

## COURSE CLASSIFICATION AND DESCRIPTION SYSTEM

Each course description in this section is preceded by a course letter such as ACC:111. The first three letters are the prefix. The last three numbers are the suffix. The meaning of the number is described below. Course prefixes that are preceded by a (~) in the listing below are considered career-technical in nature and may be applied toward 16 of the 20 general elective credits required for an AA or AS degree.

**Prefixes:** The three-letter prefix identifies the area of study in which the course may be found.

**Suffixes:** The last three numbers identify a specific course within a subject area.

Note: Some of the courses will be preceded by one or more asterisks (\*). See explanations below:

( ) Courses not preceded by an asterisk are intended to meet specific Diploma and Associate of Applied Science Degree requirements as outlined in this catalog. Sixteen semester hours from this area can be applied to Associate of Arts or Associate of Science Degree electives. Transferability varies and is dependent on the receiving institution. If you intend to transfer to a four-year institution, you should clear the transferability of such courses through the receiving institution.

(\*) Courses that correspond to college or university lower division coursework. Northeast Iowa Community College recommends that colleges and universities grant subject or elective credit toward junior standing for these courses. Many of these courses may be applied toward meeting distribution and elective requirements for the Associate of Arts degree.

(\*\*) Foundation-building (developmental) courses intended primarily to provide you an opportunity for the improvement of subject matter proficiencies in preparation for non-developmental and transfer. These courses are not considered transferable.

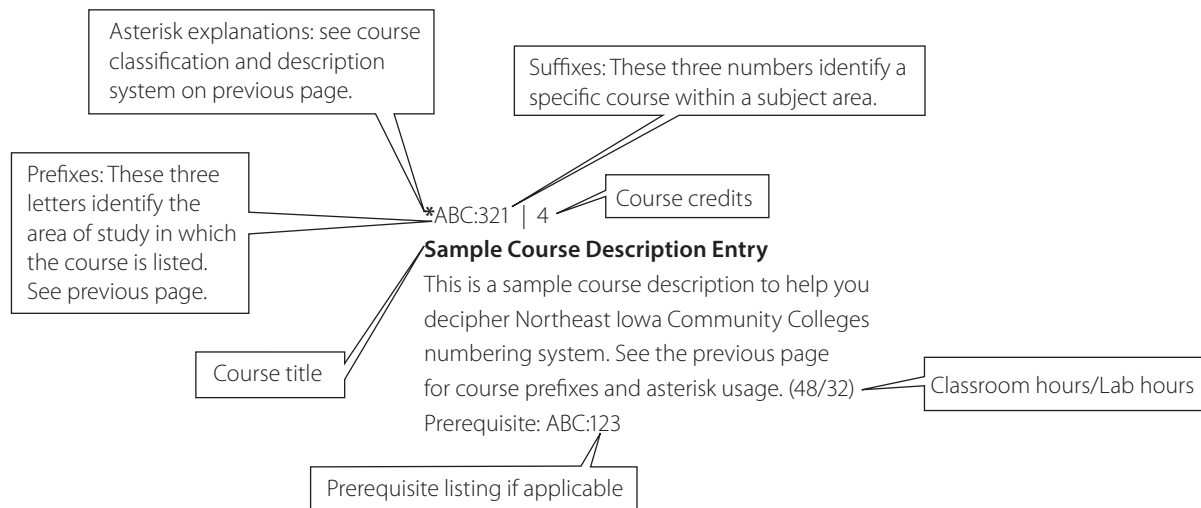
**Please Note:** NICC separates science courses into Natural and Physical Sciences as listed below, but other colleges and universities may use different breakdowns. Students transferring credits to another institution should check with that institution for information on their requirements and how these specific courses fit into those requirements.

Natural/Life Sciences: BIO:112, BIO:113, BIO:125, BIO:149, BIO:153, BIO:157, BIO:158, BIO:160, BIO:168, BIO:173, BIO:183, BIO:184, BIO:190, BIO:200, BIO:204, BIO:248, ENV:115, ENV:116, ENV:140

Physical Sciences: CHM:110, CHM:111, CHM:160, CHM:161, CHM:170, CHM:171, CHM:261, CHM:271, PHS:142, PHS:143, PHS:166, PHS:170, PHS:171, PHY:106, PHY:162, PHY:172, PHY:710

~ ACC – Accounting	ECN – Economics	~ MKT – Marketing
~ ADM – Administrative Assistant	~ EDU – Education	~ MLT – Medical Lab Tech
~ ADN – Associate Degree Nursing	~ EGR – Engineering	~ MTR – Medical Transcription
~ AGA – Agriculture – Agronomy	~ EGT – Engineering Technology	~ MUA – Music – Applied
~ AGB – Agriculture – Farm Management	~ ELE – Electrical Technology	MUS – Music - General
~ AGC – Agriculture – Comprehensive, Misc.	~ ELT – Electronics	~ NET – Computer Networking
~ AGM – Agriculture – Mechanics	~ EMS – Emergency Medical Services	PEA – Physical Education Activities
~ AGP – Agriculture – Precision Ag	ENG – English Composition	PEC – Coaching/Officiating
~ AGS – Agriculture – Animal Science	ENV – Environmental Science	PHI – Philosophy
~ AGV – Agriculture – Vet Tech	~ FIN – Finance	~ PHS – Physical Science
~ ANI – Animation	~ FIR – Fire Science	PHY – Physics
ART – Art	FLS – Foreign Language – Spanish	~ PNN – Practical Nursing
ASL – American Sign Language	GEO – Geography	POL – Political Science
~ AUT – Automotive Technology	~ GIS – Geographic Information Systems	PSY – Psychology
~ BCA – Business Computer Application	~ GLS – Global Studies	~ RAD – Radiologic Technology
BIO – Biology	~ GRA – Graphic Communications	~ RCP – Respiratory Therapy
~ BUS – Business	~ HCR – Heating and Air Conditioning	RDG – Reading
~ CAD – Computer Aided Drafting	HIS – History	REL – Religion
CHM – Chemistry	~ HIT – Health Information Technology	SDV – Student Development
~ CIS – Computer Programming	~ HSC – Health Sciences	~ SER – Sustainable Energy Resources
CLS – Cultural Studies	~ HSV – Human Services	SOC – Sociology
COM – Communication	HUM – Humanities	SPC – Speech
~ CON – Construction	~ IND – Industrial Technology	~ TRV – Travel and Tourism
~ COS – Cosmetology	~ LGL – Legal Assistant	~ UTL – Utilities
~ CRJ – Criminal Justice	LIT – Literature	~ WEL – Welding
~ CSC – Computer Science	~ MAP – Medical Assistant	~ WTT – Wind Energy and Turbine Technology
~ DEA – Dental Assistant	MAT – Mathematics	
DRA – Film and Theatre	~ MDT – Mobile Development Technology	
~ DSL – Diesel	~ MFG – Manufacturing	
~ ECE – Early Childhood Education	~ MGT – Management	

