SCC nursing faculty in a variety of health care agencies in south central Minnesota. SCC's experienced faculty are committed to providing a high-quality educational experience.

Since it is vital to maintain high healthcare standards in all healthcare facilities, students must adhere to health policies and meet specific criteria to enter the program. Once notified of acceptance to the program, students must submit required program documentation, including current immunization status and certificate in professional CPR for all ages, before attending clinical experiences in health care settings. The student is responsible for ensuring initial compliance with and renewal/updating of health and personal information on file.

Minnesota law requires that all persons who provide services that involve direct contact with patients and residents at a health care facility be subject to a background study. A student who is disqualified from having direct patient contact as a result of the background study will not be permitted to participate in a clinical placement in a health care facility and will not be allowed to continue in the nursing program or Basic Nursing Course. Students who have a disqualification that the Minnesota Commissioner of Health may consider setting aside will not be allowed to continue in the nursing program (an exception may be made for students enrolled in the Basic Nursing Course).

Practical Nursing and the Nursing A.S. Degree programs are approved by Minnesota State Colleges and Universities and the Minnesota Board of Nursing.

Program Admission:

Application to the nursing program is a separate process from admission to the college. In order to be eligible to make application to the core nursing program, students must be fully admitted to the college by the published college admission deadlines.

The application window for the Professional Nursing A.S. Degree is open yearly from January 1 through the last Friday in January. Students are notified by mid-April of their acceptance or denial to the program for the following academic year.

The Practical Nursing Program has an open, year round application process.

For more details on making application to the Practical Nursing or Professional Nursing A.S. Degree Program, refer to the nursing program admission policies found in the nursing handbooks.

Department Faculty

Christina Hinz, Kathy Bengtson, Margaret Brewer, Michele Brielmaier, Diane Cowley, Sharon Derouin, Kristen Haala, Candence Mortenson-Klumpel, Sandi Myers, Jennifer Ongie Jindra, Jennifer Prochaska, Janet Rainford, Juanita Schueler, Maryl Scott, Pam Wolters, Sue Zielske

Nursing Degrees

Nursing AS Degree
Practical Nursing AAS Degree
Practical Nursing Diploma
Nursing Assistant (Basic Nursing)

Nursing

A.S. Degree • 64 Credits

AS 2317/AS 3363



Degree Description

The South Central College Professional Nursing Associate in Science Degree is approved by Minnesota State Colleges and Universities and the Minnesota Board of Nursing.

The South Central College Professional Nursing Associate Degree Program is a candidate for accreditation by the National League for Nursing Accrediting Commission.

The Associate in Science Degree in Nursing prepares students for the role of a professional nurse, which includes providing safe and culturally competent care in a variety of settings. Students will develop and maintain positive, healthy relationships with patients, families, and the community as they learn to practice according to legal, ethical, and professional standards. Evidence will support care, learning, and professional development as students become advocates for quality health care.

Qualified licensed practical nurses admitted into the Nursing Program will be granted 12 credits of advanced standing for graduation prior to taking their first nursing class. A qualified LPN is one who has met the admission criteria for the SCC Nursing Program. Admitted LPN's will be required to complete a 4-credit "Nursing Transitions" course (NURS1910).

For students wishing to complete the program on a part-time basis, it is recommended they take as many of the required liberal arts and science courses as possible before beginning the program (during their "pre-nursing" time).

Admitted students are required to participate in a background study.

Students that earn an Associate in Science Degree may transfer credits to a four-year institution to work towards a Bachelor's Degree in Nursing. Students will be required to take additional liberal arts and science courses, and should visit with whichever institution they wish to transfer to for further information.

Student Learning Outcomes

1. Human Flourishing - Advocate for patients and families in ways that promote their self-determination, integrity, and ongoing growth as human beings.
2. Nursing Judgment - Make judgments in practice, substantiated with evidence, that integrate nursing science in the provision of safe, quality care and that promote the health of patients within a family and community context.
3. Professional Identity - Implement one's role as a nurse in ways that reflect integrity, responsibility, ethical practices, and an evolving identity as a nurse committed to evidence-based practice, caring, advocacy, and safe, quality care for diverse patients within a family and community context.
4. Spirit of Inquiry - Examine the evidence that underlies clinical nursing practice to challenge the status quo, question underlying assumptions, and offer new insights to improve the quality of care for patients, families, and communities.

Admission Dates: Fall and Spring Semester

Offered on the Faribault and North Mankato Campuses

The course requirements listed below are specific to the 2013-2014 school year. If you need to view the program from previous years view our [Catalog Archive](#).

This credential is part of the Nursing department. [See the Nursing department page for more details](#)

Required Technical Courses (10 Courses)

Complete the following courses:

- [NURS2210](#) Semester 1 Theory (2 Credits)
- [NURS2275](#) Skills & Pharmacology I (4 Credits)
- [NURS2250](#) Semester 1 Clinical Practice (2 Credits)
- [NURS2310](#) Semester 2 Theory (5 Credits)

Required Liberal Arts and Sciences (7 Courses)

To complete an A.S. Degree, student must complete 31 MNTC credits from 6 of the 10 MNTC Goal Areas. Complete the following required courses:

- [BIOL225](#) Anatomy and Physiology I (4 Credits)
- [BIOL235](#) Anatomy and Physiology II (4 Credits)

[NURS2375](#) Semester 2 Skills & Pharmacology II (2 Credits)
[NURS2350](#) Semester 2 Clinical Practice (4 Credits)
[NURS2410](#) Semester 3 Theory (4 Credits)
[NURS2450](#) Semester 3 Clinical Practice (4 Credits)
[NURS2510](#) Semester 4 Theory (2 Credits)
[NURS2550](#) Semester 4 Clinical Practice (4 Credits)

Additional Liberal Arts and Sciences (6 Credits)

Students must complete 6 additional credits from at least two of the following MNTC Goal Areas: 2,4,6,9,10.

[BIOL240](#) Pathophysiology (3 Credits)
[BIOL270](#) Microbiology (4 Credits)
[COMM130](#) Intercultural Communication (3 Credits)
[ENGL100](#) Composition (4 Credits)
[PSYC110](#) Lifespan Psychology (3 Credits)

PLEASE NOTE: All program plans are preliminary and curriculum may change without notice. Your [catalog of record](#) may have different requirements.

Nursing - Associate in Science Degree Course Descriptions**Semester 1 Theory****NURS2210 2.00 credits**

This course introduces the student to the basic concepts in nursing, including the history and evolution of modern nursing. Topics include: nursing theory, nursing process, critical thinking, communication, cultural competence, professionalism, the multi-disciplinary team, scope of practice, current and future trends in health care, and legal and ethical issues. ENGL 100, and BIOL 235 must be taken concurrently if they have not previously been completed. (Prerequisite: Admission to Professional Nursing Associate Degree Program, BIOL 225) (Corequisites: Nurs 2250, 2275)

Skills & Pharmacology I**NURS2275 4.00 credits**

This course provides students the opportunity to learn basic nursing procedures, equipment, and assessments in a simulated supervised lab setting. The six rights of medication administration and dosage calculation will be explained and practiced. Medical terminology, abbreviations, and documentation will be threaded throughout the course. Drug classifications will provide the foundation for learning individual medications, their indications for use, and potential side effects/adverse reactions. Nursing resources will be identified. Competencies related to infection control, asepsis, patient safety, mobility, vital sign measurement and medication administration will be achieved. ENGL 100 and BIOL 235 must be taken concurrently if they have not previously been completed. (Prerequisite: Admission to Professional Nursing Associate Degree Program, and BIOL 225) (Corequisites: NURS 2210, 2250)

Semester 1 Clinical Practice**NURS2250 2.00 credits**

This course provides an opportunity to integrate classroom/lab learning with supervised client care in a health care setting. Students utilize the Nursing Process to collect data, implement nursing interventions and administer medications. Emphasis is placed on organization, critical thinking, therapeutic communication and a holistic approach to client care. Professional behavior will be modeled. This course will also cover the characteristics of hazardous wastes and its safe handling, storage, and disposal. ENGL 100 and BIOL 235 must be taken concurrently if they have not previously been completed. (Prerequisite: Admission to Professional Nursing Associate Degree Program, and BIOL 225) (Corequisites: Nurs 2210, 2275)

Semester 2 Theory**NURS2310 5.00 credits**

This course will focus on the nursing process as the basis for holistic assessment and planning of care for clients with common illnesses with emphasis on the following systems/conditions: cardiac, respiratory, endocrine, neurological, cognitive, musculoskeletal, gastrointestinal, renal and integumentary. Case studies will be utilized to assess students in identifying the client's response to illness. PSYCH 110 and BIOL 240 must be taken concurrently if they have not previously been completed. (Prerequisites: NURS 2210, 2250, 2275, ENGL 100, BIOL 235) (Corequisites: NURS 2350, 2375)

Semester 2 Skills & Pharmacology II**NURS2375 2.00 credits**

Students will refine nursing skills, including taking a health history, assessments, therapeutic communication, pharmacology, math competence, interventions and critical thinking in an environment of collaborative learning based in simulation. Students apply a holistic approach to enhance their understanding of the impact of environment, culture, and family and the client and their response to health and illness. PSYCH 110 and BIOL 240 must be taken concurrently if they

Semester 2 Clinical Practice**NURS2350 4.00 credits**

Students apply theory related to alteration in body systems through observation, assessment and interaction with clients in a variety of health care settings. Nursing interventions are individualized to meet each client's needs with consideration of the client's culture. The Nursing Process is implemented with an emphasis on critical thinking. Organizational skills are developed with opportunities to care for multiple clients. Students will demonstrate effective communication with other

have not previously been completed. (PrerequisiteS: NURS 2210, 2250, 2275, ENGL 100, BIOL 235) (Corequisites: NURS 2310, 2350)

members of the multi-disciplinary health care team. Professional nursing behavior will be demonstrated. This course will also cover the characteristics of hazardous wastes and its safe handling, storage, and disposal. PSYCH 110 and BIOL 240 must be taken concurrently if they have not previously been completed. (Prerequisites: NURS 2210, 2250, 2275, ENGL 100, BIOL 2350) (Corequisites: NURS 2310, 2375)

Semester 3 Theory

NURS2410 4.00 credits

This course provides the student with the opportunity to synthesize the holistic care of patients across the lifespan. The student is introduced to the fundamental concepts of growth and development in the childbearing family. Students will understand the nature of pregnancy, the fundamental principles of gestation, labor and delivery, and nursing care of the mother and newborn. Common illnesses and disorders of the newborn and child will be discussed. Throughout this course, family-centered care will be emphasized and the effect of culture explored. This course will also introduce the student to concepts in mental health and mental illness. The impact of culture and value systems on mental health is identified. Treatments discussed include: medication and behavioral therapy, crisis intervention, and group therapy. Appropriate nursing interventions for clients exhibiting maladaptive behaviors will be discussed. COMM 130, and BIOL 270 must be taken concurrently if they have not previously been completed. (Prerequisites: NURS 2310, 2350, 2375, BIOL 240, PSYC 110) (Co-requisites: NURS 2450)

Semester 4 Theory

NURS2510 2.00 credits

This course provides the student with the opportunity to synthesize learning from previous semesters into the holistic care of patients with complex needs experiencing crisis or end of life. The impact of an individual's illness on families and communities will be addressed. Nursing roles in addition to direct caregiver will be explored including advocacy, educator, and manager. (Prerequisites: NURS 2410, 2450, BIOL 270, COMM 130) (Co-requisites: NURS 2550)

Anatomy and Physiology I

Semester 3 Clinical Practice

NURS2450 4.00 credits

This course will focus on the client with specialized needs across the lifespan. Students will have the opportunity to explore the wonder of human gestation from conception to post-partum care of the newborn and mother. Pediatric nursing will be experienced in the clinical setting where theories of growth and development will be foundational in designing patient care. Family-centered care will be examined as the context of client development, response to illness and health promotion. External systems such as culture and religion will be considered as influencing client health and illness. Students will provide care for the client with complex multiple needs in the clinical setting. Concepts of mental health and illness will be explored in the clinical setting. Students will have the opportunity to observe, experience and design nursing care for the hospitalized client with mental health needs. This course will also cover the characteristics of hazardous wastes and its safe handling, storage, and disposal. COMM 130, and BIOL 270 must be taken currently if they have not previously been completed. (Prerequisites: NURS 2310, 2350, 2375, BIOL 240, PSYC 110) (Co-requisites: NURS 2410)

Semester 4 Clinical Practice

NURS2550 4.00 credits

This course offers opportunities to care for a diverse population across the lifespan. Students will explore the leadership role in the clinical setting. The course involves a teaching/learning project as well as caring for multiple patients. Critical thinking and preparation for practice is threaded throughout the course. In this experience the student nurse will interact with and be mentored by a practicing clinical nurse in the patient care setting. This presents the student with the opportunity to synthesize and apply theory to practice directly in an independent supervised setting. Students will see their education and preparation come to life in the care and collaboration of a nurse preceptor. The student will establish learning outcomes, identify areas of growth and dialogue with classmates about their experiences. This is the pinnacle of student nursing education prior to program completion. Students will demonstrate professionalism and accountability for their actions. This course will also cover the characteristics of hazardous wastes and its safe handling, storage, and disposal. 6 credits of electives from MTC Goal areas 2, 4, 6, 9, or 10 must be taken concurrently if they have not previously been completed. (Prerequisites: NURS 2410, 2450, BIOL 270, COMM 130) (Co-requisites: NURS 2510)

Anatomy and Physiology II

BIOL225 4.00 credits

Anatomy and Physiology I is an introduction to the structure and function of the human body under normal and abnormal conditions. It is the first in a two course series. It will cover tissues, the integumentary, skeletal and muscular systems, articulations, nervous tissue, spinal cord and nerves, brain and cranial nerves, anatomy of the heart, blood vessels and circulation and the lymphatic structures. It will also cover cellular biology, cellular transport, cell reproduction and basic review of biochemistry as it relates to the human body. This course contains a laboratory component which includes dissection. For Biology majors, please see BIOL 220 Anatomy and BIOL 230 Physiology. (Prerequisites: CHEM 108 or high school chemistry within the past 3 years, must have a score of 76 or higher on the Elementary Algebra portion of the Accuplacer test or completion of MATH 0075 and MATH 0085 with a grade of C or higher AND a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ0090 with a grade of C or higher) (MNTC 3: Natural Sciences)

Pathophysiology**BIOL240 3.00 credits**

This course provides an in-depth study of the chemical, biological and psychological process involved with alterations of health, using systemic and non-systemic approaches. Besides the two hour lecture, this course meets one additional hour to work on case studies. (Prerequisite: BIOL 230 or 235) (MNTC 3: Natural Sciences)

Intercultural Communication**COMM130 3.00 credits**

The focus of intercultural communication is to develop and improve the knowledge needed to understand culture, communication, how culture influences communication, and the process of communication between people from different cultures or co-cultures. The course also focuses on practicing the skills needed for effective intercultural and intracultural interactions. (Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher) (MNTC 7, 8: Human Diversity, Global Perspectives)

Lifespan Psychology**PSYC110 3.00 credits**

This is an introductory course examining human development across the lifespan, with emphasis on normal physical, cognitive, and social development. (Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer

BIOL235 4.00 credits

Anatomy and Physiology II is an introduction to the structure and function of the human body under normal and abnormal conditions. It is the second in a two course series. It will cover the autonomic, endocrine, immune, respiratory, digestive urinary and reproductive systems. It will also cover fluid electrolyte, acid-base balance, blood, blood pressure regulation and functional characteristics of the heart, special senses, development and inheritance. This course also has a lab component in which students will perform hands on activities to reinforce some of the material taught in lecture. For Biology majors, please see BIOL 220 Anatomy and BIOL 230 Physiology. (Prerequisite: Completion of BIOL 225 with a grade of C or higher) (MNTC 3: Natural Sciences)

Microbiology**BIOL270 4.00 credits**

This course is an introduction to the general principles and methods used in the study of microorganisms. It includes a survey of prokaryotic and eukaryotic microorganisms emphasizing bacteria and viruses. Topics include microbial cell structure and function, metabolism, microbial genetics, and the role of microorganisms in disease, immunity, and other selected applied areas. Laboratory techniques include isolating, culturing, and identifying microorganisms. (Prerequisites: CHEM 108 or CHEM 120 or BIOL 225) (MNTC 3: Natural Sciences)

Composition**ENGL100 4.00 credits**

Composition is concerned with developing, through theory and practice, the ability to communicate in written form for personal and professional reasons. Students will develop writing skills, analytical skills, and critical thinking skills. Students will complete readings, papers, grammar exercises, and in-class activities. Students will learn methods of writing informatively and persuasively. (Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher AND a score of 85.5 or higher on the Sentence Skills portion of the Accuplacer test or completion of ENGL 0080 and ENGL 0090 with a grade of C or higher) (MNTC 1: Communication) This course has an online option.

test or completion of READ 0080 and READ 0090 with a grade of C or higher) (MNTC 5, 7: History/Social & Behavioral Sciences, Human Diversity)

Practical Nursing

A.A.S. Degree • 60 Credits

AAS 2313/AAS 3305



Degree Description

SCC offers a 60 credit Practical Nursing (PN) AAS Degree. Students will be taught to collect data related to client physical and mental functioning, administer prescribed medications, demonstrate effective therapeutic communication, provide thorough reporting and recording, prioritize and care for multiple clients with a variety of disorders, perform technical nursing skills and understand the importance of maintaining confidentiality.

After completion of the 60 credits of the Nursing Program, students are qualified to receive an AAS Degree in Practical Nursing and are eligible to take the NCLEX-PN examination.

Admitted Practical Nursing students are required to participate in a background study.

Student Learning Outcomes

1. Human Flourishing --Promote the human dignity, integrity, self-determination, and personal growth of patients, oneself, and members of the health care team.
2. Nursing Judgment --Provide a rationale for judgments used in the provision of safe, quality care and for decisions that promote the health of patients within a family context.
3. Professional Identity --Assess how one's personal strengths and values affect one's identity as a nurse and one's contributions as a member of the health care team.
4. Spirit of Inquiry-Question the basis for nursing actions, considering research, evidence, tradition, and patient preferences.

Practical Nursing program is approved by Minnesota State Colleges and Universities and the Minnesota Board of Nursing.

For entrance and preparatory requirements, see the Nursing Handbook or AAS Practical Nursing program guide:
<http://www.southcentral.edu/nursing/nursingt-program-description.html>

Admission Dates: Fall and Spring Semester

Offered on the Faribault and North Mankato Campuses

The course requirements listed below are specific to the 2013-2014 school year. If you need to view the program from previous years view

our [Catalog Archive](#).

This credential is part of the Nursing department. [See the Nursing department page for more details](#)

Required Technical Courses (10 Courses)

You must complete the following courses:

[HC 1000](#) Medical Terminology (3 Credits)
[NURS1110](#) Foundation of Nursing (3 Credits)
[NURS1150](#) Clinical Foundation (3 Credits)
[NURS1175](#) Nursing Interventions (3 Credits)
[NURS1275](#) Medication Administration (1 Credit)
[NURS1210](#) Pharmacology for Practical Nurses (2 Credits)
[NURS1310](#) Application of Nursing (5 Credits)
[NURS1350](#) Clinical Application (4 Credits)
[NURS1410](#) Maternal Child Nursing (2 Credits)
[NURS1610](#) Psychosocial Nursing (2 Credits)

Required Liberal Arts and Sciences (7 Courses)

Complete the following additional courses:

[COMM130](#) Intercultural Communication (3 Credits)

[PHIL100](#) Ethics in Society (3 Credits)

Or

[PHIL150](#) Medical Ethics (3 Credits)

[BIOL100](#) Introduction to Biology (4 Credits)

[BIOL225](#) Anatomy and Physiology I (4 Credits)

[BIOL235](#) Anatomy and Physiology II (4 Credits)

[ENGL100](#) Composition (4 Credits)

[PSYC110](#) Lifespan Psychology (3 Credits)

Elective Credits (4 Credits)

Select 4 credits of Technical courses from the following list:

[CDEV1240](#) Working with Diverse Families and Children (3 Credits)

[HHP 100](#) Introduction to Health (3 Credits)

[HLTH1952](#) First Aid (1 Credit)

[HLTH1954](#) Safety (1 Credit)

[HHP 121](#) Topics in Aerobic Conditioning: (1 Credit)

[HHP 122](#) Topics in Mind/Body Fitness: (1 Credit)

[HHP 123](#) Topics in Strength Training: (1 Credit)

[HHP 124](#) Topics in Lifetime Fitness Activities: (1 Credit)

[HHP 205](#) Drug Education (3 Credits)

[HHP 210](#) Stress Management (3 Credits)

[OTEC1001](#) Computer Software for College (2 Credits)

[OTEC1790](#) Keyboarding for College (2 Credits)

[CSS 1811](#) Facilitating Positive Behaviors (4 Credits)

[CSS 1812](#) Introduction to Social Work (3 Credits)

[HC 1934](#) Trained Medication Aide (2 Credits)

[HLTH1950](#) CPR (1 Credit)

Liberal Arts and Sciences - MNTC Goal 5 (3 Credits)

Select a 3 credit course from MnTC Goal Area 5 in a discipline other than Psychology:

PLEASE NOTE: All program plans are preliminary and curriculum may change without notice. Your [catalog of record](#) may have different requirements.

Practical Nursing - Associate of Applied Science Degree Course Descriptions**Medical Terminology****HC 1000 3.00 credits**

This course will be a study of the language used in the health care delivery system. The course presents component medical word parts and their use in building and interpreting medical terminology related to each body system. Spelling, pronunciation and usage of medical terminology will be emphasized. (Prerequisites: None)

Foundation of Nursing**NURS1110 3.00 credits**

This course introduces the student to the basic concepts in nursing. Topics included: professionalism, the nursing process, communication, cultural diversity, asepsis, nutrition, and wellness. Legal and ethical aspects related to nursing will be discussed. Aspects related to pre and post-operative care and pain management will be discussed. Physical comfort and safety concerns are identified. Needs specific to physical and mental disorders in the elderly population are discussed. Principles of documentation will be identified. (Prerequisites: Admission to the Nursing Program, BIOL 225) (Co-requisites: ENGL 100, NURS 1150, 1175, 1210, 1275)

Clinical Foundation**NURS1150 3.00 credits**

This course provides an opportunity to integrate classroom/lab learning with supervised client care in a healthcare setting. Students utilize the nursing process to collect data, implement nursing interventions and administer medications, and begin the documentation process. Nursing care is individualized to meet each client's needs with consideration of the client's culture. Emphasis is placed on organization, critical thinking, therapeutic communication and a holistic approach to client care. Assigned Minnesota Board of Nursing abilities will be applied as appropriate. Professional behavior is an expectation in this course. This course will also cover the characteristics of hazardous wastes and its safe handling, storage, and disposal. (Prerequisites: Admission to the Nursing Program, BIOL 225) (Co-requisites: ENGL 100, NURS 1110, 1175, 1210, 1275)

Nursing Interventions**NURS1175 3.00 credits**

This course provides students the opportunity to learn nursing procedures in a simulated supervised lab setting. Body systems are introduced with an emphasis on the neurological, respiratory, gastrointestinal and genitourinary systems. Competencies covered relate to asepsis, oxygenation, gastrointestinal function and elimination. Critical thinking and medical terminology are threaded throughout the course. Students will have the opportunity to demonstrate skills learned in the laboratory setting. (Prerequisites: Admission to Nursing Program, BIOL 225) (Co-requisites: ENGL 100, NURS 1110, 1175, 1210, 1275)

Medication Administration**NURS1275 1.00 credits**

This course introduces the student to the six rights of medication administration. The course will include non-parenteral administration routes including: oral, topical, nasal, rectal, eye, and ear. The course will also address safe medication administration utilizing the parenteral and enteral routes including: intradermal, subcutaneous, and intramuscular. Medication dosage calculations will be addressed. Medical terminology and abbreviations are threaded throughout the course. Legal aspects related to the practical nurse's scope of practice will be identified. This course will also cover the characteristics of hazardous wastes

Pharmacology for Practical Nurses**NURS1210 2.00 credits**

This course will continue to build on concepts mastered in Medication Administration. The course focuses on drug classifications as they apply to all body systems. The therapeutic and adverse drug effects; noting pertinent lab testing; and awareness of appropriate nursing interventions will be addressed. Ethnic/racial aspects that are particular to medication classifications will be recognized. The student will continue to build skills in medication dosage calculations and will demonstrate competence in this particular area. Medical terminology and abbreviations will be threaded throughout the course. Methods on how to avoid medication errors will be

and its safe handling, storage, and disposal. (Prerequisites: Admission to the Nursing program, BIOL 225) (Co-requisites: NURS 1110, 1150, 1175, 1210)

Application of Nursing

NURS1310 5.00 credits

This course introduces the student to alteration in functioning in basic disease processes. Medical and surgical management of the integumentary; respiratory; gastrointestinal; genitourinary; endocrine; cardiovascular; hematological, including lymph and immune; neurological; sensory; and musculoskeletal systems are covered. In addition, fluid and electrolyte balance, oncology, and end of life issues are discussed. Diagnostic tests, medications, diet therapy and pain management are incorporated into the study of body system diseases. The student will integrate the nursing process by identifying nursing observations and interventions specific to alterations in each body system. This course will also cover the characteristics of hazardous wastes and its safe handling, storage, and disposal. (Prerequisites: Successful completion of semester one of the PN program [NURS 1110, 1150, 1175, 1210, 1275], BIOL 225, ENGL 100) (Co-requisites: NURS 1350, 1410, 1610, PSYC 110)

Maternal Child Nursing

NURS1410 2.00 credits

The student is introduced to the fundamental concepts of growth and development in the childbearing family and influence of community on the family. Students will understand the nature of pregnancy, the fundamental principles of labor and delivery, and nursing care of the mother and newborn. Common illnesses and disorders of the newborn and the child will be discussed. The psychological effect illness has on a child will be addressed. Throughout the course, family centered care will be emphasized and the effect of culture will be discussed. This course will also cover the characteristics of hazardous wastes and its safe handling, storage, and disposal. (Prerequisites: Successful completion of semester one of the PN program [NURS 1110, 1150, 1175, 1210, 1275], BIOL 225, ENGL 100) (Co-requisites: NURS 1310, 1350, 1610, PSYC 110)

Working with Diverse Families and Children

CDEV1240 3.00 credits

Examines how to work with many types of families. Investigates the importance of the family/school partnership, study methods of effectively communicating with families, and identify community organizations and networks that support families. Various classroom strategies will be explored emphasizing culturally and linguistically appropriate anti-bias approaches supporting all children in becoming competent members of a diverse society. (Prerequisites: None)

addressed. This course will also cover the characteristics of hazardous waste and its safe handling, storage and disposal. (Prerequisites: Admission to the Nursing Program, BIOL 225) (Co-requisites: ENGL 100, NURS 1110, 1150, 1175, 1275)

Clinical Application

NURS1350 4.00 credits

Students apply theory related to alteration in body systems through observation and interaction with clients in a variety of health care settings, which include, but are not exclusive to: acute, clinic, and long term care. Nursing interventions are individualized to meet each client's needs with consideration of the client's culture. The nursing process is implemented with an emphasis on critical thinking. Organizational skills are developed with an opportunity to care for multiple clients. Students may have the opportunity to observe the role of the nurse in specialty areas. Students will demonstrate effective communication with other members of the health care team. Professional nursing behavior will be demonstrated. This course will also cover the characteristics of hazardous wastes and its safe handling, storage, and disposal. (Prerequisites: BIOL 225, ENGL 100, NURS 1110, 1150, 1175, 1210, 1275) (Co-requisites: NURS 1310, 1410, 1610)

Psychosocial Nursing

NURS1610 2.00 credits

This course introduces students to concepts in mental health and mental illness. The impact of culture and value systems on mental health is identified. Treatments discussed include: medication and behavior therapy, crisis intervention, and group therapy. Appropriate nursing interventions for clients exhibiting maladaptive behaviors will be discussed. (Prerequisites: Successful completion of semester one of the PN program and A & P 1, NURS 1110, 1150, 1175, 1210, 1275, and ENGL 100) (Co-requisites: NURS 1310, 1350, 1410. PSYC 110 must be taken concurrently as well if it has not been taken previously)

Introduction to Health

HHP 100 3.00 credits

This course introduces students to basic health information and the essential concepts of health which are necessary to improve health literacy. Students will work to develop the essential skills needed to adopt, practice and maintain health enhancing behaviors. Topics may include general health topics such as: drug use and misuse, nutrition and fitness basics, disease prevention, stress management, reproductive and sexual health, complementary and alternative medicine, and consumerism. (Prerequisite: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher)

First Aid

HLTH1952 1.00 credits

This course includes emergency care training for initial treatment of illness and injury. Patient assessment, bleeding control, shock management, soft tissue injury, orthopedic injury, diabetic problems, seizures, poisons, heat exposure, and cold exposure are some of the topics covered in this course. This course is appropriate for anyone who may need to render immediate care. The items covered in the course are just as applicable to an industrial or a business work setting, as they are to a daycare facility, or even at home. (Prerequisite: None).

