

COURSE DESCRIPTIONS

The following pages provide descriptions for all academic courses offered by Inver Hills Community College. Course descriptions are organized in alphabetical order by discipline. Each description includes a course number and title, number of credits, number of classroom hours per week, number of lab, studio or clinical hours (if any) per week and code for the semester(s) the course is offered.

COURSE DESCRIPTION GUIDE

Course Number System

Courses numbered 1000 through 2999 in the following disciplines generally meet baccalaureate degree requirements at four-year colleges and universities:

Anthropology, art, biology, career development, chemistry, computer science, economics, English, French, geography, geology, German, health, history, humanities, interdisciplinary studies, journalism, mathematics, philosophy, physical education, physics, political science, psychology, sociology, Spanish, speech, theater.

Courses numbered 1000 through 2999 in the career programs areas (those disciplines not listed above) are designed primarily to meet occupational objectives. However, some of these credits may transfer to four-year colleges and universities. Inver Hills counselors have information regarding the transferability of specific career courses to a particular institution.

Experimental courses are designated with the number 1181 or 1185. These courses often focus on topics of current or emerging interest within a particular field or discipline. Courses numbered 1181 or 1185 count as general electives but do not fulfill distribution requirements for degree programs.

Courses numbered below 1000 are preparatory courses for college-level work. Courses in this category include English, study skills, reading and math. **Courses numbered below 1000 do not fulfill graduation requirements for degree programs, but the credits are counted for financial aid eligibility.** The courses do figure into GPA (grade-point average). Assessment tests in writing, reading, and mathematics are used to determine whether these courses are needed.

The numbers in parentheses (MnTC #) that follow some course titles indicate which Minnesota Transfer Curriculum Goals are satisfied through successful completion of that course. Refer to page 39 for further details.

At the end of each course description is a code with the letter “F” for fall semester, “S” for spring semester, or “Su” for Summer term. This designation indicates the semester(s) a course will definitely be offered, though some courses may also be scheduled for additional terms. The letter “V” is used when the course is offered various terms and “AY” indicates the course is only offered alternate years.

ACCOUNTING

About the Accounting Department

Coursework and the Associate of Science degree prepare students for paraprofessional careers and for transfer to four-year institutions. Students

also may take Metropolitan State upper division accounting classes as part of a cosponsored program. For degree requirements and description, see the Programs of Study section of this catalog. Course descriptions for ACCT courses appear below.

Course descriptions

ACCT 1000 Accounting Basics

3 credits; 3 classroom hours/week; 0 lab hours/week

Introduces basic accounting vocabulary and skills in gathering, assembling, and reporting business financial data. The course will stress accounting debits and credits, journal entries, maintenance of ledgers, trial balances, and adjusting and closing ledger accounts prior to financial statement preparation. Preparation of financial statements will also be covered. (Not intended to satisfy tool area requirements for pre-business 4-year majors.) **F, S, Su**

ACCT 1001 Basic Accounting Skills

1 credit; 1 classroom hours/week; 0 lab hours/week

Introduces students to the accounting cycle using traditional journal entries, the general ledger and T-accounts. This course is intended for students who require knowledge of the basic accounting procedures, including the rules of debit/credit, prior to enrolling in a more advanced accounting course. No credit will be awarded for this class if ACCT 1000 has been successfully completed. **F, S, Su**

ACCT 2101 Financial Accounting

4 credits; 4 classroom hours/week; 0 lab hours/week

Introduces financial statements as used in decision-making, primarily by creditors and investors. The focus is on what the financial statements reveal about the credit-worthiness and financial performance of companies organized as corporations. Students will analyze and interpret financial statements. Topics include: Preparation and analysis of financial statements, cash, receivables, inventory, fixed assets, liabilities, stockholders equity. Meets lower-division transfer requirements for accounting and business administration majors at most 4-year institutions. Recommendation: Some students find it helpful to enroll in Accounting Basics prior to Financial Accounting. Prereq: Completion of MATH 0094 or assessment of MATH 0099 or equivalent. **F, S, Su**

ACCT 2102 Managerial Accounting

4 credits; 4 classroom hours/week; 0 lab hours/week

Works primarily with the accounting tools and techniques used to facilitate decision making by managers within the firm. Emphasize planning and control for profit-seeking enterprises. Primarily for transfer students in Business Administration and Accounting. Topics include cost behavior, manufacturing and job costing, profit analysis, budgeting, capital budgeting and profit decision making. Meets requirements for accounting and lower-division transfer business administration majors at most four-year institutions. Prereq: ACCT 2101. **F, S**

ACCT 2220 Federal Individual Income Tax Accounting

3 credits; 3 classroom hours/week; 0 lab hours/week

Introduces students to federal individual income tax law. This course is intended primarily for accounting two-year program students, or those interested in an introductory income tax course. Prereq: ACCT 1000 or ACCT 2101 or consent of instructor. **F**

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ACCT 2241 Accounting Computer Applications

3 credits; 3 classroom hours/week; 0 lab hours/week
Introduces accounting processes and analysis using electronic spreadsheet applications and a computerized general ledger system. Primarily for associate degree program accounting students. Prereq: ACCT 2101 and knowledge of spreadsheet applications in Excel. **S**

ACCOUNTING – METROPOLITAN STATE COURSES

These courses are also available at alternate Metropolitan State locations both fall and spring semesters.

ACCT 310 Financial Reporting

4 credits; 4 classroom hours/week, 0 lab hours/week
Is the first course in a two-course financial reporting sequence provides for the preparation and understanding of financial information. Topics include: financial accounting theory and practice; official pronouncements of generally accepted accounting principles (GAAP) and conceptual statements; financial statement preparation and analysis; revenue and expense recognition; accounting for assets and current liabilities; and financial statement disclosures. Prereq: ACCT 2101 and ACCT 2102 at Inver Hills. **F**

ACCT 320 Strategic Managerial Accounting

4 credits; 4 classroom hours/week, 0 lab hours/week
Provides an introduction to the role of financial and non-financial information for planning and control decisions, emphasizing the strategic role of the management accountant in the organization. It emphasizes strategy and the application of concepts and practices of management accounting on economic and non-economic decisions. Topics include: cost behavior and estimation; cost analysis for planning and control decisions including value chain analysis, target costing, quality costs, customer value measurement systems, and benchmarking; cross-functional teams; activity-based management; and capital budgeting. Prereq: ACCT 2101, ACCT 2102, and ECON 1106 all at Inver Hills. **S**

ACCT 530 Business Taxation

4 credits; 4 classroom hours/week, 0 lab hours/week
Focuses on identifying issues that affect the taxation of businesses. Four modules are covered: foundation of taxation, including types of taxes, structure of the income tax, taxpayers, and general concepts of income and deduction; business income and expenses; taxation of property transactions; and overview of corporations, S corporations, partnerships, and entity choice. Planning options are emphasized. Prereq: Metro State ACCT 310. **S**

AMERICAN SIGN LANGUAGE

About American Sign Language courses

First year of American Sign Language; introduces basic skills/techniques and deaf culture.