## SAMPLE COURSE DESCRIPTION



The course descriptions appear in alphabetical order by their three-letter prefixes.

### ACC: Accounting

ACC:115 | 4

#### Introduction to Accounting

Basic accounting principles are presented to introduce beginning students to fundamental accounting concepts. The accounting cycle of journalizing transactions, posting, adjusting and closing entries as well as the preparation of financial statements is emphasized for service and merchandising concerns, in addition to the use of special journals for a merchandiser. (48/32) Prerequisite: MAT:053 or qualifying placement score

### ADM: Administrative Assistant

ADM:116 | 3

#### Keyboarding II

Review of proper keyboarding techniques with emphasis placed on speed and accuracy development. Practical applications in producing business forms, interoffice correspondence, letters, manuscripts and tables. (16/64) Prerequisite: ADM:105 or 25 nwpm

### AGA: Agriculture - Agronomy

\*AGA:114 | 3

#### Principles of Agronomy

Introductory principles of plant-soil-climate relationships in crop production designed after a similar course at Iowa State University and uses many of the same materials. (36/24)

AGA:117 | 3

#### Crop Science

Course is designed for high school seniors and college freshmen as an overview of crop management. It introduces the principles of plant-soil-climate relationships. (40/16)

### AGB: Agriculture – Farm Management

\*AGB:235 | 3

#### Introduction to Agriculture Markets

Basic concepts and economics principles related to markets for agricultural input and products. Overview of current marketing problems faced by farms and agribusinesses, farm and retail price behavior, market structure, food marketing channels, food quality and safety, implications at the farm level of consumer preferences and the role of agriculture in the general economy. Covers marketing methods and strategies

for agricultural commodities, including introduction to hedging, fundamental analysis, technical analysis, futures, options, risk management tools and use of other market information. (40/16)

AGB:329 | 3

#### Farm Management

Designed for high school seniors and college freshmen as an overview of the farm management process and the process of farm decision making. Includes record keeping, budgeting, year-end analysis, enterprise analysis and tax management. (40/16)

\*AGB:330 | 3

#### Farm Business Management

Covers all aspects of farm decision making, including record keeping, budgeting, year-end analysis, enterprise analysis and tax management. (48/0)

### AGS: Agriculture – Animal Science

\*AGS:101 | 2

#### Working with Animals

Taught in conjunction with Survey of the Animal Industry as the lab component. Course intent is to give practical experience working with dairy, beef, sheep, goats, horses, poultry and companion animals. Additionally, students will interview successful business owners

in each of these areas while touring their facilities. (16/32)

\*AGS:114 | 2

### **Survey of the Animal Industry**

Explores breeds, life cycles, management practices, marketing and care of farm animals. Species included are food animal production of beef and dairy cattle, sheep, goats, swine and poultry, as well as companion animals of horses, dogs, cats and others. (32/0)

AGS:118 | 3

### **Animal Science**

Designed for high school seniors and college freshmen as an overview of the animal science industry. Explores breeds, basic management and farm animal marketing. Topics include beef and dairy cattle, companion animals, horses, poultry, sheep and swine. (40/16)

## **ART: ART**

\*ART:101 | 3

### **Art Appreciation**

A general survey course exploring the elements of art and many artists, their lives, cultures and media. Field trip required. (48/0)

\*ART:203 | 3

### **Art History I**

The study of the visual arts in Western civilization including painting, sculpture and architecture from prehistoric times through the Gothic period. (48/0)

\*ART:204 | 3

### **Art History II**

The study of the visual arts in Western civilization including painting, sculpture, architecture and photography from the Renaissance through the 20th century. (48/0)

## **AUT: Automotive Technology**

AUT:102 | 1

### **Introduction to Automotive Technology**

Introduces safety practices, an overview of systems that are a part of the Automotive Technology curriculum and shop tools and diagnostic equipment that will be used throughout the program. (0/32)

AUT:123 | 4

### **Applied Automotive Basics I**

Information and practical experience in the basic areas of automotive repair. Emphasizes areas expected to be taught in a high school industrial arts program. Also serves as an overview of automotive systems for students who desire an introduction to automotive repair. (32/64)

AUT:124 | 3

### **Applied Automotive Basics II**

Provides information and practical experience for the basic areas of automotive repair. Serves as an overview of automotive systems for students who desire an introduction to automotive repair. (32/32)