Topics in Aerobic Conditioning:

HHP 121 1.00 credits

Students will participate in a variety of aerobic conditioning fitness activities that promote improved cardiovascular fitness. Topics may include but are not limited to: walking, running, kickboxing, step aerobics, dance-based aerobics and/or a combination of these activities. Students will learn the basic concepts related to fitness and health, and particularly those related to aerobic conditioning. Students will be able to recognize behaviors that lead to a healthy lifestyle and prevent disease, illness and disability. Students will monitor and track their own cardiovascular fitness level. Students will incorporate a sense of appreciation for and a commitment to fitness and wellness in everyday life and create a personalized plan of action for continuing behaviors that promote a healthy lifestyle. This course may be repeated for credit. (Prerequisite: None)

Topics in Strength Training:

HHP 123 1.00 credits

Students will participate in a variety of strength training activities that promote improved muscular endurance and strength in major muscle groups. Topics may include but are not limited to: the use of resistance bands, free weights, weighted bars, body weight and/or a combination of these activities. Students will learn the basic concepts related to fitness and health, and particularly those related to safe and effective resistance training. Students will be able to recognize behaviors that lead to a healthy lifestyle and prevent disease, illness and disability. Students will monitor and track their own muscular endurance and strength fitness level. Students will incorporate a sense of appreciation for and a commitment to fitness and wellness in everyday life and create a personalized plan of action for continuing behaviors that promote a healthy lifestyle. This course may be repeated for credit. (Prerequisite: None)

Drug Education

HHP 205 3.00 credits

This course provides an overview of drugs and drug use, as well as current issues and themes regarding both individual health and social function. Topics include drug use from a

Safety

HLTH1954 1.00 credits

This course includes basic OSHA safety standards. Hearing protection, eye protection, back injuries, lockout/tagout procedures, Hazard Communication standard, bloodborne pathogens, and substance abuse in the workplace are examples of topics covered in this course. The consequences of disregarding safety practices are explored. This course is appropriate for individuals who may be entering a new vocation. The topics covered include items from the health care realm to items concerning business, manufacturing, and industrial issues. (Prerequisite: None)

Topics in Mind/Body Fitness:

HHP 122 1.00 credits

Students will participate in mind body fitness activities that promote increased flexibility, core strength as well as mental focus and relaxation. Topics may include but are not limited to: different styles of yoga, Pilates, tai chi, dance-based activities and/or a combination of these activities. Students will study and understand basic health and fitness concepts as well as concepts related to mind body fitness. Students will be able to recognize behaviors that lead to a healthy lifestyle and prevent disease, illness and disability. Students will monitor and track their own core strength and flexibility fitness levels. Students will incorporate a sense of appreciation for and a commitment to fitness and wellness in everyday life and create a personalized plan of action for continuing fitness activities that promote a healthy lifestyle. This class can be repeated for credit. (Prerequisite: None)

Topics in Lifetime Fitness Activities:

HHP 124 1.00 credits

Students will participate in lifetime fitness activities to promote maintenance of an active lifestyle throughout the lifecycle. Topics may include but are not limited to: bowling, tennis, soccer, volleyball, golf, skiing, softball, basketball, martial arts, etc. Students will learn the basic concepts related to fitness and health, and particularly those related to lifetime activities. Students will incorporate a sense of appreciation for and a commitment to fitness and wellness in everyday life. This course may be repeated for credit. (Prerequisite: None)

Stress Management

HHP 210 3.00 credits

This course exposes students to a holistic approach to stress management. Students will learn the basic principles, theories, coping skills and relaxation techniques to effectively manage

psychological, emotional, behavioral, pharmacological, legal, and medical perspective. This course also includes an analysis of the personal decisions regarding use/non-use of drugs to the topics of social norms, politics, economics, crime, prevention and treatment. (Prerequisite: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher)

Computer Software for College

OTEC1001 2.00 credits

This course covers basic information about computer hardware and software and the use of computer software as a business productivity tool. Students will be given introductory training on a Windows operating system and the common business applications of word processing, spreadsheets, database, and presentation graphics. This course is designed to equip the student with knowledge of hardware and software applications. This course will cover the business application software that will be used in more advanced courses. (Prerequisites: Basic computer skills or Computer Basic class; mouse proficiency, keyboarding skill of 25 words per minute)

Facilitating Positive Behaviors

CSS 1811 4.00 credits

This course provides an in-depth look at positive supports for children and adults with challenging behaviors and reviews human development, learning styles, and teaching techniques. Emphasis is placed on understanding and supporting the individual's learning barriers by using positive approaches, as well as understanding and responding to behaviors with positive supports. Students will explore how their individual values and personal experiences influence the ways in which they respond to and assess individual's abilities. Students will also acquire knowledge and skills related to basic approaches and principles, completing various types of functional assessments, the importance of using non-aversive interventions and the selection and use of appropriate non-aversive behavioral supports. Methods for designing, planning, developing and implementing skill orientated support plans are taught in this course. Completing functional assessments, observing, documenting and reporting progress on learning plans are learned through practical experience. The student will be able to write basic learning/behavior support programs. (Prerequisites: None)

Trained Medication Aide

HC 1934 2.00 credits

This course includes the study of legal requirements concerning drugs and drug administration. General information about medications, terminology related to medication administration and use of reference sources will be studied. Students will learn actions, usual dose, toxic symptoms and special considerations of a variety of drugs. Students will not administer medications but will learn basic guidelines for medication administration. (Prerequisites: None)

personal stress. Topics include: the effects of the stress response, the relationship between stress and health/disease, the identification of personal stress levels, the application of coping skills and relaxation techniques, and the understanding of the importance of personal responsibility for health. (Prerequisite: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher)

Keyboarding for College

OTEC1790 2.00 credits

This course covers the development of basic keyboarding techniques using the touch-typing method of the computer. Emphasis will be on learning the touch-typing method of typing alphabetic, number and symbol keys. The keyboarding goal will be to attain a minimum rate of 35 words per minute with accuracy. (Prerequisites: None)

Introduction to Social Work

CSS 1812 3.00 credits

This course provides students with an introduction to the profession of social work. It will provide a broad overview of generalist social work practice with an integrative approach among various levels of practice: individual, environmental and societal. Emphasis will be placed on diversity, ethics, social problems, and self-determination. (Prerequisites: Must have a score of 77.5 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher. Must have a score of 85.5 or higher on the Sentence Skills portion of the Accuplacer test or completion of ENGL 0080 and ENGL 0090 with a grade of C or higher.)

CPR

HLTH1950 1.00 credits

This course covers the skills of infant, child and adult single and two rescue CPR as well as relief of foreign body airway obstruction procedures for infant, child and adult. Automated external defibrillators, bag-valve masks and pocket masks are also used. Signs and symptoms of stroke and heart attack are also discussed. This course meets the criteria of the American Heart Association 2010 Guidelines for CPR and ECC.

Intercultural Communication

COMM130 3.00 credits

The focus of intercultural communication is to develop and improve the knowledge needed to understand culture, communication, how culture influences communication, and the process of communication between people from different cultures or co-cultures. The course also focuses on practicing the skills needed for effective intercultural and intracultural interactions. (Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher) (MNTC 7, 8: Human Diversity, Global Perspectives)

Medical Ethics

PHIL150 3.00 credits

This course examines the moral problems confronting physicians, patients and others concerned with medical treatment, research, and health policy. It covers general meta-ethical issues-constructivism and objectivism-along with the normative principles supplied by such theories as utilitarianism, natural law, ethical pluralism and virtue ethics. Finally, the course addresses particular issues in medical ethics such as beginning and end of life issues, doctor and patient obligations (e.g. informed consent, patient confidentiality, proxy-decision making, etc.), the allocation of medical resources, and biomedical research. (Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher) (MNTC 6, 9: Humanities and Fine Arts, Ethical & Civic Responsibility)

Anatomy and Physiology I

BIOL225 4.00 credits

Anatomy and Physiology I is an introduction to the structure and function of the human body under normal and abnormal conditions. It is the first in a two course series. It will cover tissues, the integumentary, skeletal and muscular systems, articulations, nervous tissue, spinal cord and nerves, brain and cranial nerves, anatomy of the heart, blood vessels and circulation and the lymphatic structures. It will also cover cellular biology, cellular transport, cell reproduction and basic review of biochemistry as it relates to the human body. This course contains a laboratory component which includes dissection. For Biology majors, please see BIOL 220 Anatomy and BIOL 230 Physiology. (Prerequisites: CHEM 108 or high school chemistry within the past 3 years, must have a score of 76 or higher on the Elementary Algebra portion of the Accuplacer test or completion of MATH 0075 and MATH 0085 with a grade of C or higher AND a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ0090 with a grade of C or higher) (MNTC 3: Natural Sciences)

Composition

ENGL100 4.00 credits

Ethics in Society

PHIL100 3.00 credits

This course studies the foundations for moral beliefs, judgments, and values and the part they play in practical ethical judgments. In its application, the course deals with contemporary issues and explores specific issues of personal morality as well as business and social ethics. (Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher) (MNTC 6, 9: Humanities & Fine Arts, Ethical & Civil Responsibility)

Introduction to Biology

BIOL100 4.00 credits

Introduction to Biology familiarizes students with fundamental biological principles and processes occurring within our natural world. This course engages students in the methodology and practice of scientific investigation, and emphasizes molecular and cellular processes, systems of the human body, and human impact on the environment. Discussions of organisms are framed by the sciences of ecology and evolution with a focus on the relationship between biological structure and function. Lecture and a 2 hour lab are included. (Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher) (MNTC 3: Natural Sciences)

Anatomy and Physiology II

BIOL235 4.00 credits

Anatomy and Physiology II is an introduction to the structure and function of the human body under normal and abnormal conditions. It is the second in a two course series. It will cover the autonomic, endocrine, immune, respiratory, digestive urinary and reproductive systems. It will also cover fluid electrolyte, acid-base balance, blood, blood pressure regulation and functional characteristics of the heart, special senses, development and inheritance. This course also has a lab component in which students will perform hands on activities to reinforce some of the material taught in lecture. For Biology majors, please see BIOL 220 Anatomy and BIOL 230 Physiology. (Prerequisite: Completion of BIOL 225 with a grade of C or higher) (MNTC 3: Natural Sciences)

Lifespan Psychology

PSYC110 3.00 credits

Composition is concerned with developing, through theory and practice, the ability to communicate in written form for personal and professional reasons. Students will develop writing skills, analytical skills, and critical thinking skills. Students will complete readings, papers, grammar exercises, and in-class activities. Students will learn methods of writing informatively and persuasively. (Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher AND a score of 85.5 or higher on the Sentence Skills portion of the Accuplacer test or completion of ENGL 0080 and ENGL 0090 with a grade of C or higher)(MNTC 1: Communication) This course has an online option.

This is an introductory course examining human development across the lifespan, with emphasis on normal physical, cognitive, and social development. (Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher) (MNTC 5, 7: History/Social & Behavioral Sciences, Human Diversity)

Practical Nursing

Diploma • 40 Credits

DIP 2302/DIP 3304



Degree Description

SCC offers a 40 credit Practical Nursing (PN) Diploma. Students will be taught to collect data related to client physical and mental functioning, administer prescribed medications, demonstrate effective therapeutic communication, provide thorough reporting and recording, prioritize and care for multiple clients with a variety of disorders, perform technical nursing skills and understand the importance of maintaining confidentiality.

After completion of the 40 credits of the Nursing Program, students are qualified to receive the Practical Nursing Diploma and are eligible to take the NCLEX-PN examination.

Admitted Practical Nursing students are required to participate in a background study.

Student Learning Outcomes

1. Human Flourishing --Promote the human dignity, integrity, self-determination, and personal growth of patients, oneself, and members of the health care team.
2. Nursing Judgment --Provide a rationale for judgments used in the provision of safe, quality care and for decisions that promote the health of patients within a family context.
3. Professional Identity --Assess how one's personal strengths and values affect one's identity as a nurse and one's contributions as a member of the health care team.
4. Spirit of Inquiry-Question the basis for nursing actions, considering research, evidence, tradition, and patient preferences.

Admission Dates: Fall and Spring Semester

Offered on the Faribault and North Mankato Campuses

The course requirements listed below are specific to the 2013-2014 school year. If you need to view the program from previous years view our [Catalog Archive](#).

This credential is part of the Nursing department. [See the Nursing department page for more details](#)

Required Technical Courses (9 Courses)

You must complete the following courses:

- [NURS1110](#) Foundation of Nursing (3 Credits)
- [NURS1150](#) Clinical Foundation (3 Credits)
- [NURS1175](#) Nursing Interventions (3 Credits)

Required Liberal Arts & Sciences (4 Courses)

Complete the following courses:

- [ENGL100](#) Composition (4 Credits)
- [BIOL225](#) Anatomy and Physiology I (4 Credits)
- [BIOL235](#) Anatomy and Physiology II (4 Credits)

[**NURS1275**](#) Medication Administration (1 Credit)
[**NURS1210**](#) Pharmacology for Practical Nurses (2 Credits)
[**NURS1310**](#) Application of Nursing (5 Credits)
[**NURS1350**](#) Clinical Application (4 Credits)
[**NURS1410**](#) Maternal Child Nursing (2 Credits)
[**NURS1610**](#) Psychosocial Nursing (2 Credits)

[**PSYC110**](#) Lifespan Psychology (3 Credits)

PLEASE NOTE: All program plans are preliminary and curriculum may change without notice. Your [catalog of record](#) may have different requirements.

Practical Nursing - Diploma of Occupational Proficiency Course Descriptions

Foundation of Nursing

NURS1110 3.00 credits

This course introduces the student to the basic concepts in nursing. Topics included: professionalism, the nursing process, communication, cultural diversity, asepsis, nutrition, and wellness. Legal and ethical aspects related to nursing will be discussed. Aspects related to pre and post-operative care and pain management will be discussed. Physical comfort and safety concerns are identified. Needs specific to physical and mental disorders in the elderly population are discussed. Principles of documentation will be identified. (Prerequisites: Admission to the Nursing Program, BIOL 225) (Co-requisites: ENGL 100, NURS 1150, 1175, 1210, 1275)

Clinical Foundation

NURS1150 3.00 credits

This course provides an opportunity to integrate classroom/lab learning with supervised client care in a healthcare setting. Students utilize the nursing process to collect data, implement nursing interventions and administer medications, and begin the documentation process. Nursing care is individualized to meet each client's needs with consideration of the client's culture. Emphasis is placed on organization, critical thinking, therapeutic communication and a holistic approach to client care. Assigned Minnesota Board of Nursing abilities will be applied as appropriate. Professional behavior is an expectation in this course. This course will also cover the characteristics of hazardous wastes and its safe handling, storage, and disposal. (Prerequisites: Admission to the Nursing Program, BIOL 225) (Co-requisites: ENGL 100, NURS 1110, 1175, 1210, 1275)

Nursing Interventions

NURS1175 3.00 credits

This course provides students the opportunity to learn nursing procedures in a simulated supervised lab setting. Body systems are introduced with an emphasis on the neurological, respiratory, gastrointestinal and genitourinary systems. Competencies covered relate to asepsis, oxygenation, gastrointestinal function and elimination. Critical thinking and medical terminology are threaded throughout the course. Students will have the opportunity to demonstrate skills learned in the laboratory setting. (Prerequisites: Admission to Nursing Program, BIOL 225) (Co-requisites: ENGL 100, NURS 1110, 1175, 1210, 1275)

Medication Administration

NURS1275 1.00 credits

This course introduces the student to the six rights of medication administration. The course will include non-parenteral administration routes including: oral, topical, nasal, rectal, eye, and ear. The course will also address safe medication administration utilizing the parenteral and enteral routes including: intradermal, subcutaneous, and intramuscular. Medication dosage calculations will be addressed. Medical terminology and abbreviations are threaded throughout the course. Legal aspects related to the practical nurse's scope of practice will be identified. This course will also cover the characteristics of hazardous wastes and its safe handling, storage, and disposal. (Prerequisites: Admission to the Nursing program, BIOL 225) (Co-requisites: NURS 1110, 1150, 1175, 1210)

Pharmacology for Practical Nurses

NURS1210 2.00 credits

This course will continue to build on concepts mastered in Medication Administration. The course focuses on drug classifications as they apply to all body systems. The therapeutic and adverse drug effects; noting pertinent lab testing; and awareness of appropriate nursing interventions will be addressed. Ethnic/racial aspects that are particular to medication classifications will be recognized. The student will continue to build skills in medication dosage calculations and

Application of Nursing

NURS1310 5.00 credits

This course introduces the student to alteration in functioning in basic disease processes. Medical and surgical management of the integumentary; respiratory; gastrointestinal; genitourinary; endocrine; cardiovascular; hematological, including lymph and immune; neurological; sensory; and musculoskeletal systems are covered. In addition, fluid and electrolyte balance, oncology, and end of life issues are discussed. Diagnostic tests, medications, diet therapy and

will demonstrate competence in this particular area. Medical terminology and abbreviations will be threaded throughout the course. Methods on how to avoid medication errors will be addressed. This course will also cover the characteristics of hazardous waste and its safe handling, storage and disposal. (Prerequisites: Admission to the Nursing Program, BIOL 225) (Co-requisites: ENGL 100, NURS 1110, 1150, 1175, 1275)

Clinical Application

NURS1350 4.00 credits

Students apply theory related to alteration in body systems through observation and interaction with clients in a variety of health care settings, which include, but are not exclusive to: acute, clinic, and long term care. Nursing interventions are individualized to meet each client's needs with consideration of the client's culture. The nursing process is implemented with an emphasis on critical thinking. Organizational skills are developed with an opportunity to care for multiple clients. Students may have the opportunity to observe the role of the nurse in specialty areas. Students will demonstrate effective communication with other members of the health care team. Professional nursing behavior will be demonstrated. This course will also cover the characteristics of hazardous wastes and its safe handling, storage, and disposal. (Prerequisites: BIOL 225, ENGL 100, NURS 1110, 1150, 1175, 1210, 1275) (Co-requisites: NURS 1310, 1410, 1610)

Psychosocial Nursing

NURS1610 2.00 credits

This course introduces students to concepts in mental health and mental illness. The impact of culture and value systems on mental health is identified. Treatments discussed include: medication and behavior therapy, crisis intervention, and group therapy. Appropriate nursing interventions for clients exhibiting maladaptive behaviors will be discussed. (Prerequisites: Successful completion of semester one of the PN program and A & P 1, NURS 1110, 1150, 1175, 1210, 1275, and ENGL 100) (Co-requisites: NURS 1310, 1350, 1410. PSYC 110 must be taken concurrently as well if it has not been taken previously)

Anatomy and Physiology I

BIOL225 4.00 credits

Anatomy and Physiology I is an introduction to the structure and function of the human body under normal and abnormal conditions. It is the first in a two course series. It will cover tissues, the integumentary, skeletal and muscular systems, articulations, nervous tissue, spinal cord and nerves, brain and cranial nerves, anatomy of the heart, blood vessels and circulation and the lymphatic structures. It will also cover cellular biology, cellular transport, cell reproduction and basic review of biochemistry as it relates to the human body. This course contains a laboratory component which includes

pain management are incorporated into the study of body system diseases. The student will integrate the nursing process by identifying nursing observations and interventions specific to alterations in each body system. This course will also cover the characteristics of hazardous wastes and its safe handling, storage, and disposal. (Prerequisites: Successful completion of semester one of the PN program [NURS 1110, 1150, 1175, 1210, 1275], BIOL 225, ENGL 100) (Co-requisites: NURS 1350, 1410, 1610, PSYC 110)

Maternal Child Nursing

NURS1410 2.00 credits

The student is introduced to the fundamental concepts of growth and development in the childbearing family and influence of community on the family. Students will understand the nature of pregnancy, the fundamental principles of labor and delivery, and nursing care of the mother and newborn. Common illnesses and disorders of the newborn and the child will be discussed. The psychological effect illness has on a child will be addressed. Throughout the course, family centered care will be emphasized and the effect of culture will be discussed. This course will also cover the characteristics of hazardous wastes and its safe handling, storage, and disposal. (Prerequisites: Successful completion of semester one of the PN program [NURS 1110, 1150, 1175, 1210, 1275], BIOL 225, ENGL 100) (Co-requisites: NURS 1310, 1350, 1610, PSYC 110)

Composition

ENGL100 4.00 credits

Composition is concerned with developing, through theory and practice, the ability to communicate in written form for personal and professional reasons. Students will develop writing skills, analytical skills, and critical thinking skills. Students will complete readings, papers, grammar exercises, and in-class activities. Students will learn methods of writing informatively and persuasively. (Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher AND a score of 85.5 or higher on the Sentence Skills portion of the Accuplacer test or completion of ENGL 0080 and ENGL 0090 with a grade of C or higher)(MNTC 1: Communication) This course has an online option.

Anatomy and Physiology II

BIOL235 4.00 credits

Anatomy and Physiology II is an introduction to the structure and function of the human body under normal and abnormal conditions. It is the second in a two course series. It will cover the autonomic, endocrine, immune, respiratory, digestive urinary and reproductive systems. It will also cover fluid electrolyte, acid-base balance, blood, blood pressure regulation and functional characteristics of the heart, special senses, development and inheritance. This course also has a lab component in which students will perform hands on activities to reinforce some of the material taught in lecture.

dissection. For Biology majors, please see BIOL 220 Anatomy and BIOL 230 Physiology. (Prerequisites: CHEM 108 or high school chemistry within the past 3 years, must have a score of 76 or higher on the Elementary Algebra portion of the Accuplacer test or completion of MATH 0075 and MATH 0085 with a grade of C or higher AND a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ0090 with a grade of C or higher) (MNTC 3: Natural Sciences)

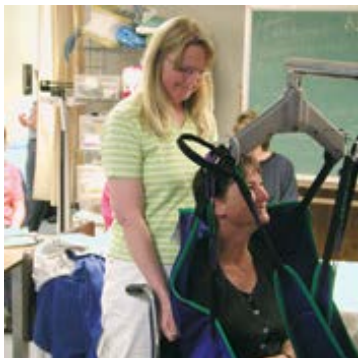
For Biology majors, please see BIOL 220 Anatomy and BIOL 230 Physiology. (Prerequisite: Completion of BIOL 225 with a grade of C or higher) (MNTC 3: Natural Sciences)

Lifespan Psychology

PSYC110 3.00 credits

This is an introductory course examining human development across the lifespan, with emphasis on normal physical, cognitive, and social development. (Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher) (MNTC 5, 7: History/Social & Behavioral Sciences, Human Diversity)

Nursing Assistant (Basic Nursing)



Degree Description

The Nursing Assistant-Home Health Aide Program prepares individuals to work in the hospitals, nursing homes and home care settings. Students learn to safely assist clients with basic physical and emotional needs.

Nursing Assistant/Basic Nursing is NOT a degree program at South Central College. Rather, it is a course designed to prepare you for the CNA certification exam.

This course may not be eligible for federal student aid if not taken as part of a designated program. See advisor for further information.

Minnesota law requires that all persons who provide services that involve direct contact with patients and residents at a health care facility be subject to a background study. A student who is disqualified from having direct patient contact as a result of the background study will not be permitted to participate in a clinical placement in a health care facility and will not be allowed to continue in the nursing program or Basic Nursing Course. Students who have a disqualification that the Minnesota Commissioner of Health may consider setting aside will not be allowed to continue in the nursing program (an exception may be made for students enrolled in the Basic Nursing Course).

Admission Dates: Fall, Spring, and Summer Semester

Offered on the Faribault and North Mankato Campuses

The course requirements listed below are specific to the 2013-2014 school year. If you need to view the program from previous years view our [Catalog Archive](#).

This credential is part of the Nursing department. [See the Nursing department page for more details](#)

(1 Course)

HCTC1886 Nursing Assistant (4 Credits)

PLEASE NOTE: All program plans are preliminary and curriculum may change without notice. Your [catalog of record](#) may have different requirements.

Nursing Assistant (Basic Nursing) - Course Descriptions**Nursing Assistant**

HCTC1886 4.00 Credits

This 4 credit course meets federal and state criteria for eligibility to take the state test to become a NA, R/HHA. It introduces concepts of basic human needs, the health/illness continuum and focuses on preparing the student to safely perform basic nursing skills needed to function as a Nursing Assistant or Home Health Aide. (Prerequisites: None)

Office Administration and Technology Department Overview

The Office Administration and Technology Program prepares students for employment as Administrative Office Managers, Administrative Assistants, Legal Administrative Assistants, Office Systems Specialists, and/or Client Relations Specialists and/or Business Software Specialists. Students find learning convenient through a variety of face-to-face and online courses taught by South Central College's knowledgeable and experienced faculty. Office Administration and Technology graduates locate career opportunities in a variety of fields, such as engineering, agriculture, education, government, manufacturing, banking, law-related offices, and medical facilities. Employers hire South Central College graduates because of their excellent computer application skills, professionalism, customer relations, and communication skills. The Office Administration and Technology program is a PC-based (not MAC-based) and Microsoft-based program.

Basic Entrance Requirements

:

Students must either currently have or attain the skills in the following courses: Computer Software for College (OTEC1001) and Keyboarding for College (OTEC1790)

Core Competencies

1. Input data with speed and accuracy at industry standard.
2. Apply knowledge of application software and file management.
3. Demonstrate oral and written business communications.
4. Demonstrate professional office etiquette.
5. Apply office organization principles.