Course Descriptions

ASL 1101 American Sign Language I (MnTC 8)

3 credits; 3 classroom hours/week; 0 lab hours/week
Introduces American Sign Language (ASL), a visual/gestural language used by the Deaf Community. Course covers sign vocabulary, sentence structures, dialogue formats through facial expressions and body movements used in signing, and various aspects of deaf culture. Classes will be taught by a deaf instructor, so the use of voice may be limited. **F, S, Su (V)**

ASL 1102 American Sign Language II (MnTC 8)

3 credits; 3 classroom hours/week; 0 lab hours/week
Is a continuation from Introduction to American Sign Language I. This course is designed to improve the students receptive and expressive skills and increase the students awareness of Deaf Culture. Classes will be taught by a deaf instructor so the use of voice may be limited. Prereq: ASL 1101. **F, S, Su (V)**

ANTHROPOLOGY

About the Anthropology Department

Anthropology offers concepts and analytic practice toward understanding the deeply held values and assumed social structures that characterize each culture. The student finds the basis for becoming conversant with an ever broadening world. In our culturally diverse society, the awareness of difference as well as human commonality is pertinent to all professions. When going on to a four-year institution, a minor or second major in anthropology deserves consideration. An anthropological eye will enhance foreign study and travel.

Course descriptions

ANTH 1100 Introduction to Anthropology (MnTC 5, 8)

3 credits; 3 classroom hours/week; 0 lab hours/week
Introduces students to the four subfields of anthropology: archaeology, cultural anthropology, languages and culture, and physical anthropology. Students will learn to identify and apply anthropological methods of study. **F, S, Su**

ANTH 1101 Introduction to American Culture (MnTC 7, 8)

3 credits; 3 classroom hours/week; 0 lab hours/week
Explores the cultural variety that comprises the North American population. This course provides an introduction to American culture for students whose first culture is not a culture of the United States of America. Emphasis will be on those who have arrived in the past 200 years including their transitions, mobility, and interchange. Another focus will be on the effects of each succeeding immigrant group on American culture. **S**

ANTH 1110 Cultural Anthropology (MnTC 5, 8)

3 credits; 3 classroom hours/week; 0 lab hours/week
Studies customs, habits, attitudes, institutions (religion, economic, etc.) of various cultures. An attempt to define people and their place in nature. **F, S, Su**

ART

About the Art Department

Art courses range from introductory art and art history to beginning and advanced studio courses in ceramics, drawing, glass, painting, and photography. Focus is on historical, cultural, and contemporary perspectives including personal expression in the arts.

Many students take art courses as part of their liberal arts requirements while others have taken their first two years and transfer to a four-year program for art. Some students take a few courses and continue their studies for non-credit.

Inver Hills offers the Associate in Fine Art (A.F.A) degree. See the Programs of Study section of this catalog.

The art instructors actively exhibit their work both regionally and nationally and are excited about and knowledgeable in their field of expertise.

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ART 1100 Introduction to Art (MnTC 6A, 8)

3 credits; 3 classroom hours/week; 0 lab hours/week

Explores the visual arts of a wide range of peoples, cultures, styles, and movements, as well as the various cultural, religious, economic, and political factors related to their creation. Major works of painting, sculpture, architecture, and decorative arts from prehistory to the present will be studied. **F, S, Su**

ART 1106 Art History: Ancient-1400 (MnTC 6A, 8)

3 credits; 3 classroom hours/week; 0 lab hours/week

Explores major works in painting, sculpture, architecture, and decorative arts from prehistory to 1400. Both the styles and methods employed in the creation of the works of art and the cultural, religious, economic, and political philosophies that influenced them will be studied. **F, S (V)**

ART 1107 Art History: Renaissance to Present (MnTC 6A, 8)

3 credits; 3 classroom hours/week; 0 lab hours/week

Explores major works in painting, sculpture, architecture, and decorative arts from the 15th century through the present. Both the styles and methods employed in the creation of the works of art and the cultural, religious, economic, and political philosophies that influenced them will be studied. **F (V), S**

ART 1109 World Art (MnTC 6A, 8)

3 credits; 3 classroom hours/week; 0 lab hours/week

Surveys major works in painting, sculpture, architecture, calligraphy, and decorative arts from non-western cultures around the world dating from prehistory to the present. Art from Pakistan, India, Southeast Asia, China, Japan, the Islamic world, the Americas, Africa, and the Pacific will be studied. Both the styles and methods employed in the creation of the works of art and the cultural, spiritual/religious, societal, economic, and political philosophies that influenced them will be studied and students will learn to recognize and appreciate cross-cultural differences and similarities. **F, S (V)**

ART 1114 Beginning Drawing (MnTC 6A)

3 credits; 2 classroom hours/week; 3 lab hours/week

Introduces basic drawing skills emphasizing direct observation. A variety of media and papers are explored as the student engages in studio drawing, critical evaluation of aesthetics, critique sessions, slide lectures. Gallery and museum visits may be included in this course. Lab fee. **F, S**

ART 1115 Advanced Drawing (Life Drawing) (MnTC 6A)

3 credits; 2 classroom hours/week; 3 lab hours/week

Introduces students to drawing from life. Professional models are the subject for this studio class. A variety of drawing approaches to the human form include anatomy, figure/ground relationships, expression, and the model in an environmental context. A rich variety of media including dry and wet is explored. Gallery and museum visits may be included in this course. Lab fee. Prereq: ART. 1114 S

ART 1120 Design: 2 Dimensional and Color (MnTC 6A)

3 credits; 2 classroom hours/week; 3 lab hours/week

Explores basic two-dimensional perceptual and compositional theories, color theories and principles of design. Gallery and museum visits may be included in this course. Lab fee. **F**

ART 1121 Beginning Digital Photography (MnTC 6A)

3 credits; 3 classroom hours/week; 0 lab hours/week

Explores the application of the Digital Camera as a means for individual creative expression. Students will complete camera assignments, engage in critique discussions, respond to examples of historical and contemporary photography, and complete technical exercises with image editing software. Students enrolling in this course are required to supply their own digital camera. Students enrolling in this course are required to purchase image editing software as specified in the course syllabus. This software is also available for use in the computer lab at Inver Hills. Students may not receive credit for this course if credit has been awarded for ART 1131. **F, S, Su (V)**

ART 1122 Advanced Digital Photography (MnTC 6A)

3 credits; 3 classroom hours/week; 0 lab hours/week

Investigates digital photography as an Art medium utilizing it as a means for creative expression. Students enrolled in this course will study historical and contemporary ideas and practices in photography, and create work utilizing digital technology. This course will emphasize student's development of individual artistic voice applied in a portfolio of photographic images. Students enrolling in this course are required to supply their own digital camera. Students enrolling in this course are required to purchase image editing software as specified in the course syllabus. This software is also available for use in the computer lab at Inver Hills. Students may not receive credit for this course if credit has been awarded for ART 1132. Prereq: ART 1121 or ART 1131 or instructor permission. **F (V), S, Su (V)**

ART 1131 Beginning Digital Photography (with lab) (MnTC 6A)

3 credits; 2 classroom hours/week; 3 lab hours/week

Explores the application of the Digital Camera as a means for individual creative expression. Students will complete camera assignments, engage in critique discussions, respond to examples of historical and contemporary photography, and complete technical exercises with image editing software. Students enrolling in this course are required to supply their own digital camera. Students may not receive credit for this course if credit has been awarded for ART 1121. **F, S, Su (V)**