AUT:321 | 2

### **Automotive Transmissions**

Study of components, functions and maintenance procedures for various transmissions. (8/48)

AUT:404 | 4

### **Automotive Suspension and Steering**

The principles and functions of the components of the automobile chassis and suspension system, and practical instruction in adjusting and repairing suspension and steering systems. Emphasizes alignment and wheel balancing and employing the newest and finest equipment. (32/64) Prerequisite: AUT:102

AUT:503 | 3

### **Automotive Brake Systems**

A complete study of various braking systems employed on automobiles. Emphasizes the operation, adjustment and repair of both drum and disc types. (16/64) Prerequisite: AUT:102

AUT:829 | 4

### **Gas Engine Principles**

Introduces fundamental aspects of the gasoline engine and maintenance procedures. (24/80)

## **BCA: Business Computer Application**

\*BCA:112 | 3

### **Introduction to Data Processing**

Familiarization with fundamental business data processing applications and concepts. Presents a broad view of data processing topics and emphasizes the impact of the computer on our society. Students learn the concepts of magnetic storage media, file organization, data representation, communication, input/output, operating system software, telecommunications and program development. While significant class time is devoted to understanding concepts, students receive practical application experience in the labs. (40/16)

\*BCA:212 | 3

### **Introduction to Computer Business Applications**

An overview of application software concepts through hands-on exercises. Experience is gained by working through progressively challenging exercises using business application software. Stresses practical use of spreadsheet, word processing, database, graphic programs and integration. Covers purchasing guidelines for software selection and the impact of hardware systems. (16/64)

## **BIO: Biology**

\*BIO:112 | 4

### **General Biology I**

A study of unifying concepts of modern biology with an emphasis on the organization and operation of living systems: metabolism, growth, development, reproduction and inheritance. (48/32)

\*BIO:113 | 4

### **General Biology II**

A survey of the form and function of Prokaryotic organisms and Eukaryotic organisms, including a study of their ecological interrelationships and discussions of current environmental issues. (48/32)

\*BIO:168 | 4

### Human Anatomy and Physiology I

Introduces the structure and function of the human body, beginning with a study of the molecular, cellular and tissue levels, and continuing with emphasis on selected organ systems. Studies basic principles of human anatomy and physiology based on laboratory experimentation in microscopy and dissection, with emphasis on the atomic, cellular, tissue and organ system levels of organization. (48/32) Prerequisites: One year high school biology/chemistry or college equivalent with a minimum grade of C-; or a minimum grade of C- in BIO:112, BIO:157, or CHM:110

\*BIO:173 | 4

### Human Anatomy and Physiology II

Continued study of the structure and function of the human body as introduced by BIO:168, with review of the molecular, cellular, and tissue levels of organization and emphasis on selected organ systems, as well as basic principles of human anatomy and physiology based on laboratory experimentation in microscopy and dissection with emphasis on the organ system levels of organization. (48/32) Prerequisite: A minimum grade of C- in BIO:168

## BUS: Business

\*BUS:103 | 4

### Introduction to Business

Exposes students to the role of the bookkeeper, manager and junior accountant in relation to the many facets of the business world, including the economic system, marketing functions such as sales, production and finance and types of business organizations. (64/0)

\*BUS:130 | 3

### Introduction to Entrepreneurship

A survey course designed to orient students toward the multi-dimensions of a career in entrepreneurship. Explores entrepreneurial qualities, assessment of various funding sources, strategic planning for entrepreneurial ventures and legal and contemporary business environment issues. (48/0)

\*BUS:185 | 3

### Business Law I

Presents material essential to an understanding of law as it applies to the following topics: history, crimes and torts, contract law and sales (UCC). (48/0)

## CAD: Computer Aided Drafting

CAD:172 | 2

### Introduction to CAD: AutoCAD

Introduces various drafting techniques available through computer-aided design technology. Students study problems and prepare design station activities that apply to their individual programs of study. (16/32)

## CHM: Chemistry

\*CHM:110 | 3

### Introduction to Chemistry

An introduction to general and inorganic chemistry. One unit of organic chemistry is included. Topics covered are measurements, structure of the atom, elements, compounds, chemical equations, stoichiometry, acids and bases and nuclear chemistry. (48/0)

\*CHM:111 | 1

### Introduction to Chemistry Lab

A laboratory experience that supports and applies basic concepts of inorganic organic and biochemistry, using scientific methods of inquiry. (0/32) Pre-/corequisite: CHM:110

## CIS: Computer Programming

CIS:125 | 3

### Introduction to Programming Logic with Language

Introduces programming using Visual Basic. Net. Provides experience and practice in designing and writing a variety of programs utilizing Visual Basic.Net which help develop a deeper understanding and appreciation of the computer, its capabilities and limitations and of application software. (32/32) Pre-/corequisite: MAT:063 or qualifying placement score

CIS:142 | 4

### Computer Science

The fundamentals of the C++ programming language using a console, Graphical User Interface (GUI), animation environment. Simple gaming applications are developed, debugged, and modified to reinforce concepts of the C++ programming language. The object-oriented programming foundation established prepares students for a course in data structures. (32/64) Prerequisite: CIS:125 or CIS:197

CIS:197 | 3

### Fundamentals of Web Design

Introduces the basics of web page creation and maintenance. Uses hypertext markup language in the creation of web pages. Stresses good screen layout and design principles, includes use of application software to create web pages, explores enhancements and extensions of HTML and incorporates scripting in creating web pages. (24/48)