Department Faculty

Lynda Ernst, Jean Guerber, Becky Miller, Diane Wergeland

Office Administration and Technology Degrees

Administrative Office Management AS Degree
Administrative Assistant AAS Degree
Legal Administrative Assistant AAS Degree
Office Systems Specialist AAS Degree
Administrative Assistant Diploma
Legal Administrative Assistant Diploma
Business Software Certificate
Client Relations Specialist Certificate

Administrative Office Management

A.S. Degree • 60 Credits

AS 2281/AS 3281



Degree Description

Students enrolled in the Administrative Office Management Associate in Science (AS) Degree are prepared to manage functions in the office environment. This degree option is recommended for experienced office professionals as well as entry-level administrative professionals who are looking to increase their potential for promotion. Graduates of this degree program receive training in a variety of office management functions including those in communications, information resources, and management. Students earn half of the required credits (30) in business-related courses and the other half (30) in business-related liberal arts and sciences classes. Students find learning convenient through a variety of face-to-face and online courses taught by South Central College's knowledgeable and experienced faculty. Students may also choose to transfer this degree to Winona State University's Bachelor of Science Degree in Business Education - Teaching to prepare as a business educator or as a corporate trainer.

Admission Dates: Fall and Spring Semester

Offered on the Faribault and North Mankato Campuses

The course requirements listed below are specific to the 2013-2014 school year. If you need to view the program from previous years view our [Catalog Archive](#).

This credential is part of the Office Administration and Technology department. [See the Office Administration and Technology department page for more details](#)

Required Keyboarding (1 Course)

Select one of the following keyboarding courses. (Choice dependent on your keyboarding assessment.)

[OTEC1790](#) Keyboarding for College (2 Credits)

[OTEC1800](#) Keyboarding I (3 Credits)

Required Technical Courses (7 Courses)

Select the following courses:

[OTEC1001](#) Computer Software for College (2 Credits)

[OTEC1820](#) Business English (3 Credits)

[OTEC1825](#) Office Financial Applications I (3 Credits)

[OTEC1875](#) Word Processing Concepts & Applications: Core (3 Credits)

[OTEC2820](#) Business Communications (3 Credits)

[OTEC2870](#) Information Resource Management (3 Credits)

[OTEC2860](#) Office Management (3 Credits)

Or

[MKT 1930](#) Human Resource Management (3 Credits)

Select 7 credits from the following courses: (7 Credits)

[MKT 1810](#) Principles of Marketing (3 Credits)

[MKT 1820](#) Introduction to Business (3 Credits)

[ACCT1810](#) Financial Accounting (4 Credits)

[ACCT1811](#) Managerial Accounting (4 Credits)

[HHP 205](#) Drug Education (3 Credits)

Required Liberal Arts and Sciences (5 Courses)

To complete an AS degree, students must complete 30 MNTC credits from 6 of the 10 MNTC goal areas. You are required to complete MNTC Goal 6 by taking two courses from two disciplines.

The following courses are required:

[ENGL100](#) Composition (4 Credits)

[COMM110](#) Public Speaking (3 Credits)

[COMM140](#) Interpersonal Communication (3 Credits)

[ECON110](#) Principles of Macroeconomics (3 Credits)

Or

[ECON120](#) Principles of Microeconomics (3 Credits)

Additional Required Liberal Arts and Sciences: (1 Course)

Choose one course from MNTC Goal Area 3:

[BIOL100](#) Introduction to Biology (4 Credits)
[BIOL220](#) Human Anatomy (4 Credits)
[BIOL225](#) Anatomy and Physiology I (4 Credits)
[BIOL235](#) Anatomy and Physiology II (4 Credits)
[BIOL230](#) Human Physiology (4 Credits)
[BIOL240](#) Pathophysiology (3 Credits)
[BIOL270](#) Microbiology (4 Credits)
[CHEM101](#) The Chemistry of Everything (3 Credits)
[CHEM108](#) Introduction to Chemistry (4 Credits)
[CHEM120](#) Principles of Chemistry I (5 Credits)
[CHEM220](#) Organic Chemistry I (5 Credits)
[BIOL101](#) Introduction to Ecology (4 Credits)
[CHEM121](#) Principles of Chemistry II (5 Credits)
[GEOG101](#) Introduction to Physical Geography (3 Credits)
[PHYS101](#) Introductory Physics (3 Credits)
[PHYS211](#) Principles in Physics I (4 Credits)
[PHYS212](#) Principles in Physics II (4 Credits)
[PHYS221](#) General Physics I (4 Credits)
[PHYS222](#) General Physics II (4 Credits)

Additional required MATH Course (1 Course)

Choose one course from the following list:

[MATH120](#) College Algebra (4 Credits)
[MATH125](#) Trigonometry (3 Credits)
[MATH130](#) Pre-Calculus (4 Credits)
[MATH131](#) Calculus I (4 Credits)
[MATH132](#) Calculus II (4 Credits)
[MATH154](#) Elementary Statistics (4 Credits)
[MATH231](#) Ordinary Differential Equations (4 Credits)
[MATH233](#) Multivariable Calculus (4 Credits)
[MATH240](#) Elementary Linear Algebra (4 Credits)

Additional required MNTC Goal Area 5 course: (1 Course)

Choose 1 additional History or Social Science course not in ECON.

[ANTH100](#) Introduction to Anthropology (4 Credits)
[HIST120](#) U.S. History I (4 Credits)
[HIST121](#) U. S. History II (4 Credits)
[HIST160](#) World History I (4 Credits)
[HIST161](#) World History II: The Rise of the West (4 Credits)
[HIST162](#) World History III: The Twentieth Century (4 Credits)
[HIST205](#) Special Topics in History: (1 - 4 Credits)
[POL 110](#) American Government (3 Credits)
[PSYC100](#) Introduction to Psychology (4 Credits)
[PSYC110](#) Lifespan Psychology (3 Credits)
[PSYC140](#) Psychology of Positive Adjustment (4 Credits)
[ANTH121](#) Four Cultures (4 Credits)
[PSYC210](#) Social Psychology (4 Credits)
[PSYC220](#) Health Psychology (4 Credits)
[PSYC240](#) Child and Adolescent Psychology (4 Credits)
[PSYC250](#) Industrial Organizational Psychology (4 Credits)
[PSYC280](#) Special Topics in Psychology: (4 Credits)
[SOC 100](#) Family Personal Relations (3 Credits)
[SOC 101](#) Introduction to Sociology (3 Credits)
[SOC 110](#) Social Problems (3 Credits)
[SOC 201](#) Marriage and Family (3 Credits)
[SOC 205](#) Special Topics in Sociology: (3 Credits)
[ECON110](#) Principles of Macroeconomics (3 Credits)
[SOC 206](#) Juvenile Delinquency (3 Credits)
[SOC 210](#) Social Stratification - Who Gets What and Why? (3 Credits)
[SOC 251](#) Criminology and Criminal Behavior (3 Credits)
[SOC 259](#) Drugs and Society (3 Credits)

Additional required MNTC Goal 6 Courses

Choose TWO courses from TWO different disciplines in MNTC Goal 6.

PLEASE NOTE: All program plans are preliminary and curriculum may change without notice. Your [catalog of record](#) may have different requirements.

Administrative Office Management - Associate in Science Course Descriptions**Keyboarding for College****OTEC1790 2.00 credits**

This course covers the development of basic keyboarding techniques using the touch-typing method of the computer. Emphasis will be on learning the touch-typing method of typing alphabetic, number and symbol keys. The keyboarding goal will be to attain a minimum rate of 35 words per minute with accuracy. (Prerequisites: None)

Computer Software for College**OTEC1001 2.00 credits**

This course covers basic information about computer hardware and software and the use of computer software as a business productivity tool. Students will be given introductory training on a Windows operating system and the common business applications of word processing, spreadsheets, database, and presentation graphics. This course is designed to equip the student with knowledge of hardware and software applications. This course will cover the business application software that will be used in more advanced courses.

(Prerequisites: Basic computer skills or Computer Basic class; mouse proficiency, keyboarding skill of 25 words per minute)

Office Financial Applications I**OTEC1825 3.00 credits**

This course introduces students to the concepts of basic bookkeeping features that build the foundation for analyzing transactions, applying the accounting equation, and creating financial statements. Students will also learn how to create and use spreadsheets with Microsoft Excel. Topics will include input and editing features, formulas and functions, formatting, creating charts and analyzing information in workbooks to organize and manage data. (Prerequisite: Basic Windows navigation skills)

Business Communications**OTEC2820 3.00 credits**

This course covers the principles of effective writing and requires students to plan, compose, and format a variety of business communications. Emphasis is on proofreading,

Keyboarding I**OTEC1800 3.00 credits**

This course reviews basic keyboarding techniques using the touch method. Emphasis is on building speed and accuracy on a computer keyboard. Basic formatting concepts for producing documents such as letters, envelopes, memos, tables, and reports will be introduced. Proofreading skills will be emphasized. (Minimum keyboarding speed of 35 words per minute)

Business English**OTEC1820 3.00 credits**

This course is designed to provide students with comprehensive, up-to-date instruction in the correct use of English grammar, sentence structure, punctuation, capitalization, abbreviations, and number usage in written business communications. Students will develop proficiency in proofreading, identifying common errors, and using reference materials to correct sentences, paragraphs, and business documents. (Prerequisite: None)

Word Processing Concepts & Applications: Core**OTEC1875 3.00 credits**

This course is designed to build an understanding of word processing using Microsoft Word software. It begins with the introduction of concepts such as file management, entering text, text editing, terminology, on-line help, spell checking, and printing. It continues with all the basic skills you will need to use the application at a core level of proficiency. (Prerequisites: None)

Information Resource Management**OTEC2870 3.00 credits**

This course covers rules and procedures for coding, indexing, filing, and retrieving documents in alphabetical, numeric, geographic, and subject systems. Applications include

editing, and revising communications not just to make them correct but also to make them better. Types of communications may include letters, memos, e-mail, announcements, instructions, form letters, and news releases. Specific letter or memo types may include request and response, claim and adjustment, persuasive, and goodwill communications. Students will learn about letter and envelope formats, international communication differences, and organizational approaches for writing correspondence. Students will learn about words to avoid, transitions, parallel structure, and the you attitude. Students will also be introduced to library and Internet research techniques and will analyze real-world documents. (Prerequisite: OTEC1820)

Office Management

OTEC2860 3.00 credits

This course covers the managerial and organizational processes of Administrative Office Management; office environmental management, which include office layout, office environment, and office equipment and furniture; office employee management, which includes selecting, developing, supervising, and motivating office employees as well as performance appraisal, job analysis, job evaluation, salary administration, and work measurement and productivity; office systems analysis; and office functions management. (Prerequisites: OTEC 1840, 1875, 2820)

Principles of Marketing

MKT 1810 3.00 credits

This course covers the basic marketing concepts for Marketing and non-marketing students. Developing a rational marketing approach to the practices of modern marketing as they are used in a wide variety of settings. The course includes discussion on the marketing mix, the four p's of marketing, channels of distribution, target marketing, ethic, social responsibility, global marketing and the impact of the internet.

Financial Accounting

ACCT1810 4.00 credits

This course covers the fundamental accounting concepts and principles which are used in a business environment. Topics include recording transactions related to internal control, receivables, short-term investments, inventories, plant and equipment, intangible assets, and long-term investments. (Prerequisites: None)

Drug Education

HHP 205 3.00 credits

This course provides an overview of drugs and drug use, as well as current issues and themes regarding both individual

simulated correspondence filing and card filing using both manual and electronic methods. Students will learn how to use database management software (Microsoft Access) to manage information. Records management topics emphasize records control and retention, final disposition of records, and records management issues and trends. (Prerequisites: None)

Human Resource Management

MKT 1930 3.00 credits

This course focuses on human resource management issues. The course covers the techniques and legal aspects of recruiting, hiring, firing, promotion, documentation, evaluation and other areas essential to the personnel function. (Prerequisites: None)

Introduction to Business

MKT 1820 3.00 credits

This course covers the basic fundamentals of the world of business. Emphasis will be placed on the nature of business and the trends that will change the way business is conducted in the twenty-first century. The latest technology and business terms will provide an updated look at the business world.

Managerial Accounting

ACCT1811 4.00 credits

This course covers the accounting principles and concepts applicable to partnership and corporate organizations, accounting for current, contingent, and long-term liabilities, investments, cash flow statements, financial statement analysis, department and branch accounting, consolidated financial statements, plant assets, and intangible assets. Also considered are concepts applicable to analyzing financial statements, managerial and cost accounting principles, and budgeting. (Prerequisites: ACCT1810 with a grade of C or higher)

Composition

ENGL100 4.00 credits

Composition is concerned with developing, through theory and practice, the ability to communicate in written form for personal

health and social function. Topics include drug use from a psychological, emotional, behavioral, pharmacological, legal, and medical perspective. This course also includes an analysis of the personal decisions regarding use/non-use of drugs to the topics of social norms, politics, economics, crime, prevention and treatment. (Prerequisite: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher)

Public Speaking

COMM110 3.00 credits

This course develops or improves effective performance in acquiring, evaluating, organizing, and communicating information. Learners develop and apply critical and creative thinking to structuring arguments, making presentations, using multimedia, and supporting each other in impromptu and extemporaneous speaking. Course de-emphasizes competition and stresses personal and workplace effectiveness in communication skills. (Prerequisites: Must have a score of 86 or higher on the Sentence Skills portion of the Accuplacer test or completion of ENGL 0080 and ENGL 0090 with a grade of C or higher) (MNTC 1: Communication)

Principles of Macroeconomics

ECON110 3.00 credits

A study of aggregate economic behavior and current economic issues, policies and problems. Macroeconomics measures such as inflation, employment, and the growth of output are examined along with the tools a government can use to foster a stable economy. (Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher) (MNTC 5, 8: History/Social & Behavioral Science, Global Perspective)

Introduction to Biology

BIOL100 4.00 credits

Introduction to Biology familiarizes students with fundamental biological principles and processes occurring within our natural world. This course engages students in the methodology and practice of scientific investigation, and emphasizes molecular and cellular processes, systems of the human body, and human impact on the environment. Discussions of organisms are framed by the sciences of ecology and evolution with a focus on the relationship between biological structure and function. Lecture and a 2 hour lab are included. (Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher) (MNTC 3: Natural Sciences)

Anatomy and Physiology I

and professional reasons. Students will develop writing skills, analytical skills, and critical thinking skills. Students will complete readings, papers, grammar exercises, and in-class activities. Students will learn methods of writing informatively and persuasively. (Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher AND a score of 85.5 or higher on the Sentence Skills portion of the Accuplacer test or completion of ENGL 0080 and ENGL 0090 with a grade of C or higher)(MNTC 1: Communication) This course has an online option.

Interpersonal Communication

COMM140 3.00 credits

In this class, participants will examine key components of interpersonal communication theory, identify the interpersonal communication skills necessary for healthy relationships, assess their own interpersonal communication effectiveness, and practice and hone interpersonal communication skills necessary for healthy home and work relationships. This course will also address relevant issues of social interaction, including how human diversity/culture (age, race, gender, etc.) affects our interpersonal communication. (Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher)(MNTC 1: Communication)

Principles of Microeconomics

ECON120 3.00 credits

This course examines theories of how various types of product, service, and resource markets operate and the resulting implications for public policy. Topics include decision-making by consumers, business firms, and government as well as price determination, resource allocation, and income determination via markets. (Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher) (MNTC 5, 8: History/Social & Behavioral Sciences, Global Perspective).

Human Anatomy

BIOL220 4.00 credits

This course takes an in-depth look at the anatomy of the human body systems. The course emphasizes structure and anatomical function at the cellular, tissue, organ and systemic level. Dysfunctions are included but the body in homeostasis is emphasized. This course includes a lab with dissection. (Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher) (MNTC 3: Natural Sciences).

Anatomy and Physiology II

BIOL225 4.00 credits

Anatomy and Physiology I is an introduction to the structure and function of the human body under normal and abnormal conditions. It is the first in a two course series. It will cover tissues, the integumentary, skeletal and muscular systems, articulations, nervous tissue, spinal cord and nerves, brain and cranial nerves, anatomy of the heart, blood vessels and circulation and the lymphatic structures. It will also cover cellular biology, cellular transport, cell reproduction and basic review of biochemistry as it relates to the human body. This course contains a laboratory component which includes dissection. For Biology majors, please see BIOL 220 Anatomy and BIOL 230 Physiology. (Prerequisites: CHEM 108 or high school chemistry within the past 3 years, must have a score of 76 or higher on the Elementary Algebra portion of the Accuplacer test or completion of MATH 0075 and MATH 0085 with a grade of C or higher AND a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ0090 with a grade of C or higher) (MNTC 3: Natural Sciences)

Human Physiology**BIOL230 4.00 credits**

This course provides an in-depth study of the functioning of most body systems, including muscle, nervous, cardiovascular, respiratory, digestive, urinary, and endocrine systems at both the cellular and systemic level. An emphasis is placed on normal physiology, but dysfunction will also be discussed. This course contains a laboratory component. (Prerequisites: Successful completion of BIOL 220 with a grade of C or better AND successful completion of CHEM 108 or CHEM 120 with a grade of C or better) (MNTC 3: Natural Sciences)

Microbiology**BIOL270 4.00 credits**

This course is an introduction to the general principles and methods used in the study of microorganisms. It includes a survey of prokaryotic and eukaryotic microorganisms emphasizing bacteria and viruses. Topics include microbial cell structure and function, metabolism, microbial genetics, and the role of microorganisms in disease, immunity, and other selected applied areas. Laboratory techniques include isolating, culturing, and identifying microorganisms. (Prerequisites: CHEM 108 or CHEM 120 or BIOL 225) (MNTC 3: Natural Sciences)

Introduction to Chemistry**CHEM108 4.00 credits**

A one-semester introduction to the field of chemistry, this course is designed to allow the student to understand how chemistry relates to everyday life and to learn some of the language and concepts of chemistry related to applied health. This course uses a math-based approach. (Prerequisite: Must have a score of 75.5 or higher in the Elementary Algebra portion of the Accuplacer test or completion of MATH 0085

BIOL235 4.00 credits

Anatomy and Physiology II is an introduction to the structure and function of the human body under normal and abnormal conditions. It is the second in a two course series. It will cover the autonomic, endocrine, immune, respiratory, digestive urinary and reproductive systems. It will also cover fluid electrolyte, acid-base balance, blood, blood pressure regulation and functional characteristics of the heart, special senses, development and inheritance. This course also has a lab component in which students will perform hands on activities to reinforce some of the material taught in lecture. For Biology majors, please see BIOL 220 Anatomy and BIOL 230 Physiology. (Prerequisite: Completion of BIOL 225 with a grade of C or higher) (MNTC 3: Natural Sciences)

Pathophysiology**BIOL240 3.00 credits**

This course provides an in-depth study of the chemical, biological and psychological process involved with alterations of health, using systemic and non-systemic approaches. Besides the two hour lecture, this course meets one additional hour to work on case studies. (Prerequisite: BIOL 230 or 235) (MNTC 3: Natural Sciences)

The Chemistry of Everything**CHEM101 3.00 credits**

A chemistry course for non-science major which explores the world from a chemical perspective. This course is designed to increase students' scientific literacy. A two-hour lab is included. (Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher) (MNTC 2, 3: Critical Thinking, Natural Sciences)

Principles of Chemistry I**CHEM120 5.00 credits**

This course introduces the student to the basic principles of chemistry, including atomic and molecular structure, bonding, chemical reactions, solution chemistry, stoichiometry, thermochemistry, periodicity, and states of matter. Laboratory reinforces lecture concepts. (Prerequisite: MATH 120, CHEM 108 or high school chemistry) (MNTC 3: Natural Sciences)

with a grade of C or higher.) (MNTC 3: Natural Sciences)

Organic Chemistry I

CHEM220 5.00 credits

Organic Chemistry I is the first course in a two semester sequence which covers the structure, stereochemistry, physical properties, reactivity, reaction mechanisms and synthesis of carbon-containing compounds. Emphasis on alkanes, alkenes, alkynes, alcohols, alkyl halides, aldehydes, ketones, and carboxylic acids and their derivatives. Laboratory experiments will integrate green methods into common synthetic techniques and the preparation and reactions of functional groups. (Prerequisite: CHEM 121)

Principles of Chemistry II

CHEM121 5.00 credits

Principles of Chemistry II is the second in a series of Chemistry courses designed for students who plan to major in a scientific or health related field. Topics include kinetics, chemical equilibria, acids and bases, buffers, precipitation reactions, thermodynamics, and electrochemistry. Lab topics reinforce lecture concepts. (Prerequisite: CHEM 120) (MNTC 3: Natural Sciences)

Introductory Physics

PHYS101 3.00 credits

A one semester course covering the basic principles of physics at a conceptual level and with a minimal amount of math. Topics generally included mechanics, simple machines, atomic structure, heat, light, and sound. Lecture and laboratory. (Prerequisites: Must have a score of 56 or higher on the Arithmetic portion of the Accuplacer test or completion of MATH 0075 with a grade of C or higher) (MNTC 3: Natural Sciences)

Principles in Physics II

PHYS212 4.00 credits

This second course will provide students with the principles of algebra based physics. The course will cover basic principles of waves, electricity and magnetism, light and optics, and topics in modern physics. (Prerequisite: PHYS 211) (MNTC 3:

Introduction to Ecology

BIOL101 4.00 credits

Introduction to Ecology introduces the student to fundamental principles of ecology while focusing on interactions occurring at all of its levels. Students will become familiar with interrelationships between biotic and abiotic components of the natural world, investigate population, community, and ecosystem structures and dynamics, and gain knowledge of human impact on the environment. Lecture and a 3 hour lab are included. (Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher) (MNTC 3, 10: Natural Sciences, People and the Environment)

Introduction to Physical Geography

GEOG101 3.00 credits

This course is an introduction to physical geography that systematically examines the spatial patterns and interrelationships among physical elements at the earth's surface. Students will study the earth's physical environment, its systems, and the physical processes that drive them through study of weather, climate, natural vegetation, soil, and landforms. However, these topics are not just discussed independently since the course concentrates on understanding the integration of these areas of the natural world. Geography focuses on human activities, and so the course will highlight some of the basic interactions between human activity and the natural environment. Current issues will be discussed and a scientific foundation provided for understanding global warming and other critical environmental issues. (Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0090 with a grade of C or higher)(MNTC 3, 10: Natural Sciences, People & the Environment)

Principles in Physics I

PHYS211 4.00 credits

This is the first half of a one-year sequence in physics. It covers the general background in algebra-based physics. Topics include classical mechanics, fluid mechanics, wave and sound, thermal physics. Lecture and laboratory. (Prerequisites: MATH 120 and 125, or MATH 130) (MNTC: 3, Natural Sciences)

General Physics I

PHYS221 4.00 credits

This course will provide students with the principles of calculus based physics. The course has been designed for students who plan advanced study of science and/or engineering. The course will cover basic principles of mechanics including

kinematics, statics, equilibrium and dynamics of particles, work and energy, rotational motion, gravitation, and oscillation. (Prerequisites: High School Physics, PHYS 101 or 211, MATH 131 with a grade of "C" or better or by instructor permission) (MNTC: 3, Natural Sciences)

General Physics II

PHYS222 4.00 credits

This second course will provide students with the principles of calculus based physics. The course has been designed for students who plan advanced study of science and/or engineering. The course will cover basic principles of waves in light and sound; temperature, heat, and the First Law of Thermodynamics; electric charge; electric fields; Gauss' Law; electric potential; capacitance; resistance; electrical circuits; magnetic fields; induction; electromagnetic oscillations; and Maxwell's Equations. (Prerequisites: PHYS 221 with a grade of "C" or better, MATH 132 with a grade of "C" or better or by instructor permission) (MNTC: 3, Natural Sciences)

Introduction to Cell Biology

BIOL106 3.00 credits

This is an introductory cell biology course dealing with: the cell structure and organelles; basic chemistry and biochemical molecules; cell transport and energy concepts; cellular respiration; cell reproduction; patterns of inheritance; structure and function of DNA; how genes are controlled; DNA technology. (Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ0080 and READ0090 with a grade of C or higher) (MNTC 3: Natural Sciences)

Biology of Disease

BIOL110 3.00 credits

This course is a survey of human disease including physiological and infectious diseases. Possible topics include infectious diseases, cancer, heart disease, disorders of the immune system, diabetes, etc. Prevention of disease through control of risk factors and early detection will be covered. Diagnosis and treatment will also be addressed. (Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ0080 and READ0090 with a grade of C or higher) (MNTC 3: Natural Sciences)

General Biology II

BIOL116 4.00 credits

This course covers biology at the organismal population and

Nutrition and Healthy Living

FCS 105 3.00 credits

This course provides an overview of basic principles of nutrition. Topics include contemporary issues such as food labeling, dieting practices, eating disorders, fitness, malnutrition, and nutrition throughout the life cycle. This course also focuses on the knowledge and skills necessary for the development and enhancement of a healthy lifestyle throughout the life span. (Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher)

Elements of Geography

GEOG100 3.00 credits

The course will answer the question "What is Geography?" Therefore, this course provides students with an introduction to the basic themes of geography. The scope and nature of geographic inquiry is used to explore topics about the physical and human characteristics of the Earth's surface. Special emphasis is placed on the significance of humans, environment, and cultural processes in the organization of space on the earth's surface. Natural and cultural landscapes are very important components of this course and students will examine physiographic regions, climates, demography, and urban areas. Also, different environmental issues will be discussed. (Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0090 with a grade of C or higher) (MNTC 5, 8: History/Social & Behavioral Sciences, Global Perspective)

General Biology I

BIOL115 4.00 credits

This course covers biological processes at the cellular and molecular level. It serves as an introduction to macromolecules and metabolism, cell biology, Mendelian genetics, gene expression and development. This course involves a weekly three hour lab. (Prerequisites: Score of 86 or above on the Sentence Skills portion of the Accuplacer test or completion of ENGL 0090 with a grade of C or higher and a score of 50 or above on the College Level Math portion of the Accuplacer test or complete of MATH 0085 with a grade of C or higher) (MNTC 3: Natural Sciences)

Tropical Rain Forest Ecology

BIOL152 4.00 credits

Tropical Rain Forest Ecology introduces students to

system level. It will emphasize organismal diversity, population and community ecology and ecosystems. Students will gain an understanding of how evolutionary advances have occurred among organisms within a kingdom due to natural selection. This course involves a weekly three hour lab. (Prerequisites: Score of 86 or above on the Sentence Skills portion of the Accuplacer test or completion of ENGL 0090 with a grade of C or higher and a score of 50 or above on the College Level Math portion of the Accuplacer test or complete of MATH 0085 with a grade of C or higher) (MNTC 3: Natural Sciences)

Human Biology

BIOL162 4.00 credits

This one-semester course is an introduction to the biology of the human body. Basic form and function of the body systems and their interactions will be emphasized. This knowledge will be applied to the analysis of current health and social issues. Other topics include: terminology, basic chemistry, cell biology, genetics, molecular biology and nutrition as it relates to the human body. This course contains a laboratory portion. (Prerequisites: Must have a score of 50 or higher on the College Level Math portion of the Accuplacer test or completion of MATH 0075 and MATH 0085 with a grade of C or higher AND must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ0090 with a grade of C or higher. It is strongly recommended that the student has taken a high school biology course.) (MNTC 3: Natural Sciences)