ART 1132 Advanced Digital Photography (with lab) (MnTC 6A)

3 credits; 2 classroom hours/week; 3 lab hours/week

Investigates digital photography as an Art medium utilizing it as a means for creative expression. Students enrolled in this course will study historical and contemporary ideas and practices in photography, and create work utilizing digital technology. This course will emphasize student's development of individual artistic voice applied in a portfolio of photographic images. Students enrolling in this course are required to supply their own digital camera. Students may not receive credit for this course if credit has been awarded for ART 1122. Prereq: ART 1121 or ART 1131 or Instructor permission. **F (V), S, Su (V)**

ART 1196 3-D Design (MnTC 6A)

3 credits; 2 classroom hours/week; 3 lab hours/week

Explores principles and basic formulas to approaching three-dimensional organization of space. Projects are organized as individual and group assignments. Gallery and museum visits may be included in this course. Lab fee. **S**

ART 2100 Beginning Sculpture (MnTC 6A)

3 credits; 2 classroom hours/week; 3 lab hours/week

Explores sculptural concepts, techniques, tools, materials, processes and vocabulary in order to develop skills and apply aesthetic exploration. Visits to galleries, museums, and sculpture parks may be included in this course. Studio projects may include additive process of modeling clay, subtractive

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process of carving plaster, constructive fabricating in wood, reproductive process of mold making, study of space as it applies to sculpture, and the history of traditional sculpture and contemporary sculpture. **F, S (V), Su (V)**

ART 2101 Advanced Sculpture (MnTC 6A)

3 credits; 2 classroom hours/week; 3 lab hours/week
Explores advanced sculptural concepts, techniques, and materials with an emphasis on personal aesthetic. An historical overview with an emphasis on contemporary approaches to sculpture. Visits to galleries, museums, and sculpture parks may be included in this course. Topics and projects may include site specific sculpture, installation, plaster and/or poly resin mold making, kinetic sculpture, assemblage, form, figurative sculpture, history of traditional sculpture, contemporary sculpture, and form, scale, plane, texture and space as it relates to sculpture. Prereq: ART 2100. **F (V), S, Su (V)**

ART 2200 Beginning Ceramics (MnTC 6A)

3 credits; 2 classroom hours/week; 3 lab hours/week
Explores ceramic materials and processes. An aesthetic exploration of hand building, wheel throwing, decorating, glazing, and firing techniques to create sculptured and functional forms. Gallery and museum visits may be included in this course. Lab fee. **F, S, Su**

ART 2201 Advanced Ceramics (MnTC 6A)

3 credits; 2 classroom hours/week; 3 lab hours/week
Explores advanced studies in ceramics. Additional technical and aesthetic exploration and experimentation including functional and sculptural forms, slips, under glazes, clay bodies, Raku, wood, and salt kiln firings. Gallery and museum visits may be included in this course. Lab fee. Prereq: ART 2200. **F, S, Su**

ART 2207 Beginning Glass (MnTC 6A)

3 credits; 2 classroom hours/week; 3 lab hours/week
Introduces glass working processes and techniques. An exploration of glass casting, stained glass, fusing and slumping flat glass, surface alteration, and flame work resulting in expressive forms. Gallery and museum visits may be included in this course. Lab fee. **F, S, Su**

ART 2217 Advanced Glass (MnTC 6A)

3 credits; 2 classroom hours/week; 3 lab hours/week
Explores focused areas of various glass working processes and works on developing and refining techniques. Individualizes advanced projects in at least three skill areas covered in ART 2207. Gallery and museum visits may be included in this course. Lab Fee. Prereq: ART 2207 **V**

ART 2250 Special Topics in Art (MnTC 6A)

3 credits; 3 classroom hours/week; 0 lab hours/week
Presents specific topics in art and visual culture on a rotating basis. Examples of topics include, but are not limited to, History of Photography, Art Theory and Criticism, and Contemporary Art. **V**

ART 2251 Beginning Painting (MnTC 6A)

3 credits; 2 classroom hours/week; 3 lab hours/week
Introduces basics of acrylic painting, preparation of a canvas stretcher, and color theory. A variety of contemporary painting approaches are assigned including an opportunity for personal exploration. The studio course involves active hands-on participation by the student. Gallery and museum visits may be included in this course. Lab fee. **F, S, Su**

ART 2252 Advanced Painting (MnTC 6A)

3 credits; 2 classroom hours/week; 3 lab hours/week
Expands in depth upon the basic principles of value, color theory, media, composition, technique, and personal approach. Focuses intensely in emphasis on personal creative development within the parameters of specific assignments. Gallery and museum visits may be included in this course. Lab fee. Prereq: ART 2251. **S**

ART 2281 Topics in Studio Studies

1-3 cr.
Offers a student the opportunity to explore a focused studio topic. This is a hands on class with topics varying each time the course is offered. **S**

ART 2295 Portfolio Development

3 credits; 2 classroom hours/week; 3 lab hours/week
Explores techniques on creating a portfolio for students transferring to a four-year institution in pursuit of their BFA degree and for students interested in art related careers. In addition to the portfolio, this course will cover information on art resumes, artist statements, applying for exhibitions and grants, business for artists, art related careers, installing an exhibition. Prereq: Students should have taken most of their beginning courses and 2 advanced level courses or permission from instructor. **F, S**

ART 2300 Architectural History (MnTC 6A, 8)

3 credits; 3 classroom hours/week; 0 lab hours/week
Explores major works of architecture around the world dating from prehistory to the present. An emphasis is placed on understanding the architectural significance of individual monuments in terms of the styles and methods employed in their creation as well as the various environmental, cultural, social, religious, economic, and political factors that influenced these monuments. **S**

AVIATION

About the Aviation Department

Degree options include Business Aviation and Professional Pilot. Comprehensive curriculum includes optional flight training and instruction as part of the Professional Pilot degree option. The Air Traffic Control option is discontinued at Inver Hills but can be completed at Minneapolis Community and Technical College. For degree requirements and description, see the Programs of Study section of this catalog. Course descriptions for AVIA courses appear below.

The A.S. Aviation: Professional Pilot degree program requires completion of flight training in the private through commercial flight training laboratory courses listed below, including instrument rating. Consult with admissions staff for information about requirements for flight schools that provide this training and for a list of approved Twin Cities flight schools.