CIS:450 | 3

### Project Lead the Way® – Computer Science Principles

CSD implements the College Board's CS Principles framework. Using Python® as a primary tool and incorporating multiple platforms and languages for computation, this course aims to develop computational thinking, generate excitement about career paths that utilize computing and introduce professional tools that foster creativity and collaboration. Projects and problems include app development, visualization of data, cybersecurity and simulation. The course aligns with CSTA 3B standards. (16/64) Pre-/corequisite: High school algebra I

## COM: Communication

COM:723 | 3

### Workplace Communications

Opportunity to develop as competent employees through instruction and practical application of communication skills expected in the work environment. Emphasizes listening, speaking and writing skills as they relate to the career needs of the students. Course is geared primarily to students in

Association of Applied Science programs. Previous or current enrollment in SDV:200 or computer literacy is recommended. (48/0)

## CON: Construction

CON:100 | 1

### Basic Carpentry

A residential-based carpentry program where students receive hands-on training in the proper use and maintenance of a typical construction hand and power tools. (0/32) Pre-/corequisite: Proof of First Aid/CPR certification

CON:111 | 2

### Basic Drafting

Fundamental knowledge of the principles of drafting equipment, lettering, freehand orthographic and pictorial sketching and orthographic instrument drawing. Includes lettering, dimensioning, symbols, conventions, sections and details. (16/32)

CON:113 | 2

### Construction Printreading

Stresses principles of interpreting trade blueprints and reading of specifications basic to all aspects of the trades. Deals with types of lines, development and arrangement of views, dimensioning practices and invisible edges. Incorporates practical problems from prints suited to the particular trade. (16/32)

CON:209 | 1

### Introduction to Drywall

Designed for students in a residential-based carpentry program to receive hands-on training in the field of drywall (gypsum) installation. (0/32) Pre-/corequisite: Proof of First Aid/CPR certification

CON:336 | 1

### Care/Use of Hand/Power Tools

Designed for students in a residential-based carpentry program to receive hands-on training in the proper use and maintenance of typical construction hand and power tools. (0/32) Pre-/corequisite: Proof of First Aid/CPR certification

CON:369 | 1

### Cabinet Installation

Designed for students in a residential-based

carpentry program to receive hands-on training in the field of kitchen cabinet and bathroom vanity installation as well as the installation of counter tops and vanity tops. (0/32) Pre-/corequisite: Proof of First Aid/CPR certification

CON:370 | 1

### Interior Doors and Hardware

Designed for students in a residential-based carpentry program to receive hands-on training in the field of interior door installation, including pre-hung, bi-fold and pocket door frames. (0/32) Pre-/corequisite: Proof of First Aid/CPR certification

CON:384 | 5

### Cabinet Making

Designed to provide basic skills and knowledge to construct and finish kitchen cabinets and casework. (32/96)

CON:388 | 1.5

### Basic Construction Skills

Basic background to the construction industry. Understanding is gained of the skills, knowledge and abilities required to be a successful crafts person. Incorporates an in-depth review of OSHA Safety Rules designed to familiarize students with National Safety Standards for residential and commercial construction (16/16)

CON:391 | 3

### Construction II

Designed for those with little or no experience in residential construction procedures. Covers aspects of residential construction in both the laboratory and classroom. Students gain knowledge of the construction trade, materials used, hand and power tools, floor systems, wall and ceiling framing, roof framing and window and exterior doors. (48/0) Prerequisite: Proof of First Aid/CPR certification

CON:395 | 8.5

### Construction Lab II

Emphasizes construction of residential and/or small commercial type structures. Provides practical instruction and hands-on learning in safe/proper tool usage, floor systems, wall, ceiling and roof framing, roof finishing and windows and exterior doors installation. Involvement in realistic practical construction projects will influence scheduling of these activities as well as

necessitate inclusion of experiences related to the occupation. (0/272) Pre-/corequisite: Proof of First Aid/CPR certification

## DSL: Diesel

DSL:353 | 4

### Diesel Engine Principles

The historical development of the diesel engine. Theory of operation and designs of compression ignition engines, combustion chamber shapes and cooling and lubrication systems are examined in the classroom. (24/80)

DSL:632 | 2

### Brakes - Diesel

Information regarding hydraulic brakes, air brakes, parking brakes, reconditioning and refinishing. (8/48)

## ECE: Early Childhood Education

ECE:133 | 3

### Child Health, Safety, and Nutrition

Addresses the interrelationship of health, safety and nutrition to the growth and development of young children. Based on the preventive health concept, emphasis given to nutrient composition of foods, the relationship of nutrients to growth, motor, cognitive and emotional development. Includes conditions affecting children's health, management of acute and chronic illness and general safety principles in planning the young child's environment. (48/0)

ECE:158 | 3

### Early Childhood Curriculum I

Focuses on the development, implementation and assessment of appropriate environments and curricula for young children ages three through eight. Students prepare to utilize developmentally appropriate practices in a context of family and culturally sensitive care. Emphasis is on understanding children's developmental stages and developing appropriate learning opportunities, interactions and environments in the areas of dramatic play, art, music, fine and gross motor play. (48/0)



ECE:170 | 3

**Child Growth and Development**

Reviews typical and atypical development of children from conception to adolescence in all developmental domains. Examines interactions between child, family and society within a variety of community and cultural contexts. Examines theories and evidence-based practices associated with understanding and supporting young children. (48/0)

ECE:221 | 3

**Infant/Toddler Care and Education**

The growth and development of infants and toddlers and issues critical to their care. Emphasizes development, health and safety, developmentally appropriate practices, curriculum and environments. Includes theoretical perspectives, trends in American families, infant/toddler programs and research implication. (48/0)