U.S. History I

HIST120 4.00 credits

This course surveys the history of America from the contributions of the indigenous Indian people through the Colonial Era (17th and 18th centuries) to the American Revolution and Early Republic (18th and 19th centuries). It examines how historical American culture, institutions, and events influence the present United States in the latter part of the twentieth century. (Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher) (MNTC 5, 7: History & Social & Behavioral Sciences, Human Diversity)

World History I

HIST160 4.00 credits

This course is a survey of world history examining ancient, classical, and medieval civilizations prior to the emergence of the West as a world power (c. 3500 BCE - 1450 CE). The course explores how environmental, economic, political, social, religious and other intellectual and cultural factors combined in different ways to influence the development of major world regions - Africa, EurAsia, and the Americas. The goal is for students to understand how fundamental institutions and cultural norms of different world regions developed out of their own internal environments as well as in response to

fundamental ecological concepts, processes and dynamics within the tropical rain forest biome. Discussions of flora and fauna will be framed within the context of evolution with an emphasis on adaptations. A special focus will be made on the rain forests and culture of Costa Rica and the Galapagos Islands. This course includes a one-week study abroad to Costa Rica or the Galapagos Islands. (Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher) (MNTC 3,10: Natural Sciences, People and the Environment)

Introduction to Anthropology

ANTH100 4.00 credits

Introduction to Anthropology is a survey course investigating the biological and cultural nature of humans and their past. The course examines our evolutionary beginning and the role culture plays among humans. Examined also is the methods anthropologists use to study the discipline. (Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0090 with a grade of C or higher) (MNTC 5,8: History & Social & Behavioral Sciences, Global Perspective)

U. S. History II

HIST121 4.00 credits

This course surveys the history of America from the Civil War and Reconstruction, through the New South and the New West, Industrialization, Populism and Progressivism, World War I, the Great Depression and the New Deal, World War II, Cold War America, the 1960's, Vietnam and Beyond. It examines how historical American culture, institutions, and events influence the present United States in the latter part of the twentieth century. (Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher) (MNTC 5, 7: History/Social & Behavioral Sciences, Human Diversity)

World History II: The Rise of the West

HIST161 4.00 credits

The history of world civilizations from 1500 C.E. through World War I, the rise of Europe, the age of revolutions, colonization and resistance to colonization, industrialization and its effects on people living in both imperialist and colonized societies and the connection between industrialization and imperialism as causes of World War I. (Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher) (MNTC 5, 8: History & Social & Behavioral Sciences, Global Perspective)

developments and influences from other cultural systems and historical forces. (Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher) (MNTC 5, 8: History & Social and Behavioral Sciences, Global Perspective)

World History III: The Twentieth Century

HIST162 4.00 credits

This course will present a history of world civilizations from 1900 to the present. Course topics will include the rise of national liberation movements beginning with the Boxer Rebellion of 1900, decolonization, total war, holocausts, globalization, the rise and fall of the Soviet Union, the Cold War, terrorism, fundamentalism and the rise of the United States as the only superpower at the end of the 20th century. (Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher) (MNTC 5, 8: History & Social & Behavioral Sciences, Global Perspective)

American Government

POL 110 3.00 credits

American Government introduces students to the fundamentals of American National Government. The course includes an examination of basic American political principles and practices, the Constitution, major institutions, and civil liberties. The objective of this course is to acquaint students with the complexities of the American political system. (Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher) (MNTC 5, 9: History/Social & Behavioral Science, Ethical and Civic Responsibility)

Lifespan Psychology

PSYC110 3.00 credits

This is an introductory course examining human development across the lifespan, with emphasis on normal physical, cognitive, and social development. (Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher) (MNTC 5, 7: History/Social & Behavioral Sciences, Human Diversity)

Four Cultures

ANTH121 4.00 credits

Special Topics in History:

HIST205 1 - 4 credits

Any HIST class has been specially designed by an SCC History instructor to appeal to SCC students. The instructor has chosen the subject material related to his/her interests, students' interests, or his/her teaching expertise. (Prerequisites: Any HIST course or instructor permission) (MNTC 5, 8: History & the Social & Behavioral Sciences, Global Perspective)

Introduction to Psychology

PSYC100 4.00 credits

This course will introduce the broad spectrum of theories and applications that make up the field of psychology. Psychology is the scientific study of behavior and mental processes, and how they are affected by physical and mental states, and external environments and social forces. (Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher) (MNTC 5: History/Social & Behavioral Sciences)

Psychology of Positive Adjustment

PSYC140 4.00 credits

The Psychology of Positive Adjustment introduces students to the scientific literature on positive adjustment to modern life. We will examine the questions: What is well-being and happiness? Who achieves it? Why does it elude some people? Which practices foster well-being and happiness? We will draw from the research in social psychology, neuroscience, personality psychology, cognitive psychology and sociocultural psychology. The course will incorporate the concepts of ethical living, values clarification, and civic responsibility as part of the mature development of psychological well-being. (Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher) (MNTC 5, 9: History/Social & Behavioral Sciences, Ethical & Civic Responsibility)

Social Psychology

PSYC210 4.00 credits

This course will take an in-depth look into four different cultures. We will look at cultures from Band, Tribe, Chiefdom and State levels of political-social organization. The theoretical focus of anthropological thought in the class will be include; functionalism, structuralism, configurationism, neo-evolutionism and cultural materialism. (Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0090 with a grade of C or higher) (MNTC 5, 7: History & Social & Behavioral Sciences, Human Diversity)

Health Psychology

PSYC220 4.00 credits

Health psychology is a subfield of psychology that addresses the mental, emotional, behavioral, and societal factors that influence the onset, duration, recovery, and prevention of illness and the promotion of wellness. Students will explore the theoretical foundations of health psychology and the role of psychological research and principles relevant to the field. Students will be exposed to a variety of topics including stress and coping, preventative behaviors and attitudes, treatment options, and management of pain and illness. Students will gain an understanding of the academic issues and a respect for the human experience related to health, illness, and disease. (Prerequisites: PSYC 100 Introduction to Psychology or any other college-level psychology course. Must have a score of 77.5 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher) (MNTC 5: History/Social & Behavioral Sciences)

Industrial Organizational Psychology

PSYC250 4.00 credits

Industrial-organizational (I/O) psychology is the scientific study of the workplace. Students will be introduced to a variety of issues of relevance to business and industry, including selection and placement of employees, the importance of training and development, organizational development and evaluation, employee motivation and productivity, and the importance of fostering work-life balance. Diversity among organizations and cultures in how they approach these issues will be emphasized. (Prerequisites: PSYC 100 or consent of instructor) (MNTC 5, 7: History/Social & Behavioral Sciences, Human Diversity)

Family Personal Relations

SOC 100 3.00 credits

Human relationships play a significant role in the development of individuals and their success. Students will become familiar with current research and theories which impact this development by learning about values, goals, decision making, roles, communication, work and family, parenting, divorce, remarriage, and diversity; giving a realistic picture of families today with an emphasis of what the family can become. (Prerequisites: Must have a score of 78 or higher on

Social Psychology introduces the broad spectrum of theories and applications that make up the field of social psychology. Social Psychology is the scientific study of human interactions and includes issues of aggression, attraction, self, benevolence, attitude development and change, prejudice, etc. (Prerequisites: PSYC 100 or any other college-level psychology course)(MNTC 5, 8: History/Social & Behavioral Sciences, Global Perspective)

Child and Adolescent Psychology

PSYC240 4.00 credits

This course examines the development of children from conception through adolescence. The major areas of focus include physical, cognitive, language, moral, and social development. The developing child will be understood as an active participant in a world of biological, familial, social, and cultural influences that help shape his or her individual life path. (Prerequisites: PSYC 100 or consent of instructor) (MNTC 5, 7: History/Social & Behavioral Sciences, Human Diversity)

Special Topics in Psychology:

PSYC280 4.00 credits

This course is designed to provide students with a deeper understanding of a special topic within the field of psychology. Key theoretical and historical underpinnings will be presented to prepare a foundation of understanding. Attention will be focused on how the topic has or may add to the knowledge base of psychology and, if applicable, other academic disciplines. Students will explore the actual or potential applicability of the topic to self, others, and society at large. The course will have a research component. Course may address one of Goal Areas 7-10 depending on the topic. (Prerequisites: PSYC 100 or consent of instructor) (MNTC 5: History/Social & Behavioral Sciences)

Introduction to Sociology

SOC 101 3.00 credits

The world is a far more diverse place than you might think! This course is a broad survey of sociology and its practical uses for all of us. In this course, students are introduced to a variety of topics, emphasizing breadth rather than depth. After learning about the basic theories and methods of sociology, students will cover topics such as race, gender, education, religion, social class, work, family, the environment, government and politics, organizations and bureaucracy, and

the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher) (MNTC 5: History/Social & Behavioral Science)

Social Problems

SOC 110 3.00 credits

This course is a survey of the sociology of a selected set of social problems in the U.S. and globally, e.g. crime and violence, poverty, unemployment, war and terrorism, environmental degradation, and population growth. The social-structural and cultural sources of these problems are critically analyzed, and structural and cultural solutions following from such analyses are examined. (Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher) (MNTC 5, 7: History/Social & Behavioral Science, Human Diversity)

Special Topics in Sociology:

SOC 205 3.00 credits

Special Topics in Sociology is a course that is used to cover a specific sociological area that is not otherwise covered by the other sociology courses offered. This course will explore the basic principles, theories, methodologies, and contemporary research and issues of the topic indicated in the course title on the registration page. Students should expect this course to be a survey of topics in the given sociological sub-discipline. (Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher) (MNTC 5, 9: History/Social & Behavioral Science, Ethical & Civic Responsibility)

Juvenile Delinquency

SOC 206 3.00 credits

This course will provide a survey of sociological perspectives on juvenile delinquency. Juvenile delinquency has only existed as a distinct subdiscipline of criminology for about 100 years. The change in ideas reflects the unique challenges in dealing with delinquents: children commit different kinds of crimes in different ways, their motivations differ from adults, and the effective correction of these behaviors is distinct and separate from adult corrections. This course will survey sociological perspectives of these issues, how delinquents develop, how to identify delinquents and target them for interventions, as well as various "best practices" when it comes to dealing with delinquents. (Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher)

other topics. Students will learn about the nature of all of these areas and their effects on individuals and their broader implications for society. In the end, students will leave with a far greater understanding of how society is organized and what that means for where we have been, where we are, and where we are going as a people. (Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher) (MNTC 5, 8: History/Social & Behavioral Sciences, Global Perspective)

Marriage and Family

SOC 201 3.00 credits

The Sociology of Marriage and Family will help students understand this dynamic institution as an important variable in our contemporary society. Students will be exposed to the various sociological perspectives, methods of study, and core concepts related to the institution of Marriage and Family. Simultaneously, students will also learn how the diverse institution of Marriage and Family continues to affect and inform the society at the local, national and global level. (Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher) (MNTC 5, 7: History/Social & Behavioral Science, Human Diversity)

Principles of Macroeconomics

ECON110 3.00 credits

A study of aggregate economic behavior and current economic issues, policies and problems. Macroeconomics measures such as inflation, employment, and the growth of output are examined along with the tools a government can use to foster a stable economy. (Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher) (MNTC 5, 8: History/Social & Behavioral Science, Global Perspective)

Social Stratification - Who Gets What and Why?

SOC 210 3.00 credits

This course examines the central question of "who gets what and why?" in the contemporary world. In answering this question, the course focuses on the social arrangements of social stratification and inequality and their effects on society and individual lives. It critically examines the historical, theoretical, and empirical foundations, manifestations, and maintenance of social class difference, power and conflict. The course primarily examines the United States, but, because the U.S. is not isolated from world affairs, including global economic affairs, it will necessarily also tend to more global concerns. While cultivating a critical understanding of the nature of social stratification and inequalities, the course will explore alternatives and possibilities for a more equitable and humane society with both individual and structural levels

(MNTC 5, 9: History/Social & Behavioral Science, Ethical & Civic Responsibility)

Criminology and Criminal Behavior

SOC 251 3.00 credits

This course is designed to develop an understanding of criminally deviant behavior and how it is studied within the discipline of sociology. Students will study criminological theories, theories of causation of crime, as well as the current "trends" in crime coupled with an exhaustive profile of criminals engaging in a given area of crime. Topics of study include the pathology of murder and violent crime, rape, burglary, larceny, white collar crimes such as embezzlement, corporate crime, cybercrime, organized crime, street gangs, and other areas. Public policy implications and considerations from the local to national levels will be examined.

(Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher) (MNTC 5, 9: History/Social & Behavioral Science, Ethical & Civic Responsibility)

Nutrition and Healthy Living

FCS 105 3.00 credits

This course provides an overview of basic principles of nutrition. Topics include contemporary issues such as food labeling, dieting practices, eating disorders, fitness, malnutrition, and nutrition throughout the life cycle. This course also focuses on the knowledge and skills necessary for the development and enhancement of a healthy lifestyle throughout the life span. (Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher)

American Racial Minorities

ETHN101 3.00 credits

This course will introduce students to the importance and the understanding of the nature of race relations in the United States of America. Students will use the various sociological perspectives as a lens to examine the social construction of race, ethnicity and the evolving nature of race and ethnic relations in the U.S. (Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher) (MNTC 5, 9: History/Social & Behavioral Sciences, Ethical & Civic Responsibility)

of analysis. (Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher) (MNTC 5, 8: History/Social & Behavioral Science, Global Perspective)

Drugs and Society

SOC 259 3.00 credits

This course focuses on drug use and abuse as a social rather than as a medical or psychopathological phenomenon. Specifically, the course deals with the history of drug use and regulatory attempts in the United States and around the world; the relationship between drug use and race/social class; pharmacology and use patterns related to specific drugs; perspectives on the causes of drug abuse; AIDS prevention and harm reduction interventions; drug-using subcultures; drug policy, drug dealing and street gangs, drug legislation, and drug enforcement; and the promotion and condemnation of drug activities in the mass media. Each week, students can expect to discuss one of these issues and also view an episode of a program from the popular media used as a basis for discussion. (Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher) (MNTC 5, 9: History/Social & Behavioral Science, Ethical & Civic Responsibility)

Principles of Microeconomics

ECON120 3.00 credits

This course examines theories of how various types of product, service, and resource markets operate and the resulting implications for public policy. Topics include decision-making by consumers, business firms, and government as well as price determination, resource allocation, and income determination via markets. (Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher) (MNTC 5, 8: History/Social & Behavioral Sciences, Global Perspective).

The Immigrant Experience

ETHN110 3.00 credits

This course is devoted to understanding controversial issues around immigration to the U.S. The United States is an immigrant country. No other land can challenge America's claim as the ultimate melting pot, although we can argue about whether or not we have really "melted together" to form a cohesive society. Immigrants play a significant role in enriching American culture and fueling economic growth. Yet at the same time, they are also regarded as an "unsettling force" and a burden on the taxpayers. As the numbers of legal as well as illegal, immigrants have climbed precipitously since the 1970s and 1980s, we have seen a backlash against immigration. Immigrants have always been a part of the American scene, but in some periods, more people have come than in others. Currently, immigration is a hot topic as many immigrants are coming from countries such as Somalia, Laos

and Mexico. This course will explore questions such as: What is an "American"?; Where do "Americans" come from?; What kinds of immigration issues will affect the future of the United States?; What relevance does immigration have to my life? (Prerequisite: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher) (MNTC 5, 9: History/Social & Behavioral Sciences, Ethical & Civic Responsibility)

Elements of Geography

GEOG100 3.00 credits

The course will answer the question "What is Geography?" Therefore, this course provides students with an introduction to the basic themes of geography. The scope and nature of geographic inquiry is used to explore topics about the physical and human characteristics of the Earth's surface. Special emphasis is placed on the significance of humans, environment, and cultural processes in the organization of space on the earth's surface. Natural and cultural landscapes are very important components of this course and students will examine physiographic regions, climates, demography, and urban areas. Also, different environmental issues will be discussed. (Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0090 with a grade of C or higher) (MNTC 5, 8: History/Social & Behavioral Sciences, Global Perspective)

Introduction to Cultural Geography

GEOG103 3.00 credits

This course is an introduction to cultural geography through the study of global patterns of many aspects of human culture, including population, migration, folk and popular culture, language, religion, ethnicity, political geography, development, agriculture, industry, services, urban patterns, and resource issues. Students will examine all of these and several other issues during the semester. Students will stress the variation in the cultural landscape and critically analyze several current problems facing modern society, such as overpopulation and differences between societies. Cultural geography is focused on those things that are human-created. Therefore, the basic theme addressed throughout the course will be to discover where and why human activities are located where they are found. Students will participate in the discussions and will exchange ideas that will help them to better understand the diversity of the cultural landscape and the similarities and differences between different social groups. (MNTC 5, 8: History & the Social & Behavioral Sciences, Global Perspective) (Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0090 with a grade of C or higher)

Special Topics in Geography:

GEOG200 3.00 credits

Students will explore a region to learn its unique characteristics and how its physical geography and human geography are closely linked within that region. The focus will be on real-world and hands-on activities that will use an inquiry-driven approach to learning. When applicable, geographic tools, such as GIS (Geographic Information Systems), remote sensing, and map skills, will be presented. The course will have a research component. (Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher) (MNTC 5: History & Social & Behavioral Sciences)

College Algebra

MATH120 4.00 credits

This course is mainly concerned with functions, most of which are algebraic. It begins with a general treatment of equations and inequalities and then proceeds to cover linear functions, quadratic functions, other polynomial and rational functions, piecewise functions, equations involving radicals and absolute values, logarithms and exponentials, systems of equations and inequalities, permutations and combinations. (Prerequisites: Two years of high school algebra or completion of MATH 0085 with a grade of C or higher, or a score of 75.5 on the Elementary Algebra portion of the Accuplacer test AND a score of 49.5 or higher on the College Level Math portion of the Accuplacer test) (MNTC 4: Mathematical/Logical Reasoning)

Trigonometry

MATH125 3.00 credits

A study of the six trigonometric functions, their inverses and their applications forms the heart of this course. First, the two common methods of angle measure are derived along with the related notions of length of arc and area of a sector. Then the trigonometric functions are defined in terms of the unit circle

Pre-Calculus

MATH130 4.00 credits

This is an accelerated course covering many topics from both College Algebra and Trigonometry. These include functions, graphs of functions, analytic geometry of the conic sections, systems of equations and inequalities, elementary matrix operations and determinants, properties and applications of

and their properties such as domain, range, period and amplitude are explored, along with their associated graphs. This leads to a study of identities and conditional equations. Triangle trigonometry and real-world applications follow, with an investigation of associated themes such as vectors, exponentials and logarithms. (Prerequisites: MATH 120 with a grade of C or better) (MNTC 4: Mathematical/Logical Reasoning)

Calculus I

MATH131 4.00 credits

This course introduces the key concepts of the derivative and the integral. Beginning with the definition of limit, the notion of continuity is developed which is perhaps the most important thread running throughout the calculus. This leads naturally to the process of differentiation and then integration, concluding with the all important Fundamental Theorem of the Calculus. Along the way, applications to classical and modern science, economics, the social sciences and other fields are explored. (Prerequisites: MATH 120 and MATH 125, or MATH 130 with a grade of C or better, and a score of 86 or higher on the College Level Mathematics portion of the Accuplacer test) (MNTC 4: Mathematical/Logical Reasoning)

Elementary Statistics

MATH154 4.00 credits

This course introduces the essential mathematical elements of statistics, applying them to a broad range of areas including business, manufacturing, economics, and the physical, biological and social sciences. Topics include descriptive measures of data, measures of central tendency, variability, standard probability distributions, tests of hypotheses, confidence intervals, and estimation. To put the treatment on a strong foundation, concepts of probability are developed throughout, and shown to form the unifying theme behind modern statistics. (Prerequisites: Two years of high school algebra, completion of MATH 0085 with a grade of C or higher or a score of 75.5 or higher on the Elementary Algebra portion of the Accuplacer test) (MNTC 4: Mathematical/Logical Reasoning)

Multivariable Calculus

MATH233 4.00 credits

Multivariable Calculus extends the notions of Calculus I and Calculus II to functions of more than one variable. Topics include such things as curves and surfaces in Euclidean n-space, partial derivatives, directional derivatives, tangent planes and differentials, double- and triple-integrals, the rectangular, cylindrical and spherical coordinate systems, line integrals, surface integrals, Green's theorem, Stokes' theorem and the divergence theorem. (Prerequisite: MATH 132 with a grade of C or higher) (MNTC 4: Mathematical/Logical Reasoning)

exponential, logarithmic and trigonometric functions, complex numbers, vectors, polar coordinates and elementary combinatorics. Should not be taken for credit in addition to either MATH 120 or MATH 125. (Prerequisites: Three years of high school mathematics including trigonometry, and a score of 49.5 or higher on the College Level Mathematics portion of the Accuplacer test) (MnTC 4: Mathematical/Logical Reasoning)

Calculus II

MATH132 4.00 credits

In this continuation of Calculus I, you will begin by investigating more applications of the definite integral, along with useful techniques for evaluating them. This leads in a natural way to a brief introduction to differential equations, and the evaluation of improper integrals and indeterminate forms. Next, the calculus of the transcendental functions is explored in some detail. Then the study of sequences and series is taken up, including power series and Taylor series. Important geometrical concepts such as polar coordinates, parametric equations and vectors in the plane and in space are also covered. (Prerequisites: MATH 131, with a grade of C or better) (MNTC 4: Mathematical/Logical Reasoning)

Ordinary Differential Equations

MATH231 4.00 credits

This is a traditional introductory course in ordinary differential equations for students pursuing careers in engineering, mathematics and the sciences; the focus is primarily on lower order equations. Topics include the solution of linear equations with constant coefficients, homogeneous and nonhomogeneous equations, assorted methods such as undetermined coefficients, variation of parameters and Laplace transforms. Also studied are existence and uniqueness theorems, numerical approximations, operator methods and various applications to physical phenomena. (Prerequisite: MATH 132 with a grade of C or higher) (MNTC 4: Mathematical/Logical Reasoning)

Elementary Linear Algebra

MATH240 4.00 credits

This is a first course in linear algebra for students intending to go into engineering, mathematics, the sciences, economics, statistics and other technical fields. Among the topics covered are matrices, determinants, systems of linear equations, vector spaces, linear transformations and characteristic value problems. Apart from the useful and practical topics considered, the course also serves as an introduction to the notion of mathematical proof. (Prerequisite: MATH 132 with a grade of C or higher) (MNTC 4: Mathematical/Logical Reasoning)

Administrative Assistant

A.A.S. Degree • 68 Credits

AAS 2235/AAS 3260



Degree Description

This program is designed to prepare students for employment as administrative assistants. Administrative assistants perform a variety of tasks, which may include the following: learn and use various computer applications, prepare and edit business documents, file, manage records, use electronic calendars, handle telephone calls, schedule meetings, make travel arrangements, greet visitors, and process mail. Other responsibilities may include the following: perform research, supervise or train others, record minutes at meetings, purchase equipment and supplies, and present data. After completion of this program, students will be proficient with oral and written communications, as well as decision-making and problem-solving skills.

Admission Dates: Fall and Spring Semester

Offered on the Faribault and North Mankato Campuses

The course requirements listed below are specific to the 2013-2014 school year. If you need to view the program from previous years view our [Catalog Archive](#).

This credential is part of the Office Administration and Technology department. [See the Office Administration and Technology department page for more details](#)

NOTE: Basic Entrance Requirement

Students must either currently have or attain the skills in OTEC 1001 Computer Software for College and OTEC 1790 Keyboarding for College before entry in the Office Administration and Technology programs.

Required Technical Courses (17 Courses)

Complete all of the following courses:

- [OTEC1800](#) Keyboarding I (3 Credits)
- [OTEC1820](#) Business English (3 Credits)
- [OTEC1825](#) Office Financial Applications I (3 Credits)
- [OTEC1840](#) Business Presentations (3 Credits)
- [OTEC1875](#) Word Processing Concepts & Applications: Core (3 Credits)
- [OTEC2800](#) Keyboarding II (3 Credits)
- [OTEC2810](#) Computer Technology (3 Credits)
- [OTEC2812](#) Office Procedures (3 Credits)
- [OTEC2815](#) Employment Portfolio (3 Credits)
- [OTEC2820](#) Business Communications (3 Credits)
- [OTEC2830](#) Microsoft Publisher (3 Credits)
- [OTEC2835](#) Office Financial Applications II (3 Credits)
- [OTEC2850](#) Integrated Information Systems (3 Credits)
- [OTEC2855](#) Internship (3 Credits)
- [OTEC2860](#) Office Management (3 Credits)
- [OTEC2870](#) Information Resource Management (3 Credits)
- [OTEC2875](#) Word Processing Concepts & Applications: Expert (3 Credits)

Required Liberal Arts and Sciences (2 Courses)

To complete an AAS Degree, students must complete 17 MNTC credits from 3 of the 10 MNTC Goal Areas.

Select two of the following courses:

[COMM140](#) Interpersonal Communication (3 Credits)

[PHIL100](#) Ethics in Society (3 Credits)

Or

[PHIL215](#) Business Ethics (3 Credits)

Elective Liberal Arts and Sciences

Select 11 additional MNTC credits in consultation with advisor/faculty.

Recommended courses are ENGL 100, COMM 110, MATH 115 or MATH 120 or MATH 130, ECON 110 or ECON 120, ART 110 or THTR 100, ENGL 110.