Course descriptions

AVIA 1100 Introduction to Commercial Aviation

2 credits; 2 classroom hours/week; 0 lab hours/week
An introduction to civil aviation airline and general aviation. Describes the history, progress, and future of air transportation. **F**

AVIA 1102 Private Pilot Ground School

2 credits; 2 classroom hours/week; 0 lab hours/week
Introduces aircraft aerodynamics and systems, air navigation, aviation charts, and federal aviation regulations. Designed to prepare an individual for the private pilot written examination. **F, S**

AVIA 1105 Private Pilot Flight Lab

2 credits; 0 classroom hours/week; 80 lab hours/week
Flight training designed to qualify an individual for private pilot certification. Prereq: Concurrent or prior registration in AVIA 1102. **F, S**

AVIA 1110 Aviation Regulations

2 credits; 2 classroom hours/week; 0 lab hours/week
Introduces students to regulatory environment of aviation, particularly related to aviation security. Topics include a historical and current review of aviation legislation and regulation, safety legislation and implementation of safety laws, and international aviation security laws and regulations. **V**

AVIA 1120 Aviation Security

2 credits; 2 classroom hours/week; 0 lab hours/week
Introduces students to business and commercial impacts of aviation security regulations. Topics include security management for major international airports as well as smaller commercial airports. Prereq: AVIA 1110. **V**

AVIA 1190 Aviation Security Field Experience

3 credits; 1 classroom hours/week; 2 lab hours/week
Offers a supervised, practical work experience in an aviation security environment, providing an opportunity to develop and use aviation security skills. Through this work experience, students will gain additional understanding of aviation security, will apply what is learned in the classroom, will provide service to an aviation security enterprise, and will explore career options in aviation security. Prereq: AVIA 1120. **V**

AVIA 2200 Instrument Ground

3 credits; 3 classroom hours/week; 0 lab hours/week
Studies in-depth aircraft aerodynamics and systems, instrument navigation, FAA and the air traffic control system. Preparation for instrument pilot written examination. Prereq: AVIA 1105 or private pilot's license. **F, S**

AVIA 2202 Professional Pilot Flight Lab I

2 credits; hours arranged
Provides the student knowledge and experience of the commercial pilot airplane maneuvers and procedures. Prereq: Prior or concurrent registration in AVIA 2200 required. **F, S**

AVIA 2204 Commercial Ground

3 credits; 3 classroom hours/week; 0 lab hours/week
Studies in-depth advanced aircraft systems, jet and turboprop engines, aircraft weight and balance, hydraulics, de-ice, fuel and electrical systems and aviation psychology. Prepares the student for the Commercial Pilot Written Examination. **S**

AVIA 2206 Professional Pilot Flight Lab II

2 credits; hours arranged
Is a continuation of commercial and instrument flight training. This course will provide the experience and knowledge of commercial and instrument cross country flight procedures. Prereq: Prior or current registration in AVIA 2200 or 2204, completion of AVIA 2202 or consent of instructor. **F, S**

AVIA 2208 Professional Pilot Flight Lab III

2 credits; hours arranged
Provides complex airplane training and flight tests for certification as a commercial pilot with instrument rating. Emphasis will be on instrument and complex airplane proficiency. Prereq: Prior or current registration in AVIA 2200 or 2204, completion of AVIA 2206 or consent of instructor. **F, S**

AVIA 2210 Aviation Operations Management

2 credits; 2 classroom hours/week; 0 lab hours/week
Studies the operation and management of air carrier airports. Designed to provide the student with a broad understanding of the problems facing airport managers to include: financing, environmental issues, capacity, and groundside/airside facilities utilization. **V**

AVIA 2212 Aviation Law

2 credits; 2 classroom hours/week; 0 lab hours/week
Designed to give the student a broad overview of the legal problems facing aviation in both airlines and general aviation. It will address the subjects of economic regulation of domestic and international aviation, the role of the FAA and CAB, environmental problems, liability for accidents, and handling of hazardous materials. **V**

AVIA 2214 Air Transportation

2 credits; 2 classroom hours/week; 0 lab hours/week
Analyzes the development of commercial air transportation in the U.S. Emphasizes air carrier operations with primary focus on the development of economic and operating regulations, economic characteristics, operating constraints, and public policy. **V**

AVIA 2218 Human Factors in Flight Operations

2 credits; 2 classroom hours/week; 0 lab hours/week
Examines case histories and analysis of common causes, errors, and prevention of aircraft accidents and incidents. Psychological, physiological, mechanical, and manufacture implications. **S**

BIOLOGY

About the Biology Department

Specialized and general laboratory courses appropriate to two- and four-year degrees in the life sciences and health science, including nursing, as well as specially focused courses for students interested in science and social issues.

Course descriptions

BIOL 1001 Humans in the Ecosystem: Renewable Energy (MnTC 10)

2 credits; 1 classroom hours/week; 2 lab hours/week
Introduces students to different types of renewable energy through service learning and active participation in a large education event. Students will participate as hands-on volunteers at the Midwest Renewable Energy Association Fair, one of the largest energy fairs in the country, with over 22,000 attendees. Students will travel to the site in Wisconsin, camp out in an environmentally responsible manner during the fair, assist the organizers in various capacities, and attend informational workshops during the fair itself. This will be supplemented with classroom teaching before, during, and after the event. Students will have an opportunity to see working examples of various renewable energy technologies, and investigate one or more of these in depth. **Su (V)**

BIOL 1002 Humans in the Ecosystem: Gulf Coast (MnTC 10)

2 credits; 1 classroom hours/week; 2 lab hours/week
Introduces students to the interaction of humans and their environment through service learning and active participation in rebuilding Gulf Coast communities after a natural disaster. Students will participate as hands-on volunteers in hurricane-damaged areas of the Gulf Coast, while also investigating the natural history of the region. Students will travel to the site,

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work in partnership with local agencies in various capacities, and engage in field work. This will be supplemented with classroom teaching before, during, and after the event. Prereq: Instructor permission required. **Su (V)**

BIOL 1107 Biology of Women (MnTC 3A, 2)

3 credits; 3 classroom hours/week; 0 lab hours/week

Provides a "theme based" course for learning biological concepts for both men and women. Objectives include studying reproductive anatomy and physiology of both sexes, studying pregnancy and fetal development, and examining issues related to reproductive biology and women's physical health. Issues to examine include contraception, cancer, menopause, and the relationship of women to the health care system. Students have the option of taking BIOL 1110 concurrently or following completion of BIOL 1107. Completion of BIOL 1110 and BIOL 1107 fulfills a lab science requirement for the MN transfer curriculum. **F, S, Su (V)**

BIOL 1110 Human Biology Laboratory (MnTC 3A, 2)

1 credit; 0 classroom hours/week; 2 lab hours/week

Provides an optional lab with hands on experience for the lecture sections of 1114 (Critical Issues in Human Biology) and 1107 (Biology of Women). The lab covers microscopy, scientific method, study of the cell, genetics, mitosis and meiosis, aspects of human anatomy and physiology and topics of reproduction. Topics covered may also include ethical decision-making, medical autonomy, genetic engineering, stem cell research, use of animals in research, organ donation, the human genome project, examination of issues related to reproductive biology and women's physical health or other current critical issues. This course may be paired with BIOL 1107 or 1114 to fulfill a lab science requirement. Prereq: Concurrent enrollment in or previous completion of BIOL 1107 or 1114. **F, S, Su (V)**

BIOL 1114 Critical Issues in Human Biology (MnTC 3A, 9)

3 credits; 3 classroom hours/week; 0 lab hours/week

Presents information for majors and non-majors interested in the critical and ethical issues related to how the human body functions. Topics such as ethical decision-making, genetic engineering, living wills, and issues related to prevention of cancer will be examined. The course will build the biological framework for understanding these dilemmas by exploring the scientific method and human body systems. Students have the option of taking Biol 1110 concurrently or following completion of Biol 1114. Completion of Biol 1110 and Biol 1114 fulfills a lab science requirement for the MN transfer curriculum. See the catalog for a description of Biol 1110. **F, S, Su (V)**