**ECN: Economics**

\*ECN:110 | 3

**Introduction to Economics**

Presents material that is both macroeconomic and microeconomic in nature. Primarily a survey course to introduce students to how our economic system works. (48/0)

\*ECN:120 | 3

**Principles of Macroeconomics**

Presents material essential to an understanding of the economic forces at work in our global society: the market system, supply and demand, gross national product, gross domestic product, the banking system, fiscal and monetary policy, international trade and various economic systems employed throughout the world. (48/0)

**EGT: Engineering Technology**

EGT:400 | 3

**Project Lead the Way® - Introduction to Engineering Design**

Focuses on design process and application. Experience is gained through hands-on projects involving application of engineering standards and documentation of work in

engineering notebooks. Industry-standard 3D modeling software is utilized to assist in designing solutions to proposed problems. (16/64) Corequisite: High school Algebra I or equivalent

EGT:410 | 3

**Project Lead the Way® – Principles of Engineering**

Develops engineering problem-solving skills. Knowledge of research and design is applied to create solutions to various challenges, document work and communicate solutions. Topics include mechanisms, energy, statics, materials and kinematics. (16/64) Prerequisite: EGT:400 recommended but not required

EGT:420 | 3

**Project Lead the Way® – Digital Electronics**

Introduction to the process of combinational and sequential logic design, engineering standards and technical documentation. (16/64) Prerequisite: EGT:400 and EGT:410 recommended but not required

EGT:450 | 3

**Project Lead the Way® – Computer Integrated Manufacturing**

Focuses on the history of manufacturing, robotics and automation, manufacturing processes, computer modeling, manufacturing equipment and flexible manufacturing systems. Computer modeling skills are enhanced by applying principles of robotics and manufacturing automation to the creation of three-dimensional designs. (16/64) Prerequisite: EGT:400 or EGT:410 recommended but not required

EGT:460 | 3

**Project Lead the Way® – Civil Engineering and Architecture**

Introduction of the various aspects of civil engineering and architecture. Knowledge is applied to the design and development of residential and commercial properties and structures. Major course projects are designed using 3D software to design and document solutions for major projects. Solutions are presented to peers and professional engineers and architects. (16/64) Prerequisite: EGT:400 recommended but not required

EGT:470 | 3

**Project Lead the Way® – Engineering Design and Development**

A research course requiring the formulation of a solution to an open-ended engineering question. Skills gained in other Project Lead the Way courses and from experience with a community mentor are utilized throughout the process. Requires written reports on engineering application, defense of reports and submission to a panel of outside reviewers. (16/64) Prerequisites: EGT:400, EGT:410

**ENG: English Composition**

\*\*ENG:021 | 3

**Foundations of Writing**

A writing course that develops fluency and confidence in communication and clarity in thinking through writer's notebooks, expository writing, analytical reading and listening. Structured assignments are used to explore the writing process, exercising higher order thinking skills needed to develop advanced critical thinking, for reasoning and writing across the curriculum. (48/0) Prerequisite: Qualifying placement score or a minimum grade of C- in ENG:045

\*\*ENG:045 | 3

**Communication through Reading and Writing I**

Developed for students who have experienced difficulty in reading, writing and study skills. Prepares students for more advanced communication classes and for higher level college course work. (48/0)

\*ENG:105 | 3

**Composition I**

Preparation for the types of communication and thought essential to academic and working-world success. The course focuses on writing as a process and is intended to help students identify and refine their own personal writing. (48/0) Prerequisite: A minimum grade of C- in ENG:021 or qualifying placement score ENG:021

\*ENG:106 | 3

**Composition II**

This research writing course analyzes writing

as a process with emphasis on developing persuasive, evaluative, analytical, investigative, research, and documentation skills. (48/0)  
Prerequisite: A minimum grade of C- in ENG:105 or an equivalent college-level course in composition

## ENV: Environmental Science

\*ENV:115 | 3

### Environmental Science

Studies the biological basis of environmental science and human influence on biosphere dynamics. Emphasis on scientific principles, inter-relationships among resources, pollution and environmental degradation, soil and water conservation and the impact that politics, economics, ethics and world view have on the future direction for life on the planet. (48/0)

\*ENV:116 | 1

### Environmental Science Lab

Laboratory experience that supports and applies basic concepts of resource management, soil and water conservation, general ecological dynamics and scientific principles to the inter-relationships among resources, the environment and human interactions. (0/32) Pre-/corequisite: ENV:115

\*ENV:140 | 4

### Natural Resource Conservation

The general principles of natural resource conservation with an emphasis on local conservation organizations, indigenous resources and typical management activities. Special consideration is given to environmental preservation, recreational functions, conflicting utilization policies and employment opportunities in natural resource conservation and management. (48/32)

## FIN: Finance

\*FIN:122 | 4

### Personal Finance

An overview of personal and family financial planning emphasizing personal financial record keeping, planning spending, tax planning, consumer credit, making buying decisions, purchasing insurance, selecting investments and retirement and estate

planning. (64/0)

## HIS: History

\*HIS:131 | 3

### World Civilization I

A survey course in world civilization from pre-history to 1500 which examines six major civilizations: Middle-East, Indian, Chinese, European, African and American. Cultural components such as religion and art are integrated with political and economic history. Connections between civilizations will be considered. (48/0)

\*HIS:132 | 3

### World Civilization II

A survey course in world civilization from 1500 to modern times examining the four major civilizations: Middle East, Indian, Chinese and European. Focuses on the emergence of modern civilization including the Age of Discovery, the Protestant Reformation, Age of Enlightenment and the rise of modern cultures in Asia, Europe, Africa and the Americas. Covers the rise of nationalism, industrialization, colonialism, liberalism, democracy, socialism and the great changes brought about by the World Wars, the Great Depression, fascism, communism, the end of colonialism and the Cold War's end. (48/0)