PLEASE NOTE: All program plans are preliminary and curriculum may change without notice. Your [catalog of record](#) may have different

Administrative Assistant - Associate of Applied Science Degree Course Descriptions**Keyboarding I****OTEC1800 3.00 credits**

This course reviews basic keyboarding techniques using the touch method. Emphasis is on building speed and accuracy on a computer keyboard. Basic formatting concepts for producing documents such as letters, envelopes, memos, tables, and reports will be introduced. Proofreading skills will be emphasized. (Minimum keyboarding speed of 35 words per minute)

Business English**OTEC1820 3.00 credits**

This course is designed to provide students with comprehensive, up-to-date instruction in the correct use of English grammar, sentence structure, punctuation, capitalization, abbreviations, and number usage in written business communications. Students will develop proficiency in proofreading, identifying common errors, and using reference materials to correct sentences, paragraphs, and business documents. (Prerequisite: None)

Office Financial Applications I**OTEC1825 3.00 credits**

This course introduces students to the concepts of basic bookkeeping features that build the foundation for analyzing transactions, applying the accounting equation, and creating financial statements. Students will also learn how to create and use spreadsheets with Microsoft Excel. Topics will include input and editing features, formulas and functions, formatting, creating charts and analyzing information in workbooks to organize and manage data. (Prerequisite: Basic Windows navigation skills)

Business Presentations**OTEC1840 3.00 credits**

This course is designed to teach students how to organize, analyze and present information in a professional setting. Students will learn the skills needed to build eye-catching presentations that communicate key information to audiences in business, academics, and organization settings. The learner will compose individual and composite presentations using text, graphs, sounds, and images. (Prerequisites: Basic Windows navigation skills required, applications software knowledge very helpful, speech course also helpful)

Word Processing Concepts & Applications: Core**OTEC1875 3.00 credits**

This course is designed to build an understanding of word processing using Microsoft Word software. It begins with the introduction of concepts such as file management, entering text, text editing, terminology, on-line help, spell checking, and printing. It continues with all the basic skills you will need to use the application at a core level of proficiency. (Prerequisites: None)

Keyboarding II**OTEC2800 3.00 credits**

This course covers the continuing development of keyboarding speed and accuracy. More advanced document formatting, such as letters, and tables with special features, templates, labels, mail merges, multi-page reports, columns, etc., may be included. Students will continue to develop proofreading skills as they format documents from straight copy, rough draft, handwritten copy, and arranged and unarranged sources. (Prerequisite: OTEC1800 or a minimum keyboarding speed of 45 words per minute accurately with advisor approval)

Computer Technology**OTEC2810 3.00 credits**

This course provides computer technical information that goes beyond the basics for college educated students. It covers not only hardware and software but the new, emerging technology trends that affect computing and everyday life. Topics such as

Office Procedures**OTEC2812 3.00 credits**

Topics covered in this course may include aspects of the changing office; managing work, time and resources; using office technology and equipment; processing mail; providing customer service; making travel arrangements; planning

networks, data security, personal privacy, online safety, digital rights, and Internet usage will be addressed. There will be an emphasis on social and ethical issues for thought-provoking course discussions. (Prerequisite: None)

Employment Portfolio

OTEC2815 3.00 credits

This course is a capstone course for the Office Administration and Technology Program and will focus on developing knowledge that will serve as a foundation for the student's employment search process by assisting them in the development of successful marketing strategies for employment by providing the information necessary about the skills, knowledge, attitudes, and interpersonal skills required to secure positions of choice and be contributing and productive employees. As a capstone course, students are given online assessments on the use of software, keyboarding skills, and business English to ensure competence prior to graduation. Students will develop two distinctive portfolios to assist in their career search. Students will create a notebook portfolio consisting of their employment marketing strategy documents including different types of resumes, letters of application, interview strategies, interview follow up, as well as samples of their coursework presented professionally in a three-ring binder. The second portfolio will be designed as a digital portfolio. Students will develop through their creativity and use of technology a digital portfolio that will showcase their level of mastery in Office Administration and Technology. Students will use digital cameras, scanners, audio files, label software, presentation software, word processing software, page layout software, and the Internet among other areas of technology. (Prerequisites: OTEC 1825, 1840, 2810, 2820, 2870, 2875)

Microsoft Publisher

OTEC2830 3.00 credits

Students will integrate word processing, graphics, and manipulate text graphics to produce professional quality publications. The topics covered are most useful to the student who has prior word processing experience and who needs to understand page compositions and typography for the purpose of preparing documents with flair. The course introduces the concepts, terminology, techniques, and applications of desktop publishing. Design concepts are limited to those useful in business applications and are not intended to present a "graphics/commercial art" focus. The emphasis will be on developing proficiency, preparing applications-based projects, and mastery of the software. (Prerequisites: None)

Integrated Information Systems

OTEC2850 3.00 credits

This course is an intensive course that provides project-based learning with a business scenario setting utilizing critical thinking skills. The projects emphasize the integration of various computer applications to create professional documents. Students will incorporate time management,

meetings and conferences; using telecommunications; professional development and leadership, personal finance and investment strategies; and using Outlook for email, scheduling, contacts, tasks, and notes. (Prerequisite: OTEC 1875)

Business Communications

OTEC2820 3.00 credits

This course covers the principles of effective writing and requires students to plan, compose, and format a variety of business communications. Emphasis is on proofreading, editing, and revising communications not just to make them correct but also to make them better. Types of communications may include letters, memos, e-mail, announcements, instructions, form letters, and news releases. Specific letter or memo types may include request and response, claim and adjustment, persuasive, and goodwill communications. Students will learn about letter and envelope formats, international communication differences, and organizational approaches for writing correspondence. Students will learn about words to avoid, transitions, parallel structure, and the you attitude. Students will also be introduced to library and Internet research techniques and will analyze real-world documents. (Prerequisite: OTEC1820)

Office Financial Applications II

OTEC2835 3.00 credits

This course utilizes and builds upon the basic bookkeeping concepts introduced in Office Financial Applications I. Students will journalize/post transactions, complete a worksheet, perform end-of-month activities including adjusting and closing journal entries, financial statements, and reconciling a bank statement, and calculate and account for employee earnings. Students will learn how to complete tasks both manually and electronically using an automated accounting program. (Prerequisites: Basic Windows navigation skills; OTEC 1825 Office Financial Applications I)

Internship

OTEC2855 3.00 credits

This course is designed to provide the student with a purposeful occupational experience in the Office Administration and Technology field. The internship is an individualized experience. A plan is created for each student in conjunction with the training site to provide experience related

electronic communication, Internet searches and current technology practices to be successful in an office work setting. (Prerequisites: OTEC 1800, 1825, 1840, 2870, 2875)

Office Management

OTEC2860 3.00 credits

This course covers the managerial and organizational processes of Administrative Office Management; office environmental management, which include office layout, office environment, and office equipment and furniture; office employee management, which includes selecting, developing, supervising, and motivating office employees as well as performance appraisal, job analysis, job evaluation, salary administration, and work measurement and productivity; office systems analysis; and office functions management. (Prerequisites: OTEC 1840, 1875, 2820)

Word Processing Concepts & Applications: Expert

OTEC2875 3.00 credits

This course is for Office Technology majors and is a continuation of OTEC1875 - Word Processing Concepts & Applications: Core. In this course the student will learn expert concepts and the advanced features of Microsoft Word such as macros, merging, and creating tables; and effective file management and maintenance. Accurate proofreading is emphasized. (Prerequisites: OTEC 1875)

Ethics in Society

PHIL100 3.00 credits

This course studies the foundations for moral beliefs, judgments, and values and the part they play in practical ethical judgments. In its application, the course deals with contemporary issues and explores specific issues of personal morality as well as business and social ethics. (Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher) (MNTC 6, 9: Humanities & Fine Arts, Ethical & Civil Responsibility)

to the skills and knowledge acquired in the program. This plan is based on the college's and the program's core competencies. (Prerequisite: OTEC 2850)

Information Resource Management

OTEC2870 3.00 credits

This course covers rules and procedures for coding, indexing, filing, and retrieving documents in alphabetical, numeric, geographic, and subject systems. Applications include simulated correspondence filing and card filing using both manual and electronic methods. Students will learn how to use database management software (Microsoft Access) to manage information. Records management topics emphasize records control and retention, final disposition of records, and records management issues and trends. (Prerequisites: None)

Interpersonal Communication

COMM140 3.00 credits

In this class, participants will examine key components of interpersonal communication theory, identify the interpersonal communication skills necessary for healthy relationships, assess their own interpersonal communication effectiveness, and practice and hone interpersonal communication skills necessary for healthy home and work relationships. This course will also address relevant issues of social interaction, including how human diversity/culture (age, race, gender, etc.) affects our interpersonal communication. (Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher)(MNTC 1: Communication)

Business Ethics

PHIL215 3.00 credits

The intent of this course is to show that the world of business traffics in the world of ethics. Business is not a neutral domain where one may do as one pleases. For instance, there is the question of what sorts of obligations businesses have toward their employees. Do businesses have a positive moral duty to promote social goods? Do they have a primary obligation or do their moral responsibilities comprise a set of different and equally important obligations? We will examine several views of the moral relation between businesses and others including the stockholder theory and the stakeholder theory. The goals of this course are to become acquainted with the architecture of morality, master the various moral theories and their unique implications for business, and to gain facility sliding between talk of each and applying each in various business contexts. We will examine various moral theories like utilitarianism and deontological type theories and then examine them in the context of applied business ethical issues. We will also look at broader issues about the nature of a just society and just economy in which the business is to function. (Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher) (MNTC 2, 9: Critical Thinking, Ethical & Civil Responsibility)

Legal Administrative Assistant

A.A.S. Degree • 67 Credits

AAS 2249/AAS 3223



Degree Description

Legal administrative assistants perform the administrative tasks in a law office such as answering the telephone, managing the electronic and paper files, transcribing, preparing law office correspondence and legal documents, maintaining the calendar, personal contact with attorneys, courthouse personnel, law office personnel, and others. In addition, the legal administrative assistant drafts documents, gathers information relevant to the client's case, has personal and phone contact with the client, and does minimal legal research. Overall, the legal administrative assistant manages the procedural tasks for clients in the law office with an attorney's supervision. All courses in this program are offered online. Some courses are hybrid meaning that there is some live student/teacher contact. All class sessions are recorded for those who can't attend live. The difference between a legal administrative assistant degree and a legal administrative assistant diploma is that the degree has 16 credits of Liberal Arts and Sciences.

Admission Dates: Fall and Spring Semester

Offered on the Faribault and North Mankato Campuses

The course requirements listed below are specific to the 2013-2014 school year. If you need to view the program from previous years view our [Catalog Archive](#).

This credential is part of the Office Administration and Technology department. [See the Office Administration and Technology department page for more details](#)

NOTE: Basic Entrance Requirement

Students must either currently have or attain the skills in OTEC 1001 Computer Software for College and OTEC 1790 Keyboarding for College before entry in the Office Administration and Technology programs.

Required Technical Courses (17 Courses)

Complete all of the following courses:

- [OTEC1725](#) Transactional Law (3 Credits)
- [OTEC1730](#) Civil Procedures (3 Credits)
- [OTEC1800](#) Keyboarding I (3 Credits)
- [OTEC1820](#) Business English (3 Credits)
- [OTEC1825](#) Office Financial Applications I (3 Credits)
- [OTEC1840](#) Business Presentations (3 Credits)
- [OTEC1875](#) Word Processing Concepts & Applications: Core (3 Credits)
- [OTEC2735](#) Family and Criminal Law (3 Credits)
- [OTEC2740](#) Legal Editing and Proofreading (3 Credits)
- [OTEC2800](#) Keyboarding II (3 Credits)
- [OTEC2810](#) Computer Technology (3 Credits)
- [OTEC2812](#) Office Procedures (3 Credits)
- [OTEC2815](#) Employment Portfolio (3 Credits)
- [OTEC2820](#) Business Communications (3 Credits)
- [OTEC2850](#) Integrated Information Systems (3 Credits)
- [OTEC2870](#) Information Resource Management (3 Credits)
- [OTEC2875](#) Word Processing Concepts & Applications: Expert (3 Credits)

Required Liberal Arts and Sciences (2 Courses)

To complete an AAS Degree, students must complete 16 MNTC credits from 3 of the 10 MNTC Goal Areas.

Select the following courses:

[COMM140](#) Interpersonal Communication (3 Credits)

Elective Liberal Arts and Sciences

Select 10 additional MNTC credits in MNTC Goals 1 - 10 in consultation with advisor/faculty.

Recommended courses are ENGL 100, PHIL 215, COMM 110, MATH 115 or MATH 120 or MATH130, ECON 110 or ECON 120,

PLEASE NOTE: All program plans are preliminary and curriculum may change without notice. Your [catalog of record](#) may have different requirements.

Legal Administrative Assistant - Associate of Applied Science Degree Course Descriptions**Transactional Law****OTEC1725 3.00 credits**

This course will include an in-depth discussion and hands on experience in creation of documents for Minnesota real estate, probate, and corporate Law. Students will create documents and proofread for accuracy. Emphasis will be on Minnesota Law. (Prerequisites: Students must type at least 35 words per minute and have a working knowledge of Microsoft Word)

Civil Procedures**OTEC1730 3.00 credits**

This course will include an in depth discussion and hands on experience in creation of documents for the Minnesota and federal court systems, civil litigation and appeal procedures. Students will create documents and proofread for accuracy. This course will emphasize Minnesota procedures. (Prerequisites: Students must type at least 45 words per minute and have a working knowledge of Microsoft Word)

Keyboarding I**OTEC1800 3.00 credits**

This course reviews basic keyboarding techniques using the touch method. Emphasis is on building speed and accuracy on a computer keyboard. Basic formatting concepts for producing documents such as letters, envelopes, memos, tables, and reports will be introduced. Proofreading skills will be emphasized. (Minimum keyboarding speed of 35 words per minute)

Business English**OTEC1820 3.00 credits**

This course is designed to provide students with comprehensive, up-to-date instruction in the correct use of English grammar, sentence structure, punctuation, capitalization, abbreviations, and number usage in written business communications. Students will develop proficiency in proofreading, identifying common errors, and using reference materials to correct sentences, paragraphs, and business documents. (Prerequisite: None)

Office Financial Applications I**OTEC1825 3.00 credits**

This course introduces students to the concepts of basic bookkeeping features that build the foundation for analyzing transactions, applying the accounting equation, and creating financial statements. Students will also learn how to create and use spreadsheets with Microsoft Excel. Topics will include input and editing features, formulas and functions, formatting, creating charts and analyzing information in workbooks to organize and manage data. (Prerequisite: Basic Windows navigation skills)

Business Presentations**OTEC1840 3.00 credits**

This course is designed to teach students how to organize, analyze and present information in a professional setting. Students will learn the skills needed to build eye-catching presentations that communicate key information to audiences in business, academics, and organization settings. The learner will compose individual and composite presentations using text, graphs, sounds, and images. (Prerequisites: Basic Windows navigation skills required, applications software knowledge very helpful, speech course also helpful)

Word Processing Concepts & Applications: Core**OTEC1875 3.00 credits**

This course is designed to build an understanding of word processing using Microsoft Word software. It begins with the introduction of concepts such as file management, entering text, text editing, terminology, on-line help, spell checking, and printing. It continues with all the basic skills you will need to use the application at a core level of proficiency.

Family and Criminal Law**OTEC2735 3.00 credits**

This course will include an in depth discussion and hands on experience in creation of documents for the Minnesota family law and criminal procedures. Students will create documents using word processing and proofread for accuracy. Minnesota procedures will be emphasized. (Prerequisites: OTEC 1730)

(Prerequisites: None)

Legal Editing and Proofreading

OTEC2740 3.00 credits

This course covers transcription of dictated material into a variety of usable legal documents using word processing equipment/software. Emphasis will be on forms and materials, editing, proofreading, and correcting errors. (Prerequisites: OTEC 2735)

Computer Technology

OTEC2810 3.00 credits

This course provides computer technical information that goes beyond the basics for college educated students. It covers not only hardware and software but the new, emerging technology trends that affect computing and everyday life. Topics such as networks, data security, personal privacy, online safety, digital rights, and Internet usage will be addressed. There will be an emphasis on social and ethical issues for thought-provoking course discussions. (Prerequisite: None)

Employment Portfolio

OTEC2815 3.00 credits

This course is a capstone course for the Office Administration and Technology Program and will focus on developing knowledge that will serve as a foundation for the student's employment search process by assisting them in the development of successful marketing strategies for employment by providing the information necessary about the skills, knowledge, attitudes, and interpersonal skills required to secure positions of choice and be contributing and productive employees. As a capstone course, students are given online assessments on the use of software, keyboarding skills, and business English to ensure competence prior to graduation. Students will develop two distinctive portfolios to assist in their career search. Students will create a notebook portfolio consisting of their employment marketing strategy documents including different types of resumes, letters of application, interview strategies, interview follow up, as well as samples of their coursework presented professionally in a three-ring binder. The second portfolio will be designed as a digital portfolio. Students will develop through their creativity and use of technology a digital portfolio that will showcase their level of mastery in Office Administration and Technology. Students will use digital cameras, scanners, audio files, label software, presentation software, word processing software, page layout software, and the Internet among other areas of technology. (Prerequisites: OTEC 1825, 1840, 2810, 2820, 2870, 2875)

Integrated Information Systems

Keyboarding II

OTEC2800 3.00 credits

This course covers the continuing development of keyboarding speed and accuracy. More advanced document formatting, such as letters, and tables with special features, templates, labels, mail merges, multi-page reports, columns, etc., may be included. Students will continue to develop proofreading skills as they format documents from straight copy, rough draft, handwritten copy, and arranged and unarranged sources. (Prerequisite: OTEC1800 or a minimum keyboarding speed of 45 words per minute accurately with advisor approval)

Office Procedures

OTEC2812 3.00 credits

Topics covered in this course may include aspects of the changing office; managing work, time and resources; using office technology and equipment; processing mail; providing customer service; making travel arrangements; planning meetings and conferences; using telecommunications; professional development and leadership, personal finance and investment strategies; and using Outlook for email, scheduling, contacts, tasks, and notes. (Prerequisite: OTEC 1875)

Business Communications

OTEC2820 3.00 credits

This course covers the principles of effective writing and requires students to plan, compose, and format a variety of business communications. Emphasis is on proofreading, editing, and revising communications not just to make them correct but also to make them better. Types of communications may include letters, memos, e-mail, announcements, instructions, form letters, and news releases. Specific letter or memo types may include request and response, claim and adjustment, persuasive, and goodwill communications. Students will learn about letter and envelope formats, international communication differences, and organizational approaches for writing correspondence. Students will learn about words to avoid, transitions, parallel structure, and the you attitude. Students will also be introduced to library and Internet research techniques and will analyze real-world documents. (Prerequisite: OTEC1820)

Information Resource Management

OTEC2850 3.00 credits

This course is an intensive course that provides project-based learning with a business scenario setting utilizing critical thinking skills. The projects emphasize the integration of various computer applications to create professional documents. Students will incorporate time management, electronic communication, Internet searches and current technology practices to be successful in an office work setting. (Prerequisites: OTEC 1800, 1825, 1840, 2870, 2875)

Word Processing Concepts & Applications: Expert**OTEC2875 3.00 credits**

This course is for Office Technology majors and is a continuation of OTEC1875 - Word Processing Concepts & Applications: Core. In this course the student will learn expert concepts and the advanced features of Microsoft Word such as macros, merging, and creating tables; and effective file management and maintenance. Accurate proofreading is emphasized. (Prerequisites: OTEC 1875)

Ethics in Society**PHIL100 3.00 credits**

This course studies the foundations for moral beliefs, judgments, and values and the part they play in practical ethical judgments. In its application, the course deals with contemporary issues and explores specific issues of personal morality as well as business and social ethics. (Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher) (MNTC 6, 9: Humanities & Fine Arts, Ethical & Civil Responsibility)

OTEC2870 3.00 credits

This course covers rules and procedures for coding, indexing, filing, and retrieving documents in alphabetical, numeric, geographic, and subject systems. Applications include simulated correspondence filing and card filing using both manual and electronic methods. Students will learn how to use database management software (Microsoft Access) to manage information. Records management topics emphasize records control and retention, final disposition of records, and records management issues and trends. (Prerequisites: None)

Interpersonal Communication**COMM140 3.00 credits**

In this class, participants will examine key components of interpersonal communication theory, identify the interpersonal communication skills necessary for healthy relationships, assess their own interpersonal communication effectiveness, and practice and hone interpersonal communication skills necessary for healthy home and work relationships. This course will also address relevant issues of social interaction, including how human diversity/culture (age, race, gender, etc.) affects our interpersonal communication. (Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher)(MNTC 1: Communication)

Office Systems Specialist

A.A.S. Degree • 60 Credits

AAS 2238/AAS 3224



Degree Description

This program is designed to prepare the students for employment with a focus toward information processing from the support perspective. Applied skills are developed in computer software usage, electronic mail, network and media management, applications support, systems administration tasks, computer maintenance, Internet, and emerging software technologies.

Admission Dates: Fall and Spring Semester

Offered on the Faribault and North Mankato Campuses

The course requirements listed below are specific to the 2013-2014 school year. If you need to view the program from previous years view our [Catalog Archive](#).

This credential is part of the Office Administration and Technology department. [See the Office Administration and Technology department page for more details](#)

Note: Keyboarding Prerequisite Requirement

Students must either currently have or attain the skills in OTEC1001 Computer Software for College and OTEC1790 Keyboarding for College before entry in the Office Administration and Technology Programs.

Required Technical Courses (14 Courses)

Complete all of the following courses:

- [COMP1140](#) Web Development (4 Credits)
- [COMP1200](#) PC Hardware and Software Essentials (4 Credits)
- [COMP1360](#) Introduction to Data Communications and Networking (4 Credits)
- [COMP2130](#) Advanced Spreadsheets/Database & Programming (4 Credits)
- [OTEC1820](#) Business English (3 Credits)
- [OTEC1825](#) Office Financial Applications I (3 Credits)
- [OTEC1840](#) Business Presentations (3 Credits)
- [OTEC1875](#) Word Processing Concepts & Applications: Core (3 Credits)
- [OTEC2810](#) Computer Technology (3 Credits)
- [OTEC2815](#) Employment Portfolio (3 Credits)
- [OTEC2820](#) Business Communications (3 Credits)
- [OTEC2860](#) Office Management (3 Credits)
- [OTEC2870](#) Information Resource Management (3 Credits)
- [OTEC2875](#) Word Processing Concepts & Applications: Expert (3 Credits)

Required Liberal Arts and Sciences (3 Courses)

To complete an AAS Degree, students must complete 16 MNTC credits from 3 of the 10 MNTC Goal Areas. Courses must be approved by advisor/faculty.

Select the following courses:

- [COMM140](#) Interpersonal Communication (3 Credits)
- [COMM110](#) Public Speaking (3 Credits)
- [PHIL100](#) Ethics in Society (3 Credits)

Elective Liberal Arts and Sciences

Courses must be approved by Advisor/Faculty. Recommended courses are ENGL100, COMM100, MATH115, MATH120, MATH130, ECON110, ECON120, ART110, THTR100, ENGL110.

PLEASE NOTE: All program plans are preliminary and curriculum may change without notice. Your [catalog of record](#) may have different requirements.

Office Systems Specialist - Associate of Applied Science Degree Course Descriptions**Web Development****COMP1140 4.00 credits**

This course focuses on using XHTML to create attractive web presentations. Students will use basic XHTML page markup, good graphical design, planning a web presence, hyperlinks, FTP, using color and images, CSS, tables, multimedia, forms, and an introduction to JavaScript. Minimum typing speed of 20 wpm (35 wpm recommended) (Prerequisites: None)

PC Hardware and Software Essentials**COMP1200 4.00 credits**

PC Hardware and Software, presents an in-depth exposure to computer hardware and operating systems. Students learn the functionality of hardware and software components as well as suggested best practices in maintenance, and safety issues. Through hands on activities and labs, students learn how to assemble and configure a computer, install operating systems and software, and troubleshoot hardware and software problems. In addition, an introduction to networking is included. This course helps students prepare for CompTIA's A+ certification. (Prerequisites: None)

Introduction to Data Communications and Networking**COMP1360 4.00 credits**

This course serves as a general introduction for students seeking to acquire a foundation in current network technologies for local area networks (LANs), wide area networks (WANs), and the Internet. The course provides an introduction to the hardware, software, terminology, components, design, and connections of a network. Network concepts such as the OSI model, topologies, and major protocols, as well as the basic functions of system administration and operation are also included. The course is operating system independent and provides an introduction to several popular network operating systems. (Prerequisite: COMP 1200 or instructor approval)

Advanced Spreadsheets/Database & Programming**COMP2130 4.00 credits**

This course covers advanced topics and VBA within the Microsoft Office suite (primarily database and spreadsheet applications). The students will solve business scenarios using advanced features of Access and Excel and the Visual Basic for Applications (VBA) macro language. In addition, the students will integrate data between these applications. Students will work on individual and team projects. (Prerequisite: COMP 1125)

Business English**OTEC1820 3.00 credits**

This course is designed to provide students with comprehensive, up-to-date instruction in the correct use of English grammar, sentence structure, punctuation, capitalization, abbreviations, and number usage in written business communications. Students will develop proficiency in proofreading, identifying common errors, and using reference materials to correct sentences, paragraphs, and business documents. (Prerequisite: None)

Office Financial Applications I**OTEC1825 3.00 credits**

This course introduces students to the concepts of basic bookkeeping features that build the foundation for analyzing transactions, applying the accounting equation, and creating financial statements. Students will also learn how to create and use spreadsheets with Microsoft Excel. Topics will include input and editing features, formulas and functions, formatting, creating charts and analyzing information in workbooks to organize and manage data. (Prerequisite: Basic Windows navigation skills)

Business Presentations**OTEC1840 3.00 credits****Word Processing Concepts & Applications: Core****OTEC1875 3.00 credits**

This course is designed to teach students how to organize, analyze and present information in a professional setting. Students will learn the skills needed to build eye-catching presentations that communicate key information to audiences in business, academics, and organization settings. The learner will compose individual and composite presentations using text, graphs, sounds, and images. (Prerequisites: Basic Windows navigation skills required, applications software knowledge very helpful, speech course also helpful)

Computer Technology

OTEC2810 3.00 credits

This course provides computer technical information that goes beyond the basics for college educated students. It covers not only hardware and software but the new, emerging technology trends that affect computing and everyday life. Topics such as networks, data security, personal privacy, online safety, digital rights, and Internet usage will be addressed. There will be an emphasis on social and ethical issues for thought-provoking course discussions. (Prerequisite: None)

This course is designed to build an understanding of word processing using Microsoft Word software. It begins with the introduction of concepts such as file management, entering text, text editing, terminology, on-line help, spell checking, and printing. It continues with all the basic skills you will need to use the application at a core level of proficiency. (Prerequisites: None)

Employment Portfolio

OTEC2815 3.00 credits

This course is a capstone course for the Office Administration and Technology Program and will focus on developing knowledge that will serve as a foundation for the student's employment search process by assisting them in the development of successful marketing strategies for employment by providing the information necessary about the skills, knowledge, attitudes, and interpersonal skills required to secure positions of choice and be contributing and productive employees. As a capstone course, students are given online assessments on the use of software, keyboarding skills, and business English to ensure competence prior to graduation. Students will develop two distinctive portfolios to assist in their career search. Students will create a notebook portfolio consisting of their employment marketing strategy documents including different types of resumes, letters of application, interview strategies, interview follow up, as well as samples of their coursework presented professionally in a three-ring binder. The second portfolio will be designed as a digital portfolio. Students will develop through their creativity and use of technology a digital portfolio that will showcase their level of mastery in Office Administration and Technology. Students will use digital cameras, scanners, audio files, label software, presentation software, word processing software, page layout software, and the Internet among other areas of technology. (Prerequisites: OTEC 1825, 1840, 2810, 2820, 2870, 2875)

Business Communications

OTEC2820 3.00 credits

This course covers the principles of effective writing and requires students to plan, compose, and format a variety of business communications. Emphasis is on proofreading, editing, and revising communications not just to make them correct but also to make them better. Types of communications may include letters, memos, e-mail, announcements, instructions, form letters, and news releases. Specific letter or memo types may include request and response, claim and adjustment, persuasive, and goodwill communications. Students will learn about letter and envelope formats, international communication differences, and organizational approaches for writing correspondence. Students will learn about words to avoid, transitions, parallel structure, and the you attitude. Students will also be introduced to library and Internet research techniques and will analyze real-world documents. (Prerequisite: OTEC1820)

Office Management

OTEC2860 3.00 credits

This course covers the managerial and organizational processes of Administrative Office Management; office environmental management, which include office layout, office environment, and office equipment and furniture; office employee management, which includes selecting, developing, supervising, and motivating office employees as well as performance appraisal, job analysis, job evaluation, salary administration, and work measurement and productivity; office systems analysis; and office functions management. (Prerequisites: OTEC 1840, 1875, 2820)

Information Resource Management

Word Processing Concepts & Applications: Expert

OTEC2870 3.00 credits

This course covers rules and procedures for coding, indexing, filing, and retrieving documents in alphabetical, numeric, geographic, and subject systems. Applications include simulated correspondence filing and card filing using both manual and electronic methods. Students will learn how to use database management software (Microsoft Access) to manage information. Records management topics emphasize records control and retention, final disposition of records, and records management issues and trends. (Prerequisites: None)

Interpersonal Communication**COMM140 3.00 credits**

In this class, participants will examine key components of interpersonal communication theory, identify the interpersonal communication skills necessary for healthy relationships, assess their own interpersonal communication effectiveness, and practice and hone interpersonal communication skills necessary for healthy home and work relationships. This course will also address relevant issues of social interaction, including how human diversity/culture (age, race, gender, etc.) affects our interpersonal communication. (Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher)(MNTC 1: Communication)

Ethics in Society**PHIL100 3.00 credits**

This course studies the foundations for moral beliefs, judgments, and values and the part they play in practical ethical judgments. In its application, the course deals with contemporary issues and explores specific issues of personal morality as well as business and social ethics.(Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher) (MNTC 2, 9: Critical Thinking, Ethical & Civil Responsibility)

OTEC2875 3.00 credits

This course is for Office Technology majors and is a continuation of OTEC1875 - Word Processing Concepts & Applications: Core. In this course the student will learn expert concepts and the advanced features of Microsoft Word such as macros, merging, and creating tables; and effective file management and maintenance. Accurate proofreading is emphasized. (Prerequisites: OTEC 1875)

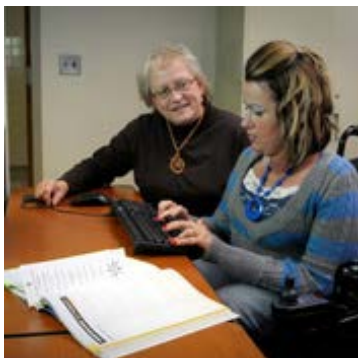
Public Speaking**COMM110 3.00 credits**

This course develops or improves effective performance in acquiring, evaluating, organizing, and communicating information. Learners develop and apply critical and creative thinking to structuring arguments, making presentations, using multimedia, and supporting each other in impromptu and extemporaneous speaking. Course de-emphasizes competition and stresses personal and workplace effectiveness in communication skills. (Prerequisites: Must have a score of 86 or higher on the Sentence Skills portion of the Accuplacer test or completion of ENGL 0080 and ENGL 0090 with a grade of C or higher) (MNTC 1: Communication)

Administrative Assistant

Diploma • 54 Credits

DIP 2234/DIP 3240



Degree Description

This program is designed to prepare students for employment as administrative assistants. Administrative assistants perform a variety of tasks, which may include the following: learn and use various computer applications, prepare and edit business documents, file, manage records, use electronic calendars, handle telephone calls, schedule meetings, make travel arrangements, greet visitors, and process mail. After completion of this program, students will be proficient with oral and written communications, as well as decision-making and problem-solving skills.