BIOL 1115 Critical Issues in Human Biology (with lab) (MnTC 3A, 9)

3 credits; 2 classroom hours/week; 2 lab hours/week

Is intended for majors and non-majors interested in the critical and ethical issues related to how the human body functions. Topics such as ethical decision-making, genetic engineering, living wills, and issues related to prevention of cancer will be examined. The course will build the biological framework for understanding these dilemmas by exploring the scientific method and human body systems. Includes one semester credit of lab. **F, S**

BIOL 1116 Environmental Science (no lab) (MnTC 3A, 10)

2 credits; 2 classroom hours/week; 0 lab hours/week

Is intended for non-majors or majors. Fundamental concepts in ecology focusing on man's increasing impact and exploitation of the environment stressing the limits of the biosphere with respect to resources, energy, and pollution. Activities will include discussion, group activities, guest speakers and videos. **S**

BIOL 1117 Environmental Science (with lab) (MnTC 3A, 10)

3 credits; 2 classroom hours/week; 2 lab hours/week

Introduces non-majors or majors to fundamental concepts in ecology focusing on man's increasing impact and exploitation of the environment stressing the limits of the biosphere with respect to resources, energy, and pollution. Activities will include discussion, group activities, guest speakers and films. One semester credit of lab includes field trips and analysis of factors using the campus landscape. **F, S**

BIOL 1120 Exploring Biology (MnTC 3A)

4 credits; 3 classroom hours/week; 2 lab hours/week

Introduces non-majors to important biological concepts. This course serves as the prerequisite for Anatomy and Physiology I (BIOL 2201) and Microbiology (BIOL 2205 and 2305). The course emphasizes the molecular level of biology and Darwinian evolution as the unifying theme of biology with emphasis on cell structure and function, cell transport, energy transfers, and genetics. Lab exercises will include the design and conduction of scientific experiments, data analysis, microscopy, cell biology, genetics, and ecology. Students will gain hands-on experience in the safe handling and use of living and preserved organisms as well as laboratory instruments and equipment. **F, S, Su**

BIOL 1130 Human Body Systems

4 credits; 3 classroom hours/week; 2 lab hours/week

Study the basic anatomy and physiology of the human body through lectures and hands-on laboratory work. The laboratory component will include basic microscopy, investigation and identification of major body structures on models and preserved specimens, basic physiological measurements, and dissection of a representative mammal. This course is intended for students in the paramedic and other programs who may need an overview of the human body. It is not a substitute for Human Anatomy and Physiology (BIOL 2201-2202). **F (V), S (V), Su**

BIOL 1154 Biology: From Cell to Organism (MnTC 3A, 2)

4 credits; 3 classroom hours/week; 2 lab hours/week

Emphasizes the molecular level of biology with emphasis on cell structure and function, cell transport, energy transfers, genetics, technology, and Darwinian evolution. Units include chemistry, cell structure and function, metabolism, genetics, evolution and critical issues. Labs will include several of the following topics: microscopy, spectrophotometry, permanent slide preparation, electrophoresis comparison of plant and animal metabolism, cell reproduction and genetics. Students will gain hands-on experience in the safe handling and use of living and preserved organisms as well as laboratory instruments and equipment. Prereq: Require one year HS chemistry or a college chemistry course. **F, S**

BIOL 1155 General Biology: From Organism to Ecosystem (MnTC 3A, 2)

5 credits; 3 classroom hours/week; 4 lab hours/week

Introduces students to the study of organisms at the organismal and ecological levels - macrobiology. It will integrate knowledge, terminology and concepts from all fields of biology to gain an appreciation of the origin of life and how species diversity arose. Units will include the origin of life, phylogenetic classification, ecology, and biodiversity. Lab will include comparative anatomy, examining environmental factors, studies of organisms and their interrelationship with the environment, and independent research projects. Students will gain hands-on experience in the safe handling and use of living and preserved organisms as well as laboratory instruments and equipment. Prereq: BIOL 1154 with a grade of C or better or instructor permission. **S**

BIOL 2201 Anatomy and Physiology I (MnTC 3A)

4 credits; 3 classroom hours/week; 2 lab hours/week

Is intended for nursing, allied health fields and biology majors. Study of anatomy and physiology of the human body with special emphasis on the relationship between structure and function and homeostatic mechanisms of the body. Systems and topics covered: Histology, integumentary system, skeletal system, articulations, muscular system, nervous system, special senses, and endocrine systems. Prereq: Exploring BIOL 1120 or BIOL 1154 or equivalent high school biology course within the last 3 years. **F, S**

BIOL 2202 Anatomy and Physiology II (MnTC 3A, 2)

4 credits; 3 classroom hours/week; 2 lab hours/week

Allows students in nursing, allied health fields and biology majors to study anatomy and physiology of the human body with special emphasis on the relationship between structure and function and homeostatic mechanisms of the body. Systems and topics covered include cardiovascular system, lymphatic and immune systems, respiratory system, digestive system, urinary system, acid-base and electrolyte balance, reproductive systems, and development. The lab component will include hands on experience with actual human tissue specimens as well as group projects. Prereq: BIOL 2201 completed with a C or better. **F, S, Su**

BIOL 2205 Microbiology (MnTC 3A, 2)

3 credits; 2 classroom hours/week; 2 lab hours/week

Covers a survey of microbial groups, microbial cell structure, nutrition, growth, control, metabolism, genetics, evolution, epidemiology, and interactions with host organisms. The lab component requires microscope skills, and includes aseptic technique, culturing, staining, enumeration, identification, and biochemical testing of microorganisms, as well as identification of a bacterial unknown. Students will gain hands-on experience in the safe handling and manipulation of pathogenic and potentially pathogenic microbes. Prereq: A grade of C or better either in BIOL 1120 or BIOL 1154. **F, S, Su**

BIOL 2301 Zoology (MnTC 3A, 2)

4 credits; 3 classroom hours/week; 2 lab hours/week

Study the morphological and physiological characteristics of animals emphasizing adaptation, evolution, and ecology. Intended for biology majors/minors and pre-professional students. Prereq: BIOL 1154 (or equivalent) or permission of instructor. BIOL 1155 is recommended. **S**

BIOL 2303 Genetics (MnTC 3A, 2)

5 credits; 4 classroom hours/week; 2 lab hours/week

Introduces students to major concepts in Mendelian, molecular and population genetics. Experiments with viruses, bacteria, insects and plants highlight the study of gene expression, recombination, gene mapping, chromosome analysis and population genetics. Lecture hours include a weekly recitation. Students will gain hands-on experience in the safe handling and manipulation of model organisms. Prereq: A grade of C or better in BIOL 1154 (or equivalent) or permission of instructor. **F, S**

BIOL 2305 Principles of Microbiology (MnTC 3A, 2)

5 credits; 3 classroom hours/week; 4 lab hours/week

Introduces microbiology including study of prokaryotic, eukaryotic, and viral microorganisms. Topics include microbial pathogenesis, microbial genetics, microbial resistance and evolution, the mammalian immune response to microbial infection, microbial diversity, environmental and food microbiology. Labs require basic microscope skills, and include a survey of microbes, isolation of microbes from human specimens and the environment, staining of bacteria, biochemical testing of microbes, enumeration of bacteria, bacterial genetics, immunological testing, and use

of microbes in food and beverage production. Students will gain hands-on experience in the safe handling and manipulation of pathogenic and potentially pathogenic microbes. Prereq: BIOL 1154 (or equivalent) with a grade of C or better or permission of instructor. **F, S**