\*HIS:151 | 3

### U.S. History To 1877

A survey of the emergence of the United States from the colonial era to 1877 including colonization, the Revolutionary period, the early Republic, the Jacksonian era, the Civil War and Reconstruction. Political, economic and social themes will be considered. (48/0)

\*HIS:152 | 3

### U.S. History Since 1877

A survey of American life from 1877 to the present including the Age of Industrialism, the Progressive Era, World War I, developments between the wars, World War II and postwar foreign and domestic issues. (48/0)

## HIT: Health Information Technology

HIT:140 | 4

### Medical Terminology

The study of medical terminology as the language of medicine with emphasis on word analysis, construction of definitions, pronunciation and spelling of medical terms. (64/0)

## HSC: Health Science

HSC:110 | 3

### Introduction to Health Occupations

Orientation to the institutions that comprise our healthcare system. Explores the health care system and the ethical, legal and safety issues influencing and regulating health practice and maintenance. Explores health career pathways in therapeutic, diagnostic, health informatics and support services. (48/0)

HSC:172 | 3

### Nurse Aide

This 80-hour course meets the training of The Omnibus Budget Reconciliation Act of 1987 (OBRA) for aides working in nursing facilities (NF) and skilled nursing facilities (SNF). Emphasizes the achieving of a basic level of knowledge and demonstrating skills to provide safe, effective resident/client care. Students must be 16 years of age to attend clinical. (30/15 and 35 clinical hours) Prerequisite: Accuplacer reading score of 44 or ACT score of 15

## IND: Industrial Technology

IND:233 | 1

### Introduction to Hydraulics/Pneumatics

An overview of pneumatic and hydraulic circuits and how they are designed to perform basic tasks. Introduces hydraulic and pneumatic power sources, control valves, actuators and the basic layout of hydraulic and pneumatic prints. (8/16)

## LIT: Literature

\*LIT:101 | 3

### Introduction to Literature

Focuses on the art of fiction, drama, and poetry. Students closely examine literature that challenges and enlightens. Engagement with these works stimulate independent, analytical thinking that is shared through writing and discussion. (48/0) Prerequisite: ENG:105 with a minimum grade of C- or an equivalent composition course at another college or university with a minimum grade of C-

\*LIT:186 | 3

### Cultures Through Literature

Focuses on the reflection of various world cultures in literature and its relation to enduring human issues. Includes discussion and writing of selected readings chosen from differing literacy forms and reflective and analytical writing in response to these readings. (48/0) Prerequisite: ENG:105 with a minimum grade of C- or an equivalent composition course at another college or university with a minimum grade of C-

## MAT: Mathematics

\*MAT:110 | 3

### Math for Liberal Arts

A survey of mathematical ideas emphasizing mathematical techniques for problem solving. Includes set theory, logic, algebra, graphs, counting techniques, probability, statistics and consumer math. (48/0) Prerequisite: A minimum grade of C- in MAT:063 or MAT:744 or qualifying placement score

\*MAT:120 | 3

### College Algebra

Assists in formalizing previously developed algebraic concepts and demonstrates further concepts and techniques necessary for subsequent study in mathematics. Topics include algebraic operations, exponents, radicals, logarithms, solution of linear and quadratic equations, systems of equations, determinants, complex numbers, inverse functions, graphing and other topics of advanced algebra. (48/0) Prerequisite: A minimum grade of C- in MAT:102 or MAT:747 or qualifying placement score

\*MAT:128 | 4

### Precalculus

Prepares students for calculus. Precalculus studies the nature of elementary functions and their role in mathematics by integrating a combination of algebra and trigonometry. Topics include the real number system, functions, polynomials and rational functions, exponential and logarithmic functions, trigonometric functions, trigonometric identities, analytic trigonometry, systems of equations and matrices. (64/0) Prerequisite: A minimum grade of C- in MAT:102 or MAT:747 or qualifying placement score

\*MAT:156 | 3

### Statistics

Introduces the basic methods of statistical reasoning to help develop the ability to summarize data, interpret data and draw conclusions based on the data. (48/0) Prerequisite: A minimum grade of C- in MAT:102 or MAT:747 or qualifying placement score

\*MAT:210 | 4

### Calculus I

Students gain an understanding of calculus and analytical geometry, differentiation and applications. (64/0) Prerequisites: A minimum grade of C- in MAT:120 and MAT:130 or a minimum grade of C- in MAT:128 or qualifying placement score

\*MAT:216 | 4

### Calculus II

The second in the calculus sequence. Students gain an understanding of integral calculus and further their knowledge of analytical geometry. Emphasizes integration, inverse functions and applications of the integral. (64/0) Prerequisite: A minimum grade of C- in MAT:210

MAT:744 | 4

### Technical Math

Introduces selected topics from algebra and trigonometry with everyday applications to the technical areas. Some topics presented include the solution of linear and quadratic equations, trigonometric functions, vectors, graphing and equations. (64/0) Prerequisite: A minimum grade of C- in MAT:063, MAT:773 or qualifying placement score

## MFG: Manufacturing

MFG:126 | 2

### MSSC Quality Practices and Measurement

Teaches students to: participate in periodic internal quality audit activities, check calibration of gages and other data collection equipment, suggest continuous improvements, inspect materials and product/process at all stages to ensure they meet specifications, document the results of quality tests, communicate quality problems, take corrective actions to restore or maintain quality, record process outcomes and trends, identify fundamentals of blueprint reading, use common measurement systems and precision measurement tools. (32/0)