Admission Dates: Fall and Spring Semester

Offered on the Faribault and North Mankato Campuses

The course requirements listed below are specific to the 2013-2014 school year. If you need to view the program from previous years view our [Catalog Archive](#).

This credential is part of the Office Administration and Technology department. [See the Office Administration and Technology department page for more details](#)

Note: Keyboarding Prerequisite Requirement

Students must either currently have or attain the skills in OTEC1001 Computer Software for College and OTEC1790 Keyboarding for College before entry in the Office Administration and Technology Programs.

Required Liberal Arts and Sciences (2 Courses)

Select the following courses:

[COMM140](#) Interpersonal Communication (3 Credits)

[PHIL100](#) Ethics in Society (3 Credits)

Or

[PHIL215](#) Business Ethics (3 Credits)

Required Technical Courses (16 Courses)

Select the following courses:

[OTEC1800](#) Keyboarding I (3 Credits)

[OTEC1820](#) Business English (3 Credits)

[OTEC1825](#) Office Financial Applications I (3 Credits)

[OTEC1840](#) Business Presentations (3 Credits)

[OTEC1875](#) Word Processing Concepts & Applications: Core (3 Credits)

[OTEC2800](#) Keyboarding II (3 Credits)

[OTEC2810](#) Computer Technology (3 Credits)

[OTEC2812](#) Office Procedures (3 Credits)

[OTEC2815](#) Employment Portfolio (3 Credits)

[OTEC2820](#) Business Communications (3 Credits)

[OTEC2830](#) Microsoft Publisher (3 Credits)

[OTEC2835](#) Office Financial Applications II (3 Credits)

[OTEC2850](#) Integrated Information Systems (3 Credits)

[OTEC2855](#) Internship (3 Credits)

[OTEC2870](#) Information Resource Management (3 Credits)

[OTEC2875](#) Word Processing Concepts & Applications: Expert (3 Credits)

PLEASE NOTE: All program plans are preliminary and curriculum may change without notice. Your [catalog of record](#) may have different requirements.

Administrative Assistant - Diploma of Occupational Proficiency Course Descriptions**Keyboarding I****OTEC1800 3.00 credits**

This course reviews basic keyboarding techniques using the touch method. Emphasis is on building speed and accuracy on a computer keyboard. Basic formatting concepts for producing documents such as letters, envelopes, memos, tables, and reports will be introduced. Proofreading skills will be emphasized. (Minimum keyboarding speed of 35 words per minute)

Business English**OTEC1820 3.00 credits**

This course is designed to provide students with comprehensive, up-to-date instruction in the correct use of English grammar, sentence structure, punctuation, capitalization, abbreviations, and number usage in written business communications. Students will develop proficiency in proofreading, identifying common errors, and using reference materials to correct sentences, paragraphs, and business documents. (Prerequisite: None)

Office Financial Applications I**OTEC1825 3.00 credits**

This course introduces students to the concepts of basic bookkeeping features that build the foundation for analyzing transactions, applying the accounting equation, and creating financial statements. Students will also learn how to create and use spreadsheets with Microsoft Excel. Topics will include input and editing features, formulas and functions, formatting, creating charts and analyzing information in workbooks to organize and manage data. (Prerequisite: Basic Windows navigation skills)

Business Presentations**OTEC1840 3.00 credits**

This course is designed to teach students how to organize, analyze and present information in a professional setting. Students will learn the skills needed to build eye-catching presentations that communicate key information to audiences in business, academics, and organization settings. The learner will compose individual and composite presentations using text, graphs, sounds, and images. (Prerequisites: Basic Windows navigation skills required, applications software knowledge very helpful, speech course also helpful)

Word Processing Concepts & Applications: Core**OTEC1875 3.00 credits**

This course is designed to build an understanding of word processing using Microsoft Word software. It begins with the introduction of concepts such as file management, entering text, text editing, terminology, on-line help, spell checking, and printing. It continues with all the basic skills you will need to use the application at a core level of proficiency. (Prerequisites: None)

Keyboarding II**OTEC2800 3.00 credits**

This course covers the continuing development of keyboarding speed and accuracy. More advanced document formatting, such as letters, and tables with special features, templates, labels, mail merges, multi-page reports, columns, etc., may be included. Students will continue to develop proofreading skills as they format documents from straight copy, rough draft, handwritten copy, and arranged and unarranged sources. (Prerequisite: OTEC1800 or a minimum keyboarding speed of 45 words per minute accurately with advisor approval)

Computer Technology**OTEC2810 3.00 credits**

This course provides computer technical information that goes beyond the basics for college educated students. It covers not only hardware and software but the new, emerging technology trends that affect computing and everyday life. Topics such as

Office Procedures**OTEC2812 3.00 credits**

Topics covered in this course may include aspects of the changing office; managing work, time and resources; using office technology and equipment; processing mail; providing customer service; making travel arrangements; planning

networks, data security, personal privacy, online safety, digital rights, and Internet usage will be addressed. There will be an emphasis on social and ethical issues for thought-provoking course discussions. (Prerequisite: None)

Employment Portfolio

OTEC2815 3.00 credits

This course is a capstone course for the Office Administration and Technology Program and will focus on developing knowledge that will serve as a foundation for the student's employment search process by assisting them in the development of successful marketing strategies for employment by providing the information necessary about the skills, knowledge, attitudes, and interpersonal skills required to secure positions of choice and be contributing and productive employees. As a capstone course, students are given online assessments on the use of software, keyboarding skills, and business English to ensure competence prior to graduation. Students will develop two distinctive portfolios to assist in their career search. Students will create a notebook portfolio consisting of their employment marketing strategy documents including different types of resumes, letters of application, interview strategies, interview follow up, as well as samples of their coursework presented professionally in a three-ring binder. The second portfolio will be designed as a digital portfolio. Students will develop through their creativity and use of technology a digital portfolio that will showcase their level of mastery in Office Administration and Technology. Students will use digital cameras, scanners, audio files, label software, presentation software, word processing software, page layout software, and the Internet among other areas of technology. (Prerequisites: OTEC 1825, 1840, 2810, 2820, 2870, 2875)

Microsoft Publisher

OTEC2830 3.00 credits

Students will integrate word processing, graphics, and manipulate text graphics to produce professional quality publications. The topics covered are most useful to the student who has prior word processing experience and who needs to understand page compositions and typography for the purpose of preparing documents with flair. The course introduces the concepts, terminology, techniques, and applications of desktop publishing. Design concepts are limited to those useful in business applications and are not intended to present a "graphics/commercial art" focus. The emphasis will be on developing proficiency, preparing applications-based projects, and mastery of the software. (Prerequisites: None)

Integrated Information Systems

OTEC2850 3.00 credits

This course is an intensive course that provides project-based learning with a business scenario setting utilizing critical thinking skills. The projects emphasize the integration of various computer applications to create professional documents. Students will incorporate time management,

meetings and conferences; using telecommunications; professional development and leadership, personal finance and investment strategies; and using Outlook for email, scheduling, contacts, tasks, and notes. (Prerequisite: OTEC 1875)

Business Communications

OTEC2820 3.00 credits

This course covers the principles of effective writing and requires students to plan, compose, and format a variety of business communications. Emphasis is on proofreading, editing, and revising communications not just to make them correct but also to make them better. Types of communications may include letters, memos, e-mail, announcements, instructions, form letters, and news releases. Specific letter or memo types may include request and response, claim and adjustment, persuasive, and goodwill communications. Students will learn about letter and envelope formats, international communication differences, and organizational approaches for writing correspondence. Students will learn about words to avoid, transitions, parallel structure, and the you attitude. Students will also be introduced to library and Internet research techniques and will analyze real-world documents. (Prerequisite: OTEC1820)

Office Financial Applications II

OTEC2835 3.00 credits

This course utilizes and builds upon the basic bookkeeping concepts introduced in Office Financial Applications I. Students will journalize/post transactions, complete a worksheet, perform end-of-month activities including adjusting and closing journal entries, financial statements, and reconciling a bank statement, and calculate and account for employee earnings. Students will learn how to complete tasks both manually and electronically using an automated accounting program. (Prerequisites: Basic Windows navigation skills; OTEC 1825 Office Financial Applications I)

Internship

OTEC2855 3.00 credits

This course is designed to provide the student with a purposeful occupational experience in the Office Administration and Technology field. The internship is an individualized experience. A plan is created for each student in conjunction with the training site to provide experience related

electronic communication, Internet searches and current technology practices to be successful in an office work setting. (Prerequisites: OTEC 1800, 1825, 1840, 2870, 2875)

Information Resource Management

OTEC2870 3.00 credits

This course covers rules and procedures for coding, indexing, filing, and retrieving documents in alphabetical, numeric, geographic, and subject systems. Applications include simulated correspondence filing and card filing using both manual and electronic methods. Students will learn how to use database management software (Microsoft Access) to manage information. Records management topics emphasize records control and retention, final disposition of records, and records management issues and trends. (Prerequisites: None)

Interpersonal Communication

COMM140 3.00 credits

In this class, participants will examine key components of interpersonal communication theory, identify the interpersonal communication skills necessary for healthy relationships, assess their own interpersonal communication effectiveness, and practice and hone interpersonal communication skills necessary for healthy home and work relationships. This course will also address relevant issues of social interaction, including how human diversity/culture (age, race, gender, etc.) affects our interpersonal communication. (Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher)(MNTC 1: Communication)

Business Ethics

PHIL215 3.00 credits

The intent of this course is to show that the world of business traffics in the world of ethics. Business is not a neutral domain where one may do as one pleases. For instance, there is the question of what sorts of obligations businesses have toward their employees. Do businesses have a positive moral duty to promote social goods? Do they have a primary obligation or do their moral responsibilities comprise a set of different and equally important obligations? We will examine several views of the moral relation between businesses and others including the stockholder theory and the stakeholder theory. The goals of this course are to become acquainted with the architecture of morality, master the various moral theories and their unique implications for business, and to gain facility sliding between talk of each and applying each in various business contexts. We will examine various moral theories like utilitarianism and deontological type theories and then examine them in the context of applied business ethical issues. We will also look at broader issues about the nature of a just society and just economy in which the business is to function. (Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher) (MNTC 2, 9: Critical Thinking, Ethical & Civil Responsibility)

to the skills and knowledge acquired in the program. This plan is based on the college's and the program's core competencies. (Prerequisite: OTEC 2850)

Word Processing Concepts & Applications: Expert

OTEC2875 3.00 credits

This course is for Office Technology majors and is a continuation of OTEC1875 - Word Processing Concepts & Applications: Core. In this course the student will learn expert concepts and the advanced features of Microsoft Word such as macros, merging, and creating tables; and effective file management and maintenance. Accurate proofreading is emphasized. (Prerequisites: OTEC 1875)

Ethics in Society

PHIL100 3.00 credits

This course studies the foundations for moral beliefs, judgments, and values and the part they play in practical ethical judgments. In its application, the course deals with contemporary issues and explores specific issues of personal morality as well as business and social ethics. (Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher) (MNTC 6, 9: Humanities & Fine Arts, Ethical & Civil Responsibility)

Legal Administrative Assistant

Diploma • 57 Credits

DIP 2250/DIP 3220



Degree Description

Legal administrative assistants perform the administrative tasks in a law office such as answering the telephone, managing the electronic and paper files, transcribing, preparing law office correspondence and legal documents, maintaining the calendar, personal contact with attorneys, courthouse personnel, law office personnel, and others. In addition, the legal administrative assistant drafts documents, gathers information relevant to the client's case, has personal and phone contact with the client, and does minimal legal research. Overall, the legal administrative assistant manages the procedural tasks for clients in the law office with an attorney's supervision. All courses in this program are offered online. Some courses are hybrid meaning that there is some live student/teacher contact. All class sessions are recorded for those who can't attend live. The difference between a legal administrative assistant degree and a legal administrative assistant diploma is that the degree has 16 credits of Liberal Arts & Sciences.

Admission Dates: Fall and Spring Semester

Offered on the Faribault and North Mankato Campuses

The course requirements listed below are specific to the 2013-2014 school year. If you need to view the program from previous years view our [Catalog Archive](#).

This credential is part of the Office Administration and Technology department. [See the Office Administration and Technology department page for more details](#)

Note: Keyboarding Prerequisite Requirement

Students must either currently have or attain the skills in OTEC1001 Computer Software for College and OTEC1790 Keyboarding for College before entry in the Office Administration and Technology Programs.

Required Technical Courses (17 Courses)

Complete all of the following courses:

- [OTEC1725](#) Transactional Law (3 Credits)
- [OTEC1730](#) Civil Procedures (3 Credits)
- [OTEC1800](#) Keyboarding I (3 Credits)
- [OTEC1820](#) Business English (3 Credits)
- [OTEC1825](#) Office Financial Applications I (3 Credits)
- [OTEC1840](#) Business Presentations (3 Credits)
- [OTEC1875](#) Word Processing Concepts & Applications: Core (3 Credits)
- [OTEC2735](#) Family and Criminal Law (3 Credits)
- [OTEC2740](#) Legal Editing and Proofreading (3 Credits)
- [OTEC2800](#) Keyboarding II (3 Credits)
- [OTEC2810](#) Computer Technology (3 Credits)
- [OTEC2812](#) Office Procedures (3 Credits)
- [OTEC2815](#) Employment Portfolio (3 Credits)
- [OTEC2820](#) Business Communications (3 Credits)
- [OTEC2850](#) Integrated Information Systems (3 Credits)
- [OTEC2870](#) Information Resource Management (3 Credits)
- [OTEC2875](#) Word Processing Concepts & Applications: Expert (3 Credits)

Required Liberal Arts and Sciences (6 Credits)

Select the following courses:

- [COMM140](#) Interpersonal Communication (3 Credits)
- [PHIL100](#) Ethics in Society (3 Credits)

PLEASE NOTE: All program plans are preliminary and curriculum may change without notice. Your [catalog of record](#) may have different requirements.

Legal Administrative Assistant - Diploma of Occupational Proficiency Course Descriptions**Transactional Law****OTEC1725 3.00 credits**

This course will include an in-depth discussion and hands on experience in creation of documents for Minnesota real estate, probate, and corporate Law. Students will create documents and proofread for accuracy. Emphasis will be on Minnesota Law. (Prerequisites: Students must type at least 35 words per minute and have a working knowledge of Microsoft Word)

Civil Procedures**OTEC1730 3.00 credits**

This course will include an in depth discussion and hands on experience in creation of documents for the Minnesota and federal court systems, civil litigation and appeal procedures. Students will create documents and proofread for accuracy. This course will emphasize Minnesota procedures. (Prerequisites: Students must type at least 45 words per minute and have a working knowledge of Microsoft Word)

Keyboarding I**OTEC1800 3.00 credits**

This course reviews basic keyboarding techniques using the touch method. Emphasis is on building speed and accuracy on a computer keyboard. Basic formatting concepts for producing documents such as letters, envelopes, memos, tables, and reports will be introduced. Proofreading skills will be emphasized. (Minimum keyboarding speed of 35 words per minute)

Business English**OTEC1820 3.00 credits**

This course is designed to provide students with comprehensive, up-to-date instruction in the correct use of English grammar, sentence structure, punctuation, capitalization, abbreviations, and number usage in written business communications. Students will develop proficiency in proofreading, identifying common errors, and using reference materials to correct sentences, paragraphs, and business documents. (Prerequisite: None)

Office Financial Applications I**OTEC1825 3.00 credits**

This course introduces students to the concepts of basic bookkeeping features that build the foundation for analyzing transactions, applying the accounting equation, and creating financial statements. Students will also learn how to create and use spreadsheets with Microsoft Excel. Topics will include input and editing features, formulas and functions, formatting, creating charts and analyzing information in workbooks to organize and manage data. (Prerequisite: Basic Windows navigation skills)

Business Presentations**OTEC1840 3.00 credits**

This course is designed to teach students how to organize, analyze and present information in a professional setting. Students will learn the skills needed to build eye-catching presentations that communicate key information to audiences in business, academics, and organization settings. The learner will compose individual and composite presentations using text, graphs, sounds, and images. (Prerequisites: Basic Windows navigation skills required, applications software knowledge very helpful, speech course also helpful)

Word Processing Concepts & Applications: Core**OTEC1875 3.00 credits**

This course is designed to build an understanding of word processing using Microsoft Word software. It begins with the introduction of concepts such as file management, entering text, text editing, terminology, on-line help, spell checking, and printing. It continues with all the basic skills you will need to use the application at a core level of proficiency.

Family and Criminal Law**OTEC2735 3.00 credits**

This course will include an in depth discussion and hands on experience in creation of documents for the Minnesota family law and criminal procedures. Students will create documents using word processing and proofread for accuracy. Minnesota procedures will be emphasized. (Prerequisites: OTEC 1730)

(Prerequisites: None)

Legal Editing and Proofreading

OTEC2740 3.00 credits

This course covers transcription of dictated material into a variety of usable legal documents using word processing equipment/software. Emphasis will be on forms and materials, editing, proofreading, and correcting errors. (Prerequisites: OTEC 2735)

Computer Technology

OTEC2810 3.00 credits

This course provides computer technical information that goes beyond the basics for college educated students. It covers not only hardware and software but the new, emerging technology trends that affect computing and everyday life. Topics such as networks, data security, personal privacy, online safety, digital rights, and Internet usage will be addressed. There will be an emphasis on social and ethical issues for thought-provoking course discussions. (Prerequisite: None)

Employment Portfolio

OTEC2815 3.00 credits

This course is a capstone course for the Office Administration and Technology Program and will focus on developing knowledge that will serve as a foundation for the student's employment search process by assisting them in the development of successful marketing strategies for employment by providing the information necessary about the skills, knowledge, attitudes, and interpersonal skills required to secure positions of choice and be contributing and productive employees. As a capstone course, students are given online assessments on the use of software, keyboarding skills, and business English to ensure competence prior to graduation. Students will develop two distinctive portfolios to assist in their career search. Students will create a notebook portfolio consisting of their employment marketing strategy documents including different types of resumes, letters of application, interview strategies, interview follow up, as well as samples of their coursework presented professionally in a three-ring binder. The second portfolio will be designed as a digital portfolio. Students will develop through their creativity and use of technology a digital portfolio that will showcase their level of mastery in Office Administration and Technology. Students will use digital cameras, scanners, audio files, label software, presentation software, word processing software, page layout software, and the Internet among other areas of technology. (Prerequisites: OTEC 1825, 1840, 2810, 2820, 2870, 2875)

Integrated Information Systems

Keyboarding II

OTEC2800 3.00 credits

This course covers the continuing development of keyboarding speed and accuracy. More advanced document formatting, such as letters, and tables with special features, templates, labels, mail merges, multi-page reports, columns, etc., may be included. Students will continue to develop proofreading skills as they format documents from straight copy, rough draft, handwritten copy, and arranged and unarranged sources. (Prerequisite: OTEC1800 or a minimum keyboarding speed of 45 words per minute accurately with advisor approval)

Office Procedures

OTEC2812 3.00 credits

Topics covered in this course may include aspects of the changing office; managing work, time and resources; using office technology and equipment; processing mail; providing customer service; making travel arrangements; planning meetings and conferences; using telecommunications; professional development and leadership, personal finance and investment strategies; and using Outlook for email, scheduling, contacts, tasks, and notes. (Prerequisite: OTEC 1875)

Business Communications

OTEC2820 3.00 credits

This course covers the principles of effective writing and requires students to plan, compose, and format a variety of business communications. Emphasis is on proofreading, editing, and revising communications not just to make them correct but also to make them better. Types of communications may include letters, memos, e-mail, announcements, instructions, form letters, and news releases. Specific letter or memo types may include request and response, claim and adjustment, persuasive, and goodwill communications. Students will learn about letter and envelope formats, international communication differences, and organizational approaches for writing correspondence. Students will learn about words to avoid, transitions, parallel structure, and the you attitude. Students will also be introduced to library and Internet research techniques and will analyze real-world documents. (Prerequisite: OTEC1820)

Information Resource Management

OTEC2850 3.00 credits

This course is an intensive course that provides project-based learning with a business scenario setting utilizing critical thinking skills. The projects emphasize the integration of various computer applications to create professional documents. Students will incorporate time management, electronic communication, Internet searches and current technology practices to be successful in an office work setting. (Prerequisites: OTEC 1800, 1825, 1840, 2870, 2875)

Word Processing Concepts & Applications: Expert**OTEC2875 3.00 credits**

This course is for Office Technology majors and is a continuation of OTEC1875 - Word Processing Concepts & Applications: Core. In this course the student will learn expert concepts and the advanced features of Microsoft Word such as macros, merging, and creating tables; and effective file management and maintenance. Accurate proofreading is emphasized. (Prerequisites: OTEC 1875)

Ethics in Society**PHIL100 3.00 credits**

This course studies the foundations for moral beliefs, judgments, and values and the part they play in practical ethical judgments. In its application, the course deals with contemporary issues and explores specific issues of personal morality as well as business and social ethics. (Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher) (MNTC 6, 9: Humanities & Fine Arts, Ethical & Civil Responsibility)

OTEC2870 3.00 credits

This course covers rules and procedures for coding, indexing, filing, and retrieving documents in alphabetical, numeric, geographic, and subject systems. Applications include simulated correspondence filing and card filing using both manual and electronic methods. Students will learn how to use database management software (Microsoft Access) to manage information. Records management topics emphasize records control and retention, final disposition of records, and records management issues and trends. (Prerequisites: None)

Interpersonal Communication**COMM140 3.00 credits**

In this class, participants will examine key components of interpersonal communication theory, identify the interpersonal communication skills necessary for healthy relationships, assess their own interpersonal communication effectiveness, and practice and hone interpersonal communication skills necessary for healthy home and work relationships. This course will also address relevant issues of social interaction, including how human diversity/culture (age, race, gender, etc.) affects our interpersonal communication. (Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher)(MNTC 1: Communication)

Business Software

Certificate • 16 Credits

CERT2283/CERT3283



Degree Description

The Business Software Certificate allows students to upgrade their technology and software skills. Students will learn the Microsoft Office applications including Word, Excel, and PowerPoint. Students may choose from a varied list of electives to tailor the certificate to their individual needs.

Admission Dates: Fall and Spring Semester

Offered on the Faribault and North Mankato Campuses

The course requirements listed below are specific to the 2013-2014 school year. If you need to view the program from previous years view our [Catalog Archive](#).

This credential is part of the Office Administration and Technology department. [See the Office](#)

[Administration and Technology department page for more details](#)

Required Technical Courses (5 Courses)

Complete the following courses:

- [OTEC1001](#) Computer Software for College (2 Credits)
- [OTEC1790](#) Keyboarding for College (2 Credits)
- [OTEC1825](#) Office Financial Applications I (3 Credits)
- [OTEC1840](#) Business Presentations (3 Credits)
- [OTEC1875](#) Word Processing Concepts & Applications: Core (3 Credits)

Technical Electives (3 Credits)

Select 3 credits from the following courses:

- [OTEC1800](#) Keyboarding I (3 Credits)
- [OTEC2810](#) Computer Technology (3 Credits)
- [OTEC2830](#) Microsoft Publisher (3 Credits)
- [OTEC2835](#) Office Financial Applications II (3 Credits)
- [OTEC2875](#) Word Processing Concepts & Applications: Expert (3 Credits)

PLEASE NOTE: All program plans are preliminary and curriculum may change without notice. Your [catalog of record](#) may have different requirements.

Business Software - Certificate of Training Course Descriptions**Computer Software for College****OTEC1001 2.00 credits**

This course covers basic information about computer hardware and software and the use of computer software as a business productivity tool. Students will be given introductory training on a Windows operating system and the common business applications of word processing, spreadsheets, database, and presentation graphics. This course is designed to equip the student with knowledge of hardware and software applications. This course will cover the business application software that will be used in more advanced courses.

(Prerequisites: Basic computer skills or Computer Basic class; mouse proficiency, keyboarding skill of 25 words per minute)

Keyboarding for College**OTEC1790 2.00 credits**

This course covers the development of basic keyboarding techniques using the touch-typing method of the computer. Emphasis will be on learning the touch-typing method of typing alphabetic, number and symbol keys. The keyboarding goal will be to attain a minimum rate of 35 words per minute with accuracy. (Prerequisites: None)

Office Financial Applications I**OTEC1825 3.00 credits**

This course introduces students to the concepts of basic bookkeeping features that build the foundation for analyzing transactions, applying the accounting equation, and creating financial statements. Students will also learn how to create and use spreadsheets with Microsoft Excel. Topics will include input and editing features, formulas and functions, formatting, creating charts and analyzing information in workbooks to organize and manage data. (Prerequisite: Basic Windows navigation skills)

Business Presentations**OTEC1840 3.00 credits**

This course is designed to teach students how to organize, analyze and present information in a professional setting. Students will learn the skills needed to build eye-catching presentations that communicate key information to audiences in business, academics, and organization settings. The learner will compose individual and composite presentations using text, graphs, sounds, and images. (Prerequisites: Basic Windows navigation skills required, applications software knowledge very helpful, speech course also helpful)

Word Processing Concepts & Applications: Core**OTEC1875 3.00 credits**

This course is designed to build an understanding of word processing using Microsoft Word software. It begins with the introduction of concepts such as file management, entering text, text editing, terminology, on-line help, spell checking, and printing. It continues with all the basic skills you will need to use the application at a core level of proficiency.