BIOL 2306 General Ecology (MnTC 3A, 2)

4 credits; 3 classroom hours/week; 3 lab hours/week

Introduces students to the fundamentals of ecology, focusing on the study of organisms in relation to their physical and biological environment. The course includes a survey of individual, population, community, and ecosystem level ecology. Theoretical, empirical and applied ecology will be discussed. Activities may include discussion, group activities, guest speakers, films and field trips. Labs will reinforce lecture content and provide students with research skills including use of primary literature, experimental design, data analysis and interpretation. Prereq: BIOL 1154 (required) MATH 1103 (recommended). **F (V)**

BUILDING INSPECTION TECHNOLOGY

About the Building Inspection Technology Department

Course work prepares students for careers as building officials and can apply to continuing education requirements in the field. Classes scheduled evenings and weekends; ideal for working adults and career changers. BIT courses are available alternate terms at North Hennepin Community College and students may be jointly enrolled. For degree (A.A.S.) and certificate requirements and descriptions, see the Programs of Study section of this catalog. Course descriptions for BIT courses appear below.

Course descriptions

BIT 1000 Introduction to Building Inspection

2 credits; 2 classroom hours/week; 0 lab hours/week

Provides an introduction to the field of building inspection. The student will learn about the history of codes, what codes and standards are and how they are developed, along with receiving an introduction to plan reading, field inspections, department administrations, and information on the industry and types of positions that work in a building department. This course is intended to provide a student with a broad overview of the building inspection industry and is suited for students working towards a career in the code enforcement industry. **F, S**

BIT 1100 Field Inspection

2 credits; 2 classroom hours/week; 0 lab hours/week

Provides a basic understanding of how to conduct field inspections under the International Residential Code. Students will learn about building components and systems, and how building code requirements are applied to these systems during construction. This course is intended for a student that is working towards a career in the construction industry as an inspector or as a project manager. Prereq: BIT 1000. **F**

BIT 1189 Internship

hours arranged

Provides supervised work experience in building inspection. Provides opportunities for hands-on involvement with industry. Recommended for pre-service students. Prereq: Permission of Building Inspection Internship Coordinator. **F, S**

BIT 1210 Advanced Field Inspection

2 credits; 2 classroom hours/week; 0 lab hours/week

Offers the experienced construction inspector an understanding of the more detailed requirements of the International Building Code. Topics covered

COURSE DESCRIPTIONS

will include extensions of the standards as referenced in the International Building Code. Emphasis will be on commercial, industrial, and multi-story building. Prereq: BIT 1100. **F (V), S (V)**

BIT 1215 Building Construction Plan Reading

2 credits; 2 classroom hours/week; 0 lab hours/week

Emphasizes symbols used in the production of architectural, structural, mechanical, and electrical drawing. Course includes interpretation of drawing details, sections, elevations, floor plans, etc. This course should be of value to students interested in drafting, estimating, and construction. **F (V), S (V)**

BIT 1300 Plan Review Non-Structural

2 credits; 2 classroom hours/week; 0 lab hours/week

Emphasizes techniques for plan review on single family dwellings, townhomes, and accessory structures associated with dwellings, in accordance with the current Minnesota State Building Code. Discussion topics include egress components, basic fire and life safety, building construction techniques, and other requirements related to residential dwellings. Prereq: (recommended): BIT 1000. **F (V), S (V)**

BIT 1305 Advanced Plan Review Nonstructural

2 credits; 2 classroom hours/week; 0 lab hours/week

Emphasizes techniques for plan review on commercial, industrial, and multi-family structures in accordance with the Minnesota State Building Code. Discussion topics shall include, but not be limited to, occupancy classification, allowable area, types of construction, fire resistive construction, fire protection requirements, and exiting. Prereq: BIT 1000 and BIT 1300. **F (V), S (V)**

BIT 1310 Plan Review Structural

2 credits; 2 classroom hours/week; 0 lab hours/week

Introduces the techniques of conducting the structural plan review of a building design with special emphasis on wood frame construction, wood beams, joists, rafters, studs, columns, and shear-resisting elements. Students will learn how to apply relevant equations to compute load, shear and other relevant structural forces. Prereq: (recommended): BIT 1215. **F**

BIT 1400 Housing Inspection

2 credits; 2 classroom hours/week; 0 lab hours/week

Is an introductory course in housing inspection for both experienced inspectors and individuals working in closely related fields. Emphasis is placed on housing standards and inspection procedures. Various public agency, housing inspections programs are covered. **S**

BIT 1410 Mechanical Inspection

4 credits; 4 classroom hours/week; 0 lab hours/week

Acquaints the student with the methods and techniques using the Minnesota Mechanical Code in plan review and field inspection of mechanical systems that include heating, ventilations, air conditioning, and refrigeration. The course is intended for anyone looking for a BIT degree/certificate, students pursuing a construction management degree, or those entering the mechanical inspection field. Prereq: (recommended): BIT 1000, MATH 0092, and BIT 1215 or equivalent knowledge. **F, S**

BIT 1420 Electrical Inspection

2 credits; 2 classroom hours/week; 0 lab hours/week

Acquaints the student with a working knowledge of plan review and field inspection relative to the international electrical code and the state code. Students will have the opportunity to study electrical design and perform electrical computations. Prereq: (recommended): BIT 1215 or equivalent knowledge. **F, S**

BIT 1600 Building for Energy Conservation

2 credits; 2 classroom hours/week; 0 lab hours/week

Introduces the student to energy saving principles in building design and construction and how these principles are used to evaluate building plans and existing buildings. **S**

BIT 1700 Plumbing Inspection

3 credits; 3 classroom hours/week; 0 lab hours/week

Familiarizes the student with the Minnesota Plumbing Code and provides a comprehensive overview of common plumbing materials and practices. This course is intended for anyone interested in a building inspection technology degree/certificate or those entering the plumbing inspection field. Prereq: (recommended): BIT 1000, BIT 1215 or equivalent knowledge. **F**

BIT 1800 Housing Field Inspection Fundamentals

2 credits; 2 classroom hours/week; 0 lab hours/week

Provides both new and experienced housing inspectors with historical and current techniques and materials used in the construction of the structural, electrical and mechanical components within existing residential structures. The course focuses on common construction and installation techniques and equipment, while giving special emphasis to the visible indicators of system deterioration and failure and hazardous and/or non-professional installations. **S (V)**

BIT 2000 Public Administration for the Code Official

3 credits; 3 classroom hours/week; 0 lab hours/week

Provides students with foundational concepts for working, supervising and managing in a governmental organization. Through case studies and other class exercises, the student will learn the fundamentals of public administration, human resource principles and law, and local government budgeting. Current issues in the industry will be discussed and integrated into the course as appropriate. The course will provide students with an understanding of public administration as it relates to a code official. **F, S (V)**