MFG:127 | 1.5

### Manufacturing Print Reading Module II

Builds on skills developed MFG:126: Dealing with orthographic projection of inclined planes, foreshortened views, angular dimensions, slots and grooves, reference dimensions, blind holes, chamfers, keyways and keyseats, counterbores and countersinks, angular hole locations, castings, finish symbols, finish allowance, fillets and rounds, clearance holes, half-views, starting dimensions, surface roughness, bosses and pads, slotted holes, tapers, limits, partial enlarged views, heat treat notes, sectional views, annular grooves, wall thickness calculations, spot facing, revolved sections, broken out sections, removed sections and offset sections. This course begins to build basic blueprint drafting skills. (24/0)

MFG:161 | 2

### Introduction to Precision Measurement and Inspection Fundamentals

Stresses the principles and proper use of precision inspection tooling in a manufacturing environment. Consistent measurement and inspection maintains standardization and ensures that out-of-tolerance parts do not reach customers. Students learn to describe the use and care of common inspection instruments and gauges used in the production environment, and effectively use them. Deals with tools such as different types of micrometers, calipers, the Vernier scale, plug and pin gauges, bore and small hole gauges, optical comparators, gauge



blocks, height gauges, thread gauges, and other tools used in industry. (32/0)

MFG:187 | 1

### **Plant Safety**

Discusses safety in a manufacturing workplace. Develops skills to work in the industrial environment. Teaches basic safety for chemical, health hazards, and tool safety. (12/8)

MFG:241 | 3

### **Machine Operations I**

An introductory machining course presenting basic machining operations. Students will perform basic operations on lathes, horizontal and vertical axis milling machines, drilling machines, saws, various types of grinders and precision measuring equipment. (32/32) Pre-/corequisite: MFG:187

MFG:293 | 1

### **Introduction to Basic CNC Mill Operations**

Introduces proper use of 3-axis CNC (computer numerical controlled) mills and machining centers. Students will safely set tool and fixture offsets as well as use verified programs and selected tooling to complete part projects on CNC machining centers. (12/8) Prerequisites must be passed with a minimum grade of C-. Pre-/corequisites: MFG:161, MFG:187

MFG:295 | 1

### **Introduction to Basic CNC Lathe Operations**

Introduces proper use of 2-axis CNC (computer numerical controlled) lathes and turning centers. Students will safely set tool and fixture offsets as well as use verified programs and selected tooling to complete part projects on CNC turning centers. (12/8) Prerequisites must be passed with a minimum grade of C-. Pre-/corequisites: MFG:161, MFG:187

MFG:305 | 2

### **CNC Operations**

Introduces students with no prior CNC or machining experience to the principles of a CNC machine. Students will obtain valuable experience in safe operation of CNC equipment in order to learn what a CNC machine can do and its purpose in manufacturing. (16/32)

MFG:344 | 1

### **Introduction to CNC Lathe Programming**

Introduces writing programming code for CNC (computer numerical controlled) lathes and turning centers. Students write and verify EIA and ISO G and M code programs for 2-axis CNC turning centers. (16/0) Prerequisites must be passed with a minimum grade of C-. Pre-/corequisites: MFG:127, MFG:161, MFG:187, MFG:295

MFG:345 | 1

### **Introduction to CNC Mill Programming**

Introduces writing programming code for CNC (computer numerical controlled) mills and machining centers. Students write and verify EIA and ISO G and M code programs for 3-axis CNC machining centers. (16/0) Prerequisites must be passed with a minimum grade of C-. Pre-/corequisites: MFG:127, MFG:161, MFG:187, MFG:293

MFG:529 | 2

### **MSSC Manufacturing Processes and Production**

Teaches students to identify customer needs, determine resources available for the production process, set up equipment for the production process, set team production goals, make job assignments, coordinate work flow with team members and other work groups, communicate production and material requirements and product specifications, perform and monitor the processes to make the products, document product and process compliance with customer requirements and prepare final product for shipping or distribution. (32/0)

## **MGT: Management**

\*MGT:102 | 4

### **Principles of Management**

Studies basic factors in the work environment that affect managerial decision making. Emphasizes the four functions of management with discussion of managerial ethics and social responsibility. (64/0)

## **MKT: Marketing**

\*MKT:110 | 3

### **Principles of Marketing**

Covers the broad concept of marketing including product, distribution, promotion and price decisions. Includes discussion on the buyer's role, social issues involved in the marketing process, environmental problems, issues and the philosophy of marketing management. (48/0)

MKT:183 | 3

### **Customer Service Strategies**

Introduces customer service concepts, skills and techniques necessary to provide best practices to internal and external customers. These skills are vital for every job since identifying and satisfying customer needs are essential to all business organizations. (48/0)

## **PHI: Philosophy**

\*PHI:101 | 3

### **Introduction to Philosophy**

Instruction in and discussion of classic philosophical theories and systems with particular emphasis on the practical applications of philosophic thought. (48/0)

\*PHI:105 | 3

### **Introduction to Ethics**

A systematic study of theories of moral judgment and decision, conduct, values and responsibility. Application of ethical concepts and principles are provided through a critical examination of contemporary issues such as bioethics, professional ethics and the environment. No prerequisites, but PHI:101 is recommended. (48/0)

## **PNN: Practical Nursing**

PNN:200 | 1

### **Dosage Calculations**

A review of fractions and decimals, conversions of metric, apothecary and household units and computations of drug dosages. (16/0) Prerequisite: MAT:053, MAT:772, or qualifying placement score

PNN:270 | 2

### **Introduction to Nutrition**

Emphasizes a practical knowledge of good nutrition and some knowledge of diet therapy. Includes a background of adequate and accurate information on basic nutritional needs of the body. (32/0)