(Prerequisites: None)

Keyboarding I**OTEC1800 3.00 credits**

This course reviews basic keyboarding techniques using the touch method. Emphasis is on building speed and accuracy on a computer keyboard. Basic formatting concepts for producing documents such as letters, envelopes, memos, tables, and reports will be introduced. Proofreading skills will be emphasized. (Minimum keyboarding speed of 35 words per minute)

Computer Technology**OTEC2810 3.00 credits**

This course provides computer technical information that goes beyond the basics for college educated students. It covers not only hardware and software but the new, emerging technology

Microsoft Publisher**OTEC2830 3.00 credits**

Students will integrate word processing, graphics, and manipulate text graphics to produce professional quality publications. The topics covered are most useful to the student

trends that affect computing and everyday life. Topics such as networks, data security, personal privacy, online safety, digital rights, and Internet usage will be addressed. There will be an emphasis on social and ethical issues for thought-provoking course discussions. (Prerequisite: None)

who has prior word processing experience and who needs to understand page compositions and typography for the purpose of preparing documents with flair. The course introduces the concepts, terminology, techniques, and applications of desktop publishing. Design concepts are limited to those useful in business applications and are not intended to present a "graphics/commercial art" focus. The emphasis will be on developing proficiency, preparing applications-based projects, and mastery of the software. (Prerequisites: None)

Office Financial Applications II

OTEC2835 3.00 credits

This course utilizes and builds upon the basic bookkeeping concepts introduced in Office Financial Applications I. Students will journalize/post transactions, complete a worksheet, perform end-of-month activities including adjusting and closing journal entries, financial statements, and reconciling a bank statement, and calculate and account for employee earnings. Students will learn how to complete tasks both manually and electronically using an automated accounting program. (Prerequisites: Basic Windows navigation skills; OTEC 1825 Office Financial Applications I)

Word Processing Concepts & Applications: Expert

OTEC2875 3.00 credits

This course is for Office Technology majors and is a continuation of OTEC1875 - Word Processing Concepts & Applications: Core. In this course the student will learn expert concepts and the advanced features of Microsoft Word such as macros, merging, and creating tables; and effective file management and maintenance. Accurate proofreading is emphasized. (Prerequisites: OTEC 1875)

Client Relations Specialist

Certificate • 27 Credits

CERT2282/CERT3282



Degree Description

This program is designed to prepare students for employment as a client relations specialist. Because client relations specialists answer questions from external and internal customers about the organization, they need to develop strong interpersonal and communication skills. Client relations specialists may be asked to perform general office responsibilities as well as client relations tasks.

Admission Dates: Fall and Spring Semester

Offered on the Faribault and North Mankato Campuses

The course requirements listed below are specific to the 2013-2014 school year. If you need to view the program from previous years view our [Catalog Archive](#).

This credential is part of the Office Administration and Technology department. [See the Office Administration and Technology department page for more details](#)

Note: Keyboarding Prerequisite Requirement

Students must either currently have or attain the skills in OTEC1001 Computer Software for College and OTEC1790 Keyboarding for College before entry in the Office Administration and Technology programs.

Required Technical Courses (9 Courses)

Complete all of the following courses:

[MKT 1830](#) Customer Service (3 Credits)

[OTEC1800](#) Keyboarding I (3 Credits)

[OTEC1820](#) Business English (3 Credits)

[OTEC1825](#) Office Financial Applications I (3 Credits)

[OTEC1840](#) Business Presentations (3 Credits)

[OTEC1875](#) Word Processing Concepts & Applications: Core (3 Credits)

[OTEC2810](#) Computer Technology (3 Credits)

[OTEC2812](#) Office Procedures (3 Credits)

[OTEC2820](#) Business Communications (3 Credits)

PLEASE NOTE: All program plans are preliminary and curriculum may change without notice. Your [catalog of record](#) may have different requirements.

Client Relations Specialist - Certificate of Training Course Descriptions**Customer Service****MKT 1830 3.00 credits**

This course covers the importance of customer service and how the student can achieve quality customer service. Total Quality Management is an essential part of customer service and how quality service is relayed to the consumer. This course explains how to develop a service attitude, dealing with various types of customers, handling customer complaints, decision making and using the team concept.

Business English**OTEC1820 3.00 credits**

This course is designed to provide students with comprehensive, up-to-date instruction in the correct use of English grammar, sentence structure, punctuation, capitalization, abbreviations, and number usage in written business communications. Students will develop proficiency in proofreading, identifying common errors, and using reference materials to correct sentences, paragraphs, and business documents. (Prerequisite: None)

Business Presentations**OTEC1840 3.00 credits**

This course is designed to teach students how to organize, analyze and present information in a professional setting. Students will learn the skills needed to build eye-catching presentations that communicate key information to audiences in business, academics, and organization settings. The learner will compose individual and composite presentations using text, graphs, sounds, and images. (Prerequisites: Basic Windows navigation skills required, applications software knowledge very helpful, speech course also helpful)

Computer Technology**OTEC2810 3.00 credits**

This course provides computer technical information that goes beyond the basics for college educated students. It covers not only hardware and software but the new, emerging technology trends that affect computing and everyday life. Topics such as networks, data security, personal privacy, online safety, digital

Keyboarding I**OTEC1800 3.00 credits**

This course reviews basic keyboarding techniques using the touch method. Emphasis is on building speed and accuracy on a computer keyboard. Basic formatting concepts for producing documents such as letters, envelopes, memos, tables, and reports will be introduced. Proofreading skills will be emphasized. (Minimum keyboarding speed of 35 words per minute)

Office Financial Applications I**OTEC1825 3.00 credits**

This course introduces students to the concepts of basic bookkeeping features that build the foundation for analyzing transactions, applying the accounting equation, and creating financial statements. Students will also learn how to create and use spreadsheets with Microsoft Excel. Topics will include input and editing features, formulas and functions, formatting, creating charts and analyzing information in workbooks to organize and manage data. (Prerequisite: Basic Windows navigation skills)

Word Processing Concepts & Applications: Core**OTEC1875 3.00 credits**

This course is designed to build an understanding of word processing using Microsoft Word software. It begins with the introduction of concepts such as file management, entering text, text editing, terminology, on-line help, spell checking, and printing. It continues with all the basic skills you will need to use the application at a core level of proficiency. (Prerequisites: None)

Office Procedures**OTEC2812 3.00 credits**

Topics covered in this course may include aspects of the changing office; managing work, time and resources; using office technology and equipment; processing mail; providing customer service; making travel arrangements; planning meetings and conferences; using telecommunications;

rights, and Internet usage will be addressed. There will be an emphasis on social and ethical issues for thought-provoking course discussions. (Prerequisite: None)

professional development and leadership, personal finance and investment strategies; and using Outlook for email, scheduling, contacts, tasks, and notes. (Prerequisite: OTEC 1875)

Business Communications

OTEC2820 3.00 credits

This course covers the principles of effective writing and requires students to plan, compose, and format a variety of business communications. Emphasis is on proofreading, editing, and revising communications not just to make them correct but also to make them better. Types of communications may include letters, memos, e-mail, announcements, instructions, form letters, and news releases. Specific letter or memo types may include request and response, claim and adjustment, persuasive, and goodwill communications. Students will learn about letter and envelope formats, international communication differences, and organizational approaches for writing correspondence. Students will learn about words to avoid, transitions, parallel structure, and the you attitude. Students will also be introduced to library and Internet research techniques and will analyze real-world documents. (Prerequisite: OTEC1820)

Pharmacy Technician Department Overview

A pharmacy technician assists the pharmacist in all aspects of prescription processing, provides customer service and performs administrative duties within the pharmacy. Pharmacy technicians work under the direct supervision of a pharmacist. This program is designed to benefit individuals new to pharmacy and current pharmacy technicians interested in enhancing their skills and formalizing their training.

Pharmacy technicians will perform different duties, depending upon the practice setting in which they are employed. In general, a pharmacy technician may perform the following duties: Receive and verify prescriptions, and prepare medications for customers/patients through mixing, counting, and labeling prescriptions. They may also file insurance claims, maintain pharmacy inventory and stock medications. Pharmacy Technicians also consult with doctors, nurses and other health care professionals regarding patient information, allergies and lab results to determine optimal patient care.

During this program, students will prepare for the Pharmacy Technician Certification Exam (PTCE). Upon passing this exam, students will earn the credential: CPhT (Certified Pharmacy Technician).

Student Background Studies:

Minnesota Law requires that any person who provides services that involve direct contact with patients and residents at a health care or childcare facility licensed by the Minnesota Department of Health have a background study conducted by the state. An individual who is disqualified from having direct patient contact as a result of the background study, and whose disqualification is not set aside by the Commissioner of Health, will not be permitted to participate in a clinical placement in a Minnesota licensed health care or child care facility. Failure to participate in a clinical placement required by the academic program could result in ineligibility to qualify for a degree in that program.

Purpose of Training

Pharmacy, like most professions, is in a state of constant change. The role of the pharmacist is changing, requiring them to focus on direct patient care. This change also trickles down to the pharmacy technician, whose duties will have to change to meet the changing needs of the pharmacy. The role of the pharmacy technician is to assist the pharmacist in preparing medications, provide customer service, and to perform administrative duties within the pharmacy. There currently is no national training standard for pharmacy technicians; however, Minnesota state legislation is putting into practice a number of changes that directly affect the pharmacy technician.

Employers tend to favor applicants who have formal training, certification, or previous experience. Students who have a formal education and training background will be ahead of other technicians in the field.

Prospects for Employment

Employment is expected to increase much faster than average and job opportunities are expected to be good. Nationally, employment of pharmacy technicians is expected to increase by 31 percent from 2008 to 2018. This is largely due to the increased number of middle-aged and elderly people- who use more prescription drugs than younger people. In 2008, pharmacy technicians held 326,300 jobs; in which 75 percent were located in a retail setting and 16 percent were in hospitals.

Specifically in the state of Minnesota, from 2009-2019, Pharmacy Technicians will see an increase in jobs of 28.2%, or an estimated 1954 jobs according to the MN Department of Employment and Economic Development.

Salary Expectations

Median hourly wages of wage and salary pharmacy technicians in May 2008 were \$13.32. The middle 50 percent earned between \$10.95 and \$15.88. The lowest 10 percent earned less than \$9.27 and the highest 10 percent earned more than \$18.98. Certified technicians may earn more than non-certified technicians. The Bureau of Labor and Statistics also suggests that pharmacy technicians with formal education or training, previous work experience, and national certification will be specifically sought after to meet these demands.

Core Competencies

1. Exhibit professional interpersonal communications
2. Demonstrate work efficiency through the use of technology
3. Exhibit legal and ethical standards in the pharmacy

4. Triage common pharmacy situations
5. Describe the pharmacy billing and adjudication process
6. Demonstrate the ability to accurately perform common pharmaceutical dosage calculations
7. Identify common brand and generic medications and their common indications
8. Demonstrate aseptic technique through use of a validation model

Department Faculty

Summer Gioffre

Pharmacy Technician Degrees

Pharmacy Technician AAS Degree

Pharmacy Technician

A.A.S. Degree • 60 Credits

AAS 2319/AAS 3324



Degree Description

A pharmacy technician assists the pharmacist in all aspects of prescription processing, provides customer service and performs administrative duties within the pharmacy. Pharmacy technicians work under the direct supervision of a pharmacist. This program is designed to benefit individuals new to pharmacy and current pharmacy technicians interested in enhancing their skills and formalizing their training.

Pharmacy technicians will perform different duties, depending upon the practice setting in which they are employed. In general, a pharmacy technician may perform the following duties: Receive and verify prescriptions, and prepare medications for customers/patients through mixing, counting, and labeling prescriptions. They may also file insurance claims, maintain pharmacy inventory and stock medications. Pharmacy Technicians also consult with doctors, nurses and other health care professionals regarding patient information, allergies and lab results to determine optimal patient care.

During this program, students will prepare for the Pharmacy Technician Certification Exam (PTCE). Upon passing this exam, students will earn the credential: CPhT (Certified Pharmacy Technician).

Admission Dates: Fall Semester

Offered on the Faribault and North Mankato Campuses

The course requirements listed below are specific to the 2013-2014 school year. If you need to view the program from previous years view our [Catalog Archive](#).

This credential is part of the Pharmacy Technician department. [See the Pharmacy Technician department page for more details](#)

Required Technical Courses (14 Courses)

Complete all of the following courses:

- [HC 1000](#) Medical Terminology (3 Credits)
- [HC 1914](#) Anatomy & Physiology/Disease Conditions I (4 Credits)
- [HHP 210](#) Stress Management (3 Credits)
- [Otec1001](#) Computer Software for College (2 Credits)
- [PHRM1110](#) Pharmacy Technician Orientation (1 Credit)
- [PHRM1111](#) Pharmacy Law and Ethics (1 Credit)
- [PHRM1112](#) Retail Pharmacy (2 Credits)
- [PHRM1113](#) Pharmacy Math (4 Credits)
- [PHRM2114](#) Pharmacology (4 Credits)
- [PHRM2115](#) Pharmacy Non-Sterile Compounding (2 Credits)

Required Liberal Arts and Sciences (6 Courses)

To complete an AAS Degree, students must complete 21 MNTC credits from 3 of the 10 MNTC Goal areas.

- [ETHN101](#) American Racial Minorities (3 Credits)
- [ENGL100](#) Composition (4 Credits)
- [HUM 100](#) Critical Thinking (3 Credits)
- [CHEM108](#) Introduction to Chemistry (4 Credits)
- [PSYC100](#) Introduction to Psychology (4 Credits)
- [COMM140](#) Interpersonal Communication (3 Credits)

PLEASE NOTE: All program plans are preliminary and curriculum may change without notice. Your [catalog of record](#) may have different requirements.

[PHRM2116](#) Institutional Pharmacy (4 Credits)

[PHRM2117](#) Community Pharmacy Internship (4 Credits)

[PHRM2118](#) Pharmacy Technician Seminar (1 Credit)

[PHRM2119](#) Institutional Pharmacy Internship (4 Credits)

Pharmacy Technician - Associate of Applied Science Degree Course Descriptions**Medical Terminology****HC 1000 3.00 credits**

This course will be a study of the language used in the health care delivery system. The course presents component medical word parts and their use in building and interpreting medical terminology related to each body system. Spelling, pronunciation and usage of medical terminology will be emphasized. (Prerequisites: None)

Stress Management**HHP 210 3.00 credits**

This course exposes students to a holistic approach to stress management. Students will learn the basic principles, theories, coping skills and relaxation techniques to effectively manage personal stress. Topics include: the effects of the stress response, the relationship between stress and health/disease, the identification of personal stress levels, the application of coping skills and relaxation techniques, and the understanding of the importance of personal responsibility for health. (Prerequisite: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher)

Pharmacy Technician Orientation**PHRM1110 1.00 credits**

In this course students will gain a historical perspective of the pharmacy profession along with an understanding of the role of the pharmacy technician. Emphasis is placed upon the duties and responsibilities of the pharmacy technician along with an introduction to the various pharmacy practice settings. Students will also be required to complete the required paperwork for the pharmacy technician program. This course is intended to satisfy goals 23 and 41 of the model curriculum for pharmacy technician training, developed by the American Society of Health-System Pharmacists. (Prerequisite: None)

Retail Pharmacy**PHRM1112 2.00 credits**

This course is designed to give students an in-depth understanding of the retail pharmacy. Emphasis is placed on the role and responsibilities of the pharmacy technician in the

Anatomy & Physiology/Disease Conditions I**HC 1914 4.00 credits**

This course is designed to provide two approaches to assist the student in learning about the human body. The first is in developing a basic understanding of the normal structure and function of the human body and secondly to discuss disease processes that affect each body system. (Prerequisite: HC 1000)

Computer Software for College**Otec1001 2.00 credits**

This course covers basic information about computer hardware and software and the use of computer software as a business productivity tool. Students will be given introductory training on a Windows operating system and the common business applications of word processing, spreadsheets, database, and presentation graphics. This course is designed to equip the student with knowledge of hardware and software applications. This course will cover the business application software that will be used in more advanced courses. (Prerequisites: Basic computer skills or Computer Basic class; mouse proficiency, keyboarding skill of 25 words per minute)

Pharmacy Law and Ethics**PHRM1111 1.00 credits**

This course will give students a general understanding of the laws and regulations that govern pharmacy practice. This course will also cover the ethical principles governing the pharmacy technician and the roles they play in a practice setting. This course is intended to satisfy goals 2, 3, 6, 7, 11, 14, 17 and 29 of the model curriculum for pharmacy technician training, developed by the American Society of Health System Pharmacists. (Prerequisite: None)

Pharmacy Math**PHRM1113 4.00 credits**

In this course students will learn basic terminology, abbreviations and units necessary to perform pharmacy calculations. Pharmaceutical measuring systems and

retail pharmacy environment. Students will be given opportunities to apply these skills as active participants in the mock retail pharmacy environment. This course is intended to satisfy goals 1, 2, 3, 5, 8, 9, 10, 24, 26 and 27 of the model curriculum for pharmacy technician training developed by the American Society of Health-System Pharmacists. (Prerequisites: PHRM 1110, 1111)

Pharmacology

PHRM2114 4.00 credits

Students will gain knowledge of pharmacology, including a systematic approach to the classifications of medications, their indications and contraindications, mechanisms of action, side effects, drug interactions, and methods of administration. This course is intended to satisfy goals 1, 24, 25, 26, and 34 of the model curriculum for pharmacy technical training, developed by the American Society of Health-System Pharmacist. (Prerequisites: HC 1000, 1914, PHRM 1110)

Institutional Pharmacy

PHRM2116 4.00 credits

In this course, students will learn general practices associated with institutional pharmacy services. The student will also acquire knowledge of aseptic technique through both demonstrations and hands on experiences in the preparation of sterile compounds and IV admixtures. This course covers the preparation, calculations, and procedures for intravenous drug admixtures, TPN compounding, and critical care admixtures. Students will also have the opportunity to participate in various pharmacy technician duties using the Pyxis Medstation. This course is intended to satisfy goals 2, 3, 5, 10, 12, 26, 27, 30, and 35 of the model curriculum for pharmacy technician training, developed by the American Society of Health-System Pharmacists. (Prerequisite: PHRM 1113)

Pharmacy Technician Seminar

PHRM2118 1.00 credits

This course is designed for students to discuss pertinent topics related to the internship experiences as well as their futures as pharmacy technicians. This course is also designed to aid the student in the review of materials prior to the PTCE exam. This course is intended to satisfy goals 1-35 of the model curriculum for pharmacy technician training, developed by the American Society of Health-System Pharmacists. (Prerequisite: None)

American Racial Minorities

conversions will be addressed as well as a review of calculations pertinent to pharmacy practice. Students will learn to calculate the correct oral and parenteral dosages of drugs and other ingredients using information from prescriptions, medication orders, and drug labels. During the laboratory portion of the course, students will be given an opportunity to demonstrate a practical application of concepts. This course is intended to satisfy goals 2, 3, 15, 25 and 27 of the model curriculum for pharmacy technician training, developed by the American Society of Health-System Pharmacists. (Prerequisites: CHEM 108, PHRM 1110)

Pharmacy Non-Sterile Compounding

PHRM2115 2.00 credits

This course will enable students to learn general preparation of non-sterile pharmaceutical dosage forms. Practical experience in the manipulative and record keeping functions associated with compounding and the dispensing of compounded prescriptions will be provided. This course is intended to satisfy goals 3, 11, 12, and 35 of the model curriculum for pharmacy technician training, developed by the American Society of Health-System Pharmacists. (Prerequisites: PHRM 1113)

Community Pharmacy Internship

PHRM2117 4.00 credits

In this course students will take part in a pharmacy practice experience in the community setting to refine skills necessary for employment as a pharmacy technician. Students will participate in their internship experience along with on-line and in-class participation. This course is intended to satisfy goals 1, 2, 6, 7, 8, 9, 10, 11, 12, 14, 15, 16, 17, 18, 19, 20, 21, 24, 25, 26, 27, 28, 29, 31, 32, 33, and 35 of the model curriculum for pharmacy technician training developed by the American Society of Health-System Pharmacists. (Prerequisites: PHRM 1112, 1113, 2114)

Institutional Pharmacy Internship

PHRM2119 4.00 credits

This course will offer an intense pharmacy practice experience in an institutional setting with the purpose of refining skills introduced in previous coursework that are necessary to pursue a career as a pharmacy technician. Students will participate in their internship experience along with on-line and in-class participation. This course is intended to satisfy goals 1, 3, 5, 6, 8, 9, 10, 11, 12, 13, 14, 15, 17, 18, 19, 20, 24, 25, 26, 27, 29, 30, 31, 32, 33, and 35 of the model curriculum for pharmacy technician training, developed by the American Society of Health-System Pharmacists. (Prerequisites: PHRM 2116)

Composition

ETHN101 3.00 credits

This course will introduce students to the importance and the understanding of the nature of race relations in the United States of America. Students will use the various sociological perspectives as a lens to examine the social construction of race, ethnicity and the evolving nature of race and ethnic relations in the U.S. (Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher) (MNTC 5, 9: History/Social & Behavioral Sciences, Ethical & Civic Responsibility)

Critical Thinking**HUM 100 3.00 credits**

This course introduces students to the importance of critical thinking in our culture today. Students will be provided with methods of critical thinking as well as relevant topics on which to practice their skills. (Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher) (MNTC 2: Critical Thinking)

Introduction to Psychology**PSYC100 4.00 credits**

This course will introduce the broad spectrum of theories and applications that make up the field of psychology. Psychology is the scientific study of behavior and mental processes, and how they are affected by physical and mental states, and external environments and social forces. (Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher) (MNTC 5: History/Social & Behavioral Sciences)

ENGL100 4.00 credits

Composition is concerned with developing, through theory and practice, the ability to communicate in written form for personal and professional reasons. Students will develop writing skills, analytical skills, and critical thinking skills. Students will complete readings, papers, grammar exercises, and in-class activities. Students will learn methods of writing informatively and persuasively. (Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher AND a score of 85.5 or higher on the Sentence Skills portion of the Accuplacer test or completion of ENGL 0080 and ENGL 0090 with a grade of C or higher)(MNTC 1: Communication) This course has an online option.

Introduction to Chemistry**CHEM108 4.00 credits**

A one-semester introduction to the field of chemistry, this course is designed to allow the student to understand how chemistry relates to everyday life and to learn some of the language and concepts of chemistry related to applied health. This course uses a math-based approach. (Prerequisite: Must have a score of 75.5 or higher in the Elementary Algebra portion of the Accuplacer test or completion of MATH 0085 with a grade of C or higher.) (MNTC 3: Natural Sciences)

Interpersonal Communication**COMM140 3.00 credits**

In this class, participants will examine key components of interpersonal communication theory, identify the interpersonal communication skills necessary for healthy relationships, assess their own interpersonal communication effectiveness, and practice and hone interpersonal communication skills necessary for healthy home and work relationships. This course will also address relevant issues of social interaction, including how human diversity/culture (age, race, gender, etc.) affects our interpersonal communication. (Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher)(MNTC 1: Communication)

Phlebotomy Department Overview

The goals of the South Central College hybrid* Phlebotomy program are to provide academic education for individuals to acquire the knowledge, skills and attitudes necessary for becoming a specialist in obtaining blood specimens by venipuncture, arterial and microtechniques, for the purpose of laboratory analysis. A phlebotomist must have knowledge of the healthcare system, the anatomy and physiology related to laboratory testing and phlebotomy, the collection and transport requirements for tests performed in all areas of the laboratory, documentation and patient records, and the interpersonal skills needed to provide quality patient care.

*Hybrid courses have significant reduced seat time, amounting to at least 30% of the course time. As a result, there is considerable work online. The in-class time could be minimal or fairly significant, but online instructions plays an important role in these courses. For example, technical program courses in the Phlebotomy Program have all lecture-related material online with the student laboratory sessions constituting the only seat time.

Upon successful completion of the program, and after completion of one year full time acceptable work experience as a phlebotomy technician in an accredited laboratory, graduates are eligible to take the American Society of Clinical Pathology (ASCP) Phlebotomy Technician National Registry Examination administered by the Board of Certification (BOC). Fulltime experience is considered thirty-five hours per week and must include venipunctures and microtechniques.

Core Competencies

1. Demonstrate standard safety practices designed for the medical laboratory professions
2. Perform basic phlebotomy procedures that include both venipuncture and capillary techniques
3. Demonstrate standard quality assurance practices to ensure quality patient outcomes

Department Faculty

Stacy Hohenstein, Cathy Smesrud

Phlebotomy Degrees

Phlebotomy Certificate

Phlebotomy

Certificate • 16 Credits

CERT2306

Degree Description

The goals of the Phlebotomy program are to provide academic education for individuals to acquire the knowledge, skills, and attitudes necessary for becoming a specialist in obtaining blood specimens by venipuncture, arterial, and microtechniques, for the purpose of laboratory analysis. A phlebotomist must have knowledge of the healthcare system, the anatomy and physiology related to laboratory testing and phlebotomy, the collection and transport requirements for tests performed in all areas of the laboratory, documentation and patient records, and interpersonal skills needed to provide quality patient care.

Admission Dates: Fall Semester

Offered on the Faribault Campus

The course requirements listed below are specific to the 2013-2014 school year. If you need to view the program from previous years view our [Catalog Archive](#).

This credential is part of the Phlebotomy department. [See the Phlebotomy department page for more details](#)

Required Technical Courses (4 Courses)

Complete the following courses:

- [MDLT1810](#) Laboratory Techniques and Orientation (3 Credits)
- [PHLE1000](#) Anatomy & Physiology (2 Credits)
- [PHLE1100](#) Legal/Ethical Issues for Phlebotomists (1 Credit)
- [PHLE1200](#) Multiskilling for Phlebotomists (3 Credits)

Required Liberal Arts and Sciences (3 Credits)

Please complete one of the following courses:

- [COMM140](#) Interpersonal Communication (3 Credits)
- Or
- [COMM110](#) Public Speaking (3 Credits)

Other Required Courses (3 Courses)

Please complete the following courses:

- [FYE 100](#) First Year Experience (1 Credit)
- [HLTH1000](#) Medical Terminology (1 Credit)
- [OTEC1001](#) Computer Software for College (2 Credits)

PLEASE NOTE: All program plans are preliminary and curriculum may change without notice. Your [catalog of record](#) may have different requirements.