BIT 2020 Legal Aspects of Code Administration

2 credits; 2 classroom hours/week; 0 lab hours/week

Consists of an overview of modern administrative government, legal responsibilities in building inspection, inspector authority, courtroom procedures, building inspection liability, the application of legal rules pertaining to public negligence, governmental liability, and ethics. This class is intended for governmental officials, building inspectors, elected official, contractors, and real estate professionals. Prereq: BIT 1000. **F (V), S (V)**

BIT 2100 Soils and Concrete Technology

3 credits; 3 classroom hours/week; 0 lab hours/week

Familiarizes students with the history and fundamentals of concrete, admixtures, soils and aggregates. The student will understand the interactions of concrete, weather, and soil conditions; the proper placement of concrete; bearing capacity of soils; and the basic principles of concrete and soil inspection. **F, S (V)**

BIT 2300 Advanced Plan Review Structural

2 credits; 2 classroom hours/week; 0 lab hours/week

Introduces advanced engineering principles of mechanics using examples and problems applicable to wood, steel, concrete, and masonry construction. Prereq: BIT 1310. **F (V), S (V)**

BIT 2400 Land Use Zoning

2 credits; 2 classroom hours/week; 0 lab hours/week

Offers an understanding of land use and zoning regulations. These regulations include variances, conditional uses, grading and preliminary

plats. Students will learn what a municipal ordinance is and the state regulations for county and municipal governments to enforce them. Also, included are the DNR regulations pertaining to shoreline and flood plain elevations. **F (V), S (V)**

BIT 2500 Fire Suppression Systems

2 credits; 2 classroom hours/week; 0 lab hours/week
Provides information regarding the fire and life safety requirements of the Uniform Building Code. **S**

BIT 2650 Administering the Minnesota State Building Code

2 credits; 2 classroom hours/week; 0 lab hours/week
Shows students that the role of the building official is a complex one. Key aspects of a building official's job involve: having a solid understanding of codes and standards, an understanding of how to properly administer these codes and standards, along with working with various federal, state, and local agencies in order to provide conditions for a safe built environment. This course will bring together the concepts that the student has collected throughout the BIT curriculum, and apply this knowledge in a comprehensive review of the role of the building official. This course will provide essential background and understanding of how to properly administer the Minnesota State Building Code. This course is recommended for current and future building officials, inspectors, and other interested parties. Prereq: BIT 1000, 1100, 1300, and 2020 or approval of instructor. **F (V), S (V)**

BUSINESS

About the Business Department

Courses prepare students for employment or transfer to four-year institutions. Degree options (A.S., A.A.S.) allow students to focus on skill building for careers (with concentrations possible) or combine a career degree with transfer credits. Certificates with focused coursework are offered in marketing/sales, small business development, human resources management, project management, and supervision, also. For degree and certificate requirements and description, see the Programs of Study section of this catalog. Course descriptions for BUS courses appear below.

Course descriptions

BUS 1101 Introduction to Business in Society

3 credits; 3 classroom hours/week; 0 lab hours/week
Presents an overview of the role of business in society. Topics include the historical perspective, the economy, global dimensions of business, ethics and social responsibility, and the various forms of business organizations. Various disciplines of business (accounting, finance, information systems, marketing, operations, etc.) are also introduced in the overall context of the enterprise. **F, S, Su**

BUS 1102 Principles of Customer Service

3 credits; 3 classroom hours/week; 0 lab hours/week
Defines customer service and demonstrates the importance of delivering effective customer service. Topics covered include the financial impact of customer service delivery, skills for developing customer service over the phone, in person, in writing, and electronically. Experiential exercises promote skills for assessing customer service and handling escalated situations. **F, S, Su (V)**

BUS 1104 Principles of Marketing

3 credits; 3 classroom hours/week; 0 lab hours/week
Provides an overview of the marketing process and examines the role of government, the marketing environment, consumer behavior, and the

marketing function within an enterprise. Students will learn how to develop and implement an effective marketing plan which includes identification of target markets and the utilization of the appropriate marketing mix (product, price, promotion and distribution). The course also covers essential marketing concepts and terminology such as positioning, segmentation, relationship marketing, marketing information systems, etc. **F, S, Su**

BUS 1105 Sales and Negotiating Skills

3 credits; 3 classroom hours/week; 0 lab hours/week
Introduces the principles and practices of professional selling. Learn to be a true problem solver and discoverer of customer needs. Creatively match benefit statements to deliver customer satisfaction. Learn how to organize and develop leads into sales. Deliver goods, services, and ideas beyond customer expectations, while maintaining a positive and enjoyable attitude. Polish presentation skills, learn networking, timing, and other essentials. The who, what, when, and why of selling today. **F, S**

BUS 1112 Business Mathematics

3 credits; 3 classroom hours/week; 0 lab hours/week
Applies basic mathematics to business situations. Course includes brief review of basic arithmetic as a foundation for course concepts including the various calculation of interest rates, discounts, depreciation, consumer loans, mortgages, insurance, taxes, stocks and bonds, financial statements, annuities, present and future value, and the concept of sinking funds. Prereq: MATH 0091 or equivalent placement on the Inver Hills assessment inventory. **F, S**

BUS 1118 Business Ethics

3 credits; 3 classroom hours/week; 0 lab hours/week
Examines issues related to ethics in business and their relationship and impact upon society, the economy, and environment. Students will increase their awareness in making decisions based upon ethical judgments. Students will examine the roles, responsibilities, and conflicts of business management in the context of organizational ethics. **V**

BUS 1119 Human Relations in Business

3 credits; 3 classroom hours/week; 0 lab hours/week
Examines human behavior and interaction in the organization. Emphasis is placed on understanding yourself and others, applying this to developing more productive working relationships, and achieving desired results. Topics include employer/employee relations, communication techniques, conflict management, work force diversity, and developing and managing effective teams. **F**

BUS 1121 Principles of Management

3 credits; 3 classroom hours/week; 0 lab hours/week
Studies management's role in helping organizations establish and achieve its mission and goals. Assists individuals in developing the skills needed to become successful practicing managers in today's society. Major areas of focus include the historical functions of management (planning, organizing, leading and controlling) as well as emerging ideas and practices that are transforming management and leadership in modern organizations. Prereq: Bus 1101 or consent of instructor. **F, Su**

BUS 1122 Human Resources Management

3 credits; 3 classroom hours/week; 0 lab hours/week
Introduces an overview of the principles, practices, and dynamics of the human resource management function in contemporary organizations. Topics include recruitment and staffing; compensation and benefits; strategic management and human resource planning; performance management; employee and organizational development; diversity initiatives and globalization; employee/labor relations; legal compliance; and environmental safety and security. **V**

COURSE DESCRIPTIONS

BUS 1125 Management of Customer Service

3 credits; 3 classroom hours/week; 0 lab hours/week

Provides students with the tools needed to manage customer service in any environment. Topics covered include call center management, sales force management, techniques for handling escalated situations, and selecting, hiring and supervising customer service representatives. **F, S, Su (V)**

BUS 1131 Legal Environment of Business

3 credits; 3 classroom hours/week; 0 lab hours/week

Introduces business students to legal topics that impact business. This course addresses legal reasoning, legal procedures, constitutional law, torts, contracts, the sale of goods under the uniform Commercial Code, business organizations, unfair competition, consumer protection, bankruptcy and employment law. **F, S**