## **PSY: Psychology**

\*PSY:111 | 3

### **Introduction to Psychology**

A survey of psychology including theoretical and experimental findings and applications from areas such as physiological learning, memory, personality, social, abnormal and therapy and health psychology. (48/0)

\*PSY:112 | 3

### **Psychology of Human Relations**

Covers all types of interactions among people: their conflicts, cooperative efforts, and group relationships. It is the study of those beliefs, attitudes and behaviors that cause interpersonal conflict in our personal lives and in work-related situations. (48/0)

\*PSY:121 | 3

### **Developmental Psychology**

An introductory course in human growth and development throughout the life span. The developmental stages include prenatal, infancy/toddlerhood, early and middle childhood, adolescence, early, middle and late adulthood and death, dying and bereavement. Human development looks at the physical, cognitive, social and emotional aspects of development at each developmental stage. Embedded in each stage are the theories and theorists of each aspect of development. (48/0)

\*PSY:222 | 3

### **Child Psychology**

A study of the growth and development of the individual from conception through late childhood. Emphasis is placed on the physical, cognitive, emotional and social development influences relative to our environment, individual differences and society. Theoretical perspectives, historical influences and research implications are included. (48/0)

## **REL: Religion**

\*REL:105 | 3

### **Introduction to Religion**

Topical introduction to the study of religion, exploring the human search for the Sacred, Holy or Ultimate. Through descriptions and analysis of the dimensions of religious expression common to all religious traditions, students develop an understanding of the phenomena of religion using examples from different religious traditions as well as from literature and philosophy. (48/0)

## **SDV: Student Development**

SDV:135 | 1

### **Job Seeking Skills**

Develops skills and materials necessary to obtain employment. (16/0)

SDV:179 | 3

### **The College Experience**

College is a new and different experience for many students. This course conveys expectations of the college culture to first-time college students. It provides an examination of the student's learning styles, familiarization with college resources and support services, review of important study and test taking skills, development of goal setting and decision making skills, and enhancement of personal relationship skills that relate directly to success in college and beyond. (48/0) Prerequisite: Senior-standing in high school or above

## **SOC: Sociology**

\*SOC:110 | 3

### **Introduction to Sociology**

The basic sociological principles and basic processes of group behavior. Includes the study of social interaction, family and group life, social institutions, status and role, culture, population, structure and change and community structures (both urban and rural). (48/0)

\*SOC:120 | 3

### **Marriage and Family**

Approaches marriage and the family

or alternatives, from a multi-disciplined perspective to search for our humanness, our relationships and our potentials. The significance and complexities of relationships encourage personal knowledge, reflection and intellectual insight. (48/0)

## **SPC: Speech**

\*SPC:112 | 3

### **Public Speaking**

An introductory course emphasizing actual speaking experiences with practice in choosing subjects, analyzing audiences and preparing and delivering a variety of extemporaneous speeches. Provides opportunity for skill development in listening and group discussion. (48/0)

## **WEL: Welding**

WEL:110 | 2

### **Welding Blueprint Reading**

Introduces the concept and practice of blueprint interpretation as needed by welders in an industrial setting. Emphasis is on the basics of interpretation and application in specific situations. (16/32) Pre-/corequisite: WEL:228

WEL:119 | 1

### **Maintenance Welding**

Basic welding techniques, brazing, soldering and types of welds needed in the industrial maintenance field, including the use of oxyacetylene and electric welding equipment. (0/32)

WEL:192 | 4

### **Gas Tungsten Arc Welding**

Introduces gas tungsten arc welding (TIG) and other related processes. Studies topics such as process variation, welding in various positions, principle of operation, shielding gases and filler rods. Stresses safety and practical application of these welding processes. (16/96) Pre-/corequisites: WEL:110, WEL:228

WEL:228 | 1

### **Introduction to Welding, Safety, and Health of Welders: SENSE 1**

Orientation to the welding profession covering basics of safety and health in the welding

profession. This course aligns to SENSE Level 1, Module 1 and Module 2: Key Indicators 1-6. (16/0)

WEL:329 | 1

### **Shop Welding**

Electric arc and oxyacetylene welding used in the repair of farm equipment. Horizontal lap, butt and "t" welds are made using both electric arc and oxyacetylene welders. Practices use of the cutting torch and brazing. (8/16)

WEL:330 | 1

### **Welding Fundamentals**

Use of oxyacetylene and electric arc welding equipment to make different types of welds required to repair or fabricate items. Experience in various techniques of welding, brazing and soldering. (0/32)

WEL:427 | 3

### **Basic Arc Welding (SMAW)**

The operation of AC transformer and DC motor generation arc welding machines. Studies welding heats, polarities and electrodes for use in joining various metal alloys by the arc welding process. Once capable of running beads, students will create 1G and 1F groove and fillet welds to D1.1 AWS code. Emphasizes safety procedures throughout the course in the use of tools and equipment. (16/64)

Pre-/corequisites: WEL:110, WEL:228

WEL:433 | 3.5

### **Basic Gas Metal Arc Welding (GMAW)**

An introductory class studying Short Circuit Gas Metal Arc Welding (GMAW) and other related processes. Studies topics such as process variation, welding in various positions, principle of operation, shielding gases and wires. Stresses safety and practical application of these welding processes. (16/80)

Pre-/corequisites: WEL:110, WEL:228

WEL:434 | 1.5

### **Flame/Plasma Cutting Fundamentals**

The history and principles of material cutting and the nomenclature of the equipment. Practices procedures such as cutting, beveling plates and scarfing plates. (8/32)

Pre-/corequisite: WEL:228