Phlebotomy - Certificate of Training Course Descriptions

Laboratory Techniques and Orientation

MDLT1810 3.00 credits

This course is an orientation course that familiarizes the student with a career in the medical laboratory field. It covers basic skills in clinical laboratory techniques and provides the student with practice. Topics include: MLT/Phlebotomy program policies; certification; working with various pieces of equipment; safety; infection control; quality control; specimen collection/handling/processing; good laboratory technique and maintaining efficiency and accuracy. The practice of phlebotomy is heavily emphasized in this course. Students will continue to enhance their phlebotomy skills in other technical courses, where blood samples are needed, and also during the clinical internship. (Prerequisites: None)

Legal/Ethical Issues for Phlebotomists

PHLE1100 1.00 credits

This course familiarizes the student with the various medical and legal issues that affect their activities as a healthcare professional. Topics included in instruction are confidentiality, patient bill of rights, right of privacy and informed consent. (Prerequisites: None)

First Year Experience

FYE 100 1.00 credits

First Year Experience is a course created to support students making the transition to college, to empower students to take control of their educational lives, and to help students be successful. The course will promote the development of critical thinking skills and positive educational values. Students will enhance their understanding of communication and learning styles, and lifestyle risks; learn to identify and use appropriate resources both on campus and within the community; acquire skills needed to promote study, personal wellness, goal setting and achievement; develop strategies to manage money, time and stress wisely; and in general develop the necessary skills to be a successful college student. (Prerequisite: None)

Computer Software for College

OTEC1001 2.00 credits

This course covers basic information about computer

Anatomy & Physiology

PHLE1000 2.00 credits

This course provides the student with a basic understanding of the structure and function of the human body. Instruction includes terminology, function, structure, diagnostic tests, and disorders of the anatomical systems. (Prerequisites: None)

Multiskilling for Phlebotomists

PHLE1200 3.00 credits

This course cross trains the phlebotomy student in several different skill areas within the laboratory. Instruction includes EKGs, CLIA'88 waived procedures, and POCT (point-of-care-testing). (Prerequisites: MDLT 1810 or Program Director permission)

Medical Terminology

HLTH1000 1.00 credits

This course teaches students to recognize and build medical terms after learning the meaning of word parts. The course is based on a systems approach. Students also learn how to interpret and use common medical abbreviations and symbols. With instructor approval, this course may be taken on independent study. (Prerequisite: None)

Interpersonal Communication

COMM140 3.00 credits

In this class, participants will examine key components of

hardware and software and the use of computer software as a business productivity tool. Students will be given introductory training on a Windows operating system and the common business applications of word processing, spreadsheets, database, and presentation graphics. This course is designed to equip the student with knowledge of hardware and software applications. This course will cover the business application software that will be used in more advanced courses. (Prerequisites: Basic computer skills or Computer Basic class; mouse proficiency, keyboarding skill of 25 words per minute)

interpersonal communication theory, identify the interpersonal communication skills necessary for healthy relationships, assess their own interpersonal communication effectiveness, and practice and hone interpersonal communication skills necessary for healthy home and work relationships. This course will also address relevant issues of social interaction, including how human diversity/culture (age, race, gender, etc.) affects our interpersonal communication. (Prerequisites: Must have a score of 78 or higher on the Reading portion of the Accuplacer test or completion of READ 0080 and READ 0090 with a grade of C or higher)(MNTC 1: Communication)

Public Speaking

COMM110 3.00 credits

This course develops or improves effective performance in acquiring, evaluating, organizing, and communicating information. Learners develop and apply critical and creative thinking to structuring arguments, making presentations, using multimedia, and supporting each other in impromptu and extemporaneous speaking. Course de-emphasizes competition and stresses personal and workplace effectiveness in communication skills. (Prerequisites: Must have a score of 86 or higher on the Sentence Skills portion of the Accuplacer test or completion of ENGL 0080 and ENGL 0090 with a grade of C or higher) (MNTC 1: Communication)

Small Business Management Department Overview

Students in the Small Business Management program must be actively engaged in the ownership, management or operation of a small business, or the start-up of a business. The purpose of the program is to develop the skill set of the owner and/or manager in order to organize resources that maximize the potential for meeting business and personal goals. The program emphasizes planning, record keeping, marketing, financial and human resource management. This is a three-year part-time program with online classes that also feature both group instruction and one-on-one mentoring.

The SBM Core program is a hybrid of:

- online classes to fill in your knowledge gaps
- web/phone one-on-one consultations making the learning real
- in-person cohort meetings to learn from other business owners and develop a solid network of peer contacts
- at-the-business mentoring focuses on your business and allows for real-time learning. These sessions also give the instructor first-hand understanding of your operation so there is knowledgeable support when you need it.

This program is part-time and eligible for state grant funding only.

Core Competencies

1. Strategic Planning
2. Marketing
3. Finance/accounting/bookkeeping
4. Human Resources
5. Business related technology

Department Faculty

Dan Sprague, Scott Taylor

Small Business Management Degrees

Small Business Management Diploma
Small Business Management Certificate
Small Business Management Financial Management Certificate
Small Business Management Human Resources Certificate
Small Business Management Marketing Certificate
Small Business Management Record Keeping Certificate

Small Business Management

Diploma • 39 Credits

DIP 2109/DIP 3121



Degree Description

The SBM diploma provides a broad spectrum of education in the management of a small business. The curriculum focuses on strategic planning, record keeping, financial analysis, marketing and personnel management through the required classes. Additionally, elective classes allow the business owner or manager to focus on specific areas they feel are most important to their business.

Admission Dates: Fall, Spring, and Summer Semester

Offered on the Faribault and North Mankato Campuses

The course requirements listed below are specific to the 2013-2014 school year. If you need to view the program from previous years view our [Catalog Archive](#).

This credential is part of the Small Business Management department. [See the Small Business Management department page for more details](#)

Required Technical Courses (8 Courses)

Select all of the following courses:

- [SBMT1110](#) SBM Organizational Planning (2 Credits)
- [SBMT1120](#) SBM Business Systems (3 Credits)
- [SBMT1210](#) SBM Financial Systems (3 Credits)
- [SBMT1220](#) SBM Financial Management (3 Credits)
- [SBMT1230](#) SBM Financial Analysis (3 Credits)
- [SBMT1310](#) SBM Marketing Systems (2 Credits)
- [SBMT1320](#) SBM Marketing Management (2 Credits)
- [SBMT1410](#) SBM Personnel Systems (3 Credits)

Required Technical Course Electives (18 Credits)

You must complete 18 credits of electives from the following lists.

- [SBMT2130](#) SBM Record Keeping (3 Credits)
- [SBMT2131](#) SBM Asset & Inventory Management (2 Credits)
- [SBMT2132](#) SBM A/R & A/P Management (2 Credits)
- [SBMT2133](#) SBM Reconciliation & Closing Accounts (2 Credits)
- [SBMT2134](#) SBM Payroll Systems (3 Credits)
- [SBMT2135](#) SBM Payroll Reports (2 Credits)
- [SBMT2136](#) SBM Year End Closing (1 Credit)
- [SBMT2240](#) SBM Organizational Structure (1 Credit)
- [SBMT2241](#) SBM Financial & Tax Planning (2 Credits)
- [SBMT2242](#) SBM Risk Management (1 Credit)
- [SBMT2243](#) SBM Cost Analysis (2 Credits)
- [SBMT2244](#) SBM Pro-Forma Financial Statements (2 Credits)
- [SBMT2330](#) SBM Sales & Marketing Analysis (2 Credits)
- [SBMT2331](#) SBM Marketing Research (1 Credit)
- [SBMT2332](#) SBM e-Business Sales (2 Credits)
- [SBMT2333](#) SBM Customer Information Systems (1 Credit)
- [SBMT2334](#) SBM Customer Service (2 Credits)
- [SBMT2420](#) SBM Supervisory Skills 1 (2 Credits)
- [SBMT2421](#) SBM Supervisory Skills 2 (2 Credits)
- [SBMT2422](#) SBM Employee Compensation (2 Credits)
- [SBMT2531](#) SBM Business Communications (1 Credit)
- [SBMT2532](#) SBM Business Math (1 Credit)
- [SBMT2533](#) SBM Time Management Skills (1 Credit)
- [SBMT2534](#) SBM Stress Management Skills (1 Credit)
- [SBMT2610](#) SBM Computerization-Accounting (3 Credits)
- [SBMT2611](#) SBM Computerization-Sales & Marketing (3 Credits)
- [SBMT2612](#) SBM Computerization-Human Resources (3 Credits)
- [SBMT2700](#) SBM Going Into Business (3 Credits)
- [SBMT2900](#) SBM Special Projects (1 - 3 Credits)

PLEASE NOTE: All program plans are preliminary and curriculum may change without notice. Your [catalog of record](#) may have different requirements.

Small Business Management - Diploma of Occupational Proficiency Course Descriptions**SBM Organizational Planning****SBMT1110 2.00 credits**

In this class the student will do a business self-study, create a mission and vision statement and set business and personal goals. (Prerequisites: None)

SBM Business Systems**SBMT1120 3.00 credits**

In this class the student will begin preparing the business plan including the strategic plan and all business systems. (Prerequisites: None)

SBM Financial Systems**SBMT1210 3.00 credits**

In this class the student will design, evaluate and apply an appropriate record keeping system for the business and learn to interpret financial statements. (Prerequisites: None)

SBM Financial Management**SBMT1220 3.00 credits**

In this class the student will study cost controls and break-even analysis. They will also learn the process of pricing products and services for the business. (Prerequisites: None)

SBM Financial Analysis**SBMT1230 3.00 credits**

In this class the student will study how to analyze the profit and loss statement, the balance sheet and how to do ratio and trend analysis. (Prerequisites: SBMT1210)

SBM Marketing Systems**SBMT1310 2.00 credits**

In this class the student will identify the 5 P's of marketing for the business, identify and refine the business image, and create a marketing strategy for the business. (Prerequisites: None)

SBM Marketing Management**SBMT1320 2.00 credits**

In this class the student will learn advertising and promotional techniques and create an advertising plan. They will also learn the basics of selecting appropriate media and ad design. (Prerequisites: SBMT1310)

SBM Personnel Systems**SBMT1410 3.00 credits**

In this class the student will learn recruiting and hiring techniques for the business. They will also study training methodology and how to create personnel files and manuals. (Prerequisites: None)

SBM Record Keeping**SBMT2130 3.00 credits**

In this class the student will identify source documents and practice data entry, general journal entries, sales journal entries and expense journal entries. (Prerequisites: None)

SBM Asset & Inventory Management**SBMT2131 2.00 credits**

In this class the student will learn the process of managing assets, asset allocation and inventory so as to improve business profitability. (Prerequisites: SBMT None)

SBM A/R & A/P Management**SBMT2132 2.00 credits****SBM Reconciliation & Closing Accounts****SBMT2133 2.00 credits**

In this class the student will learn the process of managing the accounts receivable, creating reports and establishing customer credit guidelines. The student will also learn the process of managing accounts payable, creating reports and controlling cash flow. (Prerequisites: None)

SBM Payroll Systems

SBMT2134 3.00 credits

In this class the student will learn to identify the needed components of a payroll system for their business, process an initial payroll and create monthly, quarterly and yearly reports. (Prerequisites: None)

SBM Year End Closing

SBMT2136 1.00 credits

In this class the student will learn the process of closing expense and revenue accounts and making adjusting entries for the year-end. (Prerequisites: None)

SBM Financial & Tax Planning

SBMT2241 2.00 credits

In this class the student will begin the process of financial and tax planning for the company. (Prerequisites: SBMT1230)

SBM Cost Analysis

SBMT2243 2.00 credits

In this class the student will learn to apply direct materials, direct labor and other expenses associated with a job. They will create appropriate records and reports. (Prerequisites: None)

SBM Sales & Marketing Analysis

SBMT2330 2.00 credits

In this class the student will conduct a sales audit of the business and complete a sales and marketing analysis report based on customer and product information. (Prerequisites: SBMT1310)

SBM e-Business Sales

SBMT2332 2.00 credits

In this class the student will examine business to customer sales transactions and applications for their business. (Prerequisites: None)

In this class the student will learn the process of reconciling and closing accounts, and matching account summaries to appropriate documents. (Prerequisites: None)

SBM Payroll Reports

SBMT2135 2.00 credits

In this class the student will learn to use the appropriate documents for reporting employee earnings to the state and federal governments on a monthly, quarterly and yearly basis. (Prerequisites: SBMT2134)

SBM Organizational Structure

SBMT2240 1.00 credits

In this class the student will learn about the various organizational structures that a small business may take and their strengths and weaknesses. (Prerequisites: SBMT1230)

SBM Risk Management

SBMT2242 1.00 credits

In this class the student will learn various techniques for identifying and minimizing risk for their business. (Prerequisites: None)

SBM Pro-Forma Financial Statements

SBMT2244 2.00 credits

In this class the student will learn how to construct pro-forma income and balance sheet statements and financial forecasts. (Prerequisites: SBMT1230)

SBM Marketing Research

SBMT2331 1.00 credits

In this class the student will learn how to conduct some primary and secondary market research as it relates to their business. (Prerequisites: None)

SBM Customer Information Systems

SBMT2333 1.00 credits

In this class the student will learn the process of collecting and compiling customer information for increased sales opportunities and improved customer service. (Prerequisites: SBMT1310)

SBM Customer Service

SBMT2334 2.00 credits

This class is designed to give additional skills to the business owner or manager that improve the customer service offered by the business. The class will focus on creating a customer service plan, training staff to deal with customer service issues, and identifying management procedures to maintain and improve customer service.

SBM Supervisory Skills 2

SBMT2421 2.00 credits

In this class the student will study employee communication skills and dealing with diversity in the workplace. (Prerequisites: None)

SBM Business Communications

SBMT2531 1.00 credits

In this class the student will practice their speaking and writing to improve their communication skills. They will also learn about the different styles of communication and how to address each. (Prerequisites: None)

SBM Time Management Skills

SBMT2533 1.00 credits

In this class the student will study time management skills as applied to a small business management position. (Prerequisite: None)

SBM Computerization-Accounting

SBMT2610 3.00 credits

In this class the student will begin the process of computerizing the accounting records of their business. (Prerequisites: None)

SBM Computerization-Human Resources

SBMT2612 3.00 credits

In this class the student will begin the process of computerizing the human resource records of the employees and the business. (Prerequisites: None)

SBM Special Projects

SBMT2900 1 - 3 credits

SBM Supervisory Skills 1

SBMT2420 2.00 credits

In this class the student will learn various strategies for dealing with different behavioral types in individuals and strategies for building work teams. (Prerequisites: None)

SBM Employee Compensation

SBMT2422 2.00 credits

In this class the student will identify employee compensation and benefit options for their business and government rules and regulations regarding compensation for employees. (Prerequisites: None)

SBM Business Math

SBMT2532 1.00 credits

In this class the student will learn math fundamentals as they apply to small businesses. This will include loan and depreciation schedules as well as the time value of money. (Prerequisites: None)

SBM Stress Management Skills

SBMT2534 1.00 credits

In this class the student will study stress management skills as applied to a small business management position. (Prerequisites: None)

SBM Computerization-Sales & Marketing

SBMT2611 3.00 credits

In this class the student will begin the process of computerizing the sales and marketing records of customers and the business. (Prerequisites: None)

SBM Going Into Business

SBMT2700 3.00 credits

In this class the student will examine the process of starting a business. It will include business organization, hiring of employees, marketing and basic record keeping. (Prerequisites: None)

Topics and projects will be assigned by the instructor.
(Prerequisites: None)

Small Business Management

Certificate • 21 Credits

CERT2144/CERT3144



Degree Description

The SBM certificate provides a broad spectrum of education in the management of a small business. The curriculum focuses on strategic planning, record keeping, financial analysis, marketing and personnel management through the required classes. No electives are available for this certificate.

Admission Dates: Fall, Spring, and Summer Semester

Offered on the Faribault and North Mankato Campuses

The course requirements listed below are specific to the 2013-2014 school year. If you need to view the program from previous years view our [Catalog Archive](#).

This credential is part of the Small Business Management department. [See the Small Business](#)

[Management department page for more details](#)

Required Technical Courses (8 Courses)

Complete all of the following courses:

[SBMT1110](#) SBM Organizational Planning (2 Credits)

[SBMT1120](#) SBM Business Systems (3 Credits)

[SBMT1210](#) SBM Financial Systems (3 Credits)

[SBMT1220](#) SBM Financial Management (3 Credits)

[SBMT1230](#) SBM Financial Analysis (3 Credits)

[SBMT1310](#) SBM Marketing Systems (2 Credits)

[SBMT1320](#) SBM Marketing Management (2 Credits)

[SBMT1410](#) SBM Personnel Systems (3 Credits)

PLEASE NOTE: All program plans are preliminary and curriculum may change without notice. Your [catalog of record](#) may have different requirements.

Small Business Management - Certificate of Training Course Descriptions**SBM Organizational Planning****SBMT1110 2.00 credits**

In this class the student will do a business self-study, create a mission and vision statement and set business and personal goals. (Prerequisites: None)

SBM Business Systems**SBMT1120 3.00 credits**

In this class the student will begin preparing the business plan including the strategic plan and all business systems. (Prerequisites: None)

SBM Financial Systems**SBMT1210 3.00 credits**

In this class the student will design, evaluate and apply an appropriate record keeping system for the business and learn to interpret financial statements. (Prerequisites: None)

SBM Financial Management**SBMT1220 3.00 credits**

In this class the student will study cost controls and break-even analysis. They will also learn the process of pricing products and services for the business. (Prerequisites: None)

SBM Financial Analysis**SBMT1230 3.00 credits**

In this class the student will study how to analyze the profit and loss statement, the balance sheet and how to do ratio and trend analysis. (Prerequisites: SBMT1210)

SBM Marketing Systems**SBMT1310 2.00 credits**

In this class the student will identify the 5 P's of marketing for the business, identify and refine the business image, and create a marketing strategy for the business. (Prerequisites: None)

SBM Marketing Management**SBMT1320 2.00 credits**

In this class the student will learn advertising and promotional techniques and create an advertising plan. They will also learn the basics of selecting appropriate media and ad design. (Prerequisites: SBMT1310)

SBM Personnel Systems**SBMT1410 3.00 credits**

In this class the student will learn recruiting and hiring techniques for the business. They will also study training methodology and how to create personnel files and manuals. (Prerequisites: None)

Small Business Management Financial Management

Certificate • 14 Credits

CERT2142/CERT3142

**Degree Description**

The SBM certificate provides a broad spectrum of education in the management of a small business. The curriculum focuses on strategic planning, record keeping, financial analysis, marketing and personnel management through the required classes. No electives are available for this certificate.

Admission Dates: Fall, Spring, and Summer Semester**Offered on the Faribault and North Mankato Campuses**

The course requirements listed below are specific to the 2013-2014 school year. If you need to view the program from previous years view our [Catalog Archive](#).

This credential is part of the Small Business Management department. [See the Small Business](#)

[Management department page for more details](#)

Required Technical Courses (5 Courses)

Complete all of the following courses:

[SBMT1110](#) SBM Organizational Planning (2 Credits)

[SBMT1120](#) SBM Business Systems (3 Credits)

[SBMT1210](#) SBM Financial Systems (3 Credits)

[SBMT1220](#) SBM Financial Management (3 Credits)

[SBMT1230](#) SBM Financial Analysis (3 Credits)

PLEASE NOTE: All program plans are preliminary and curriculum may change without notice. Your [catalog of record](#) may have different requirements.

Small Business Management Financial Management - Certificate of Training Course Descriptions**SBM Organizational Planning****SBMT1110 2.00 credits**

In this class the student will do a business self-study, create a mission and vision statement and set business and personal goals. (Prerequisites: None)

SBM Business Systems**SBMT1120 3.00 credits**

In this class the student will begin preparing the business plan including the strategic plan and all business systems. (Prerequisites: None)

SBM Financial Systems**SBMT1210 3.00 credits**

In this class the student will design, evaluate and apply an appropriate record keeping system for the business and learn to interpret financial statements. (Prerequisites: None)

SBM Financial Management**SBMT1220 3.00 credits**

In this class the student will study cost controls and break-even analysis. They will also learn the process of pricing products and services for the business. (Prerequisites: None)

SBM Financial Analysis**SBMT1230 3.00 credits**

In this class the student will study how to analyze the profit and loss statement, the balance sheet and how to do ratio and trend analysis. (Prerequisites: SBMT1210)

Small Business Management Human Resources

Certificate • 12 Credits

CERT2140/CERT3140

**Degree Description**

The SBM Human Resources certificate provides a focus on HR skills needed by the small business owner or manager. Required classes cover the basics of small business management and personal or human resources management. Electives allow the business owner or manager to focus on areas of specific need or interest.

Admission Dates: Fall, Spring, and Summer Semester**Offered on the Faribault and North Mankato Campuses**

The course requirements listed below are specific to the 2013-2014 school year. If you need to view the program from previous years view our [Catalog Archive](#).

This credential is part of the Small Business Management department. [See the Small Business Management department page for more details](#)

Required Technical Courses (3 Courses)

Complete all of the following courses:

- [SBMT1110](#) SBM Organizational Planning (2 Credits)
- [SBMT1120](#) SBM Business Systems (3 Credits)
- [SBMT1410](#) SBM Personnel Systems (3 Credits)

Choose 4 credits from the following list: (4 Credits)

- [SBMT2420](#) SBM Supervisory Skills 1 (2 Credits)
- [SBMT2421](#) SBM Supervisory Skills 2 (2 Credits)
- [SBMT2422](#) SBM Employee Compensation (2 Credits)

PLEASE NOTE: All program plans are preliminary and curriculum may change without notice. Your [catalog of record](#) may have different requirements.

Small Business Management Human Resources - Certificate of Training Course Descriptions**SBM Organizational Planning****SBMT1110 2.00 credits**

In this class the student will do a business self-study, create a mission and vision statement and set business and personal goals. (Prerequisites: None)

SBM Business Systems**SBMT1120 3.00 credits**

In this class the student will begin preparing the business plan including the strategic plan and all business systems. (Prerequisites: None)

SBM Personnel Systems**SBMT1410 3.00 credits**

In this class the student will learn recruiting and hiring techniques for the business. They will also study training methodology and how to create personnel files and manuals. (Prerequisites: None)

SBM Supervisory Skills 1**SBMT2420 2.00 credits**

In this class the student will learn various strategies for dealing with different behavioral types in individuals and strategies for building work teams. (Prerequisites: None)

SBM Supervisory Skills 2**SBMT2421 2.00 credits**

In this class the student will study employee communication skills and dealing with diversity in the workplace. (Prerequisites: None)

SBM Employee Compensation**SBMT2422 2.00 credits**

In this class the student will identify employee compensation and benefit options for their business and government rules and regulations regarding compensation for employees. (Prerequisites: None)

Small Business Management Marketing

Certificate • 14 Credits

CERT2141/CERT3141



Degree Description

The SBM Human Resources certificate provides a focus on marketing skills needed by the small business owner or manager. Required classes cover the basics of small business management and marketing. Electives allow the business owner or manager to focus on areas of specific need or interest.

Admission Dates: Fall, Spring, and Summer Semester

Offered on the Faribault and North Mankato Campuses

The course requirements listed below are specific to the 2013-2014 school year. If you need to view the program from previous years view our [Catalog Archive](#).

This credential is part of the Small Business Management department. [See the Small Business Management department page for more details](#)

Required Technical Courses (4 Courses)

Complete all of the following courses:

- [SBMT1110](#) SBM Organizational Planning (2 Credits)
- [SBMT1120](#) SBM Business Systems (3 Credits)
- [SBMT1310](#) SBM Marketing Systems (2 Credits)
- [SBMT1320](#) SBM Marketing Management (2 Credits)

Choose 5 credits from the following list: (5 Credits)

- [SBMT2330](#) SBM Sales & Marketing Analysis (2 Credits)
- [SBMT2331](#) SBM Marketing Research (1 Credit)
- [SBMT2332](#) SBM e-Business Sales (2 Credits)
- [SBMT2333](#) SBM Customer Information Systems (1 Credit)
- [SBMT2334](#) SBM Customer Service (2 Credits)

PLEASE NOTE: All program plans are preliminary and curriculum may change without notice. Your [catalog of record](#) may have different requirements.

Small Business Management Marketing - Certificate of Training Course Descriptions**SBM Organizational Planning****SBMT1110 2.00 credits**

In this class the student will do a business self-study, create a mission and vision statement and set business and personal goals. (Prerequisites: None)

SBM Business Systems**SBMT1120 3.00 credits**

In this class the student will begin preparing the business plan including the strategic plan and all business systems. (Prerequisites: None)

SBM Marketing Systems**SBMT1310 2.00 credits**

In this class the student will identify the 5 P's of marketing for the business, identify and refine the business image, and create a marketing strategy for the business. (Prerequisites: None)

SBM Marketing Management**SBMT1320 2.00 credits**

In this class the student will learn advertising and promotional techniques and create an advertising plan. They will also learn the basics of selecting appropriate media and ad design. (Prerequisites: SBMT1310)

SBM Sales & Marketing Analysis**SBMT2330 2.00 credits**

In this class the student will conduct a sales audit of the business and complete a sales and marketing analysis report based on customer and product information. (Prerequisites: SBMT1310)

SBM Marketing Research**SBMT2331 1.00 credits**

In this class the student will learn how to conduct some primary and secondary market research as it relates to their business. (Prerequisites: None)

SBM e-Business Sales**SBMT2332 2.00 credits**

In this class the student will examine business to customer sales transactions and applications for their business. (Prerequisites: None)

SBM Customer Information Systems**SBMT2333 1.00 credits**

In this class the student will learn the process of collecting and compiling customer information for increased sales opportunities and improved customer service. (Prerequisites: SBMT1310)

SBM Customer Service**SBMT2334 2.00 credits**

This class is designed to give additional skills to the business owner or manager that improve the customer service offered by the business. The class will focus on creating a customer service plan, training staff to deal with customer service issues, and identifying management procedures to maintain and improve customer service.

Small Business Management Record Keeping

Certificate • 18 Credits

CERT2143/CERT3143



Degree Description

The SBM Record Keeping certificate provides a focus on record keeping skills needed by the small business owner or manager. Required classes cover the basics of small business management and record keeping. Electives allow the business owner or manager to focus on areas of specific need or interest.

Admission Dates: Fall, Spring, and Summer Semester

Offered on the Faribault and North Mankato Campuses

The course requirements listed below are specific to the 2013-2014 school year. If you need to view the program from previous years view our [Catalog Archive](#).

This credential is part of the Small Business Management department. [See the Small Business Management department page for more details](#)

Required Technical Courses (4 Courses)

Complete all of the following courses:

- [SBMT1110](#) SBM Organizational Planning (2 Credits)
- [SBMT1120](#) SBM Business Systems (3 Credits)
- [SBMT1210](#) SBM Financial Systems (3 Credits)
- [SBMT1230](#) SBM Financial Analysis (3 Credits)

Choose 7 credits from the following list: (7 Credits)

- [SBMT2130](#) SBM Record Keeping (3 Credits)
- [SBMT2131](#) SBM Asset & Inventory Management (2 Credits)
- [SBMT2132](#) SBM A/R & A/P Management (2 Credits)
- [SBMT2133](#) SBM Reconciliation & Closing Accounts (2 Credits)
- [SBMT2134](#) SBM Payroll Systems (3 Credits)
- [SBMT2135](#) SBM Payroll Reports (2 Credits)
- [SBMT2136](#) SBM Year End Closing (1 Credit)

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