BUS 1132 Business Law

3 credits; 3 classroom hours/week; 0 lab hours/week

Studies the origin of law; the court system; and legal procedure. An emphasis is placed on contract law affecting the sale of goods and services and obligations and rights of the parties involved. **F, S**

BUS 1150 Supervisory Techniques in Business

3 credits; 3 classroom hours/week; 0 lab hours/week

Covers the essential decision making skills necessary for effective supervision and leadership of work groups and individuals. The supervisor's role in the organization is also studied. Emphasis is placed on problem solving and achieving results without the negative use of power or other demoralizing approaches. This course is designed to help potential and existing supervisors enhance their effectiveness. **F**

BUS 1152 Leadership Skills Development

3 credits; 3 classroom hours/week; 0 lab hours/week

Examines the topics related to developing effective leadership skills. Areas of study include innovative enterprises that thrive on the global dynamics of creative and versatile leadership, and effective organizational changes. This course is designed to provide entrepreneurs, managers, and supervisors the opportunity to synthesize their individual and organizational potential. **S**

BUS 1160 Entrepreneurship and Small Business Management

3 credits; 3 classroom hours/week; 3 lab hours/week

Explores the journey of business creation from an initial entrepreneurial idea to the successful management of a small business. Students develop practical, hands-on marketing and financial skills designed to increase the chances of success of an entrepreneurial endeavor. The final project is the creation of a business plan which may be used to help secure initial financing of a small business start-up. **F, S, Su (V)**

BUS 1189 Business Internship

2-4 credits; hours arranged

Offers the student practical work experience in a business environment. The student should have the opportunity to apply what is learned in the classroom to the working world. A new job assignment with a current employer may be a suitable internship experience. Note: This course may be repeated for a maximum of 6 credits. Prereq: Permission of instructor. **F (V)**

BUS 2100 Business Finance

3 credits; 3 classroom hours/week; 0 lab hours/week

Introduces financial management in a business environment. Students will develop an understanding of topics including time value of money, stock and bond valuation, security markets, risk and return, and capital budgeting. Students will also engage in hands-on activities involving financial markets. Prereq: ACCT 2101 or equivalent. **S**

BUS 2120 Essentials of Personal Effectiveness

1 credit; 1 classroom hours/week; 0 lab hours/week

Assists students with a variety of self-management strategies that can enhance personal and professional effectiveness. Topics include personal assessment, identifying your purpose, goal setting strategies, organizational and time management skills, and leadership abilities. Designed for any business student interested in further developing career goals and work place skills. **F (V)**

BUS 2125 Applied Customer Service

3 credits; 3 classroom hours/week; 0 lab hours/week

Builds upon principles gained from Management of Customer Service and Principles of Customer Service. Students will practice, demonstrate, and apply skills in customer service as well as evaluate the effective delivery of customer service. Topics covered include the application of customer service theory and skills in a call center, in person, in management, and in the selection of customer service representatives. Prereq: BUS 1102 and BUS 1125; or permission of instructor. **F, S, Su (V)**

BUS 2130 Employment Law for Business

3 credits; 3 classroom hours/week; 0 lab hours/week

Covers the growing body of employment laws and their application to the workplace. Wrongful discharge, workplace harassment, defamation, equal employment and other employee protection issues are discussed in the context of federal and state statutes, case law, organizational policies and procedures, and their application to the workplace. **F (V)**

BUS 2225 E-Marketing Fundamentals

3 credits; 2 classroom hours/week; 2 lab hours/week

Provides learners with concepts and technical skills necessary to create successful e-marketing programs. Approximately half the course is centered on e-marketing concepts such as strategic e-marketing, internet consumer behavior, and search engine optimization. The remaining portion is used to develop hands-on software skills in Dreamweaver and Fireworks--two applications commonly used by professionals to create e-marketing programs. Upon successful completion of this course, students will possess the foundational conceptual and technical skills necessary to pursue entry-level e-marketing career opportunities. Prereq: CS 1100 with a minimum of C grade or instructor's permission. Recommended: BUS 1104 with a minimum of C grade and ability to type at least 25 words per minute. **F, S, Su (V)**

BUS 2242 Applied Leadership: Understanding Diversity

1 credit; 1 classroom hours/week; 0 lab hours/week

Enhances personal and professional effectiveness. Emphasis is on understanding diversity, professional development, and service learning. It allows students to develop self confidence, and practice leadership and management skills through lecture, projects, and service learning. A minimum of 10 hours of Community Service outside of the classroom is required. **F (V)**

BUS 2250 Contemporary Business Topics

1-3 credits; 1-3 classroom hours/week; 0 lab hours/week

Explores selected issues and developments currently facing American business. These may relate to the managerial, social, ethical, legal, financial, economic, technological, political, and international aspects of business. Permission of instructor may be required in certain topic areas. **F (V)**

BUS 2310 Achieving Customer Satisfaction

3 classroom hours/week; 0 lab hours/week

Examines service as a quality product which will consistently create higher levels of customer satisfaction. The principles and methodology can be

applied at an individual, work group, or organizational level. Note: It is recommended that students take BUS 1121 (Principles of Management) before this course. **F (V)**

BUS 2320 Project Management and Planning Skills

3 credits; 3 classroom hours/week; 0 lab hours/week

Presents a systematic approach to managing and integrating the work of individuals and teams in their pursuit of organizational goals. Topics include defining project purpose, analyzing task and resource requirements, understanding behavioral dimensions, and using common tools for planning and controlling projects. Note: It is recommended that students take BUS 1121 (Principles of Management) before this course. **S (V)**

BUS 2430 Principles of Advertising and Sales Promotion

3 credits; 3 classroom hours/week; 0 lab hours/week

Develops effective advertising and promotional programs that are aligned with customer needs, priorities, and preferences. Topics include analyzing offers, understanding motivations of targeted customers, utilizing market research, and selecting and evaluating various media. Time is allocated to understand social values, ethical concerns, and the role of marketing in society and the global economy. Prereq: BUS 1104. **F (V)**

BUS 2435 Creating An Advertising And Sales Promotion Campaign

2 credits; 2 classroom hours/week; 0 lab hours/week

Applies the principles and concepts learned in BUS 2430 to create an advertising and sales promotion campaign. Students will be guided through the steps and process to complete an actual or simulated campaign that includes strategy and budget, selection of specific media, a timeline for implementation, creative copy and visuals, and evaluation measures. This is an applied course that can be used to create an actual campaign for an existing or planned business. Prereq: BUS 2430 or experience in marketing, sales or advertising is recommended. **F (V)**

BUS 2510 Managing in the Public Sector

3 credits; 3 classroom hours/week; 0 lab hours/week

Increases individual effectiveness and improve working relations between departments, customers, and the organization. The learning environment is enhanced through shared experiences and new relationships formed when public employees interact with their counterparts for other cities and counties. The learning opportunities offered in this course are intended to be practical and relevant in improving effectiveness on the job. Participants will support one another through discussion groups, readings, presentations, exercises and Web support that will stretch them to think past their present reality and to tap what may have been unreachable alone. Each concept introduced in this course will have an application assignment and exercise to reinforce and transfer the learning directly into student's work situation. NOTE: this is not an open enrollment course. Prereq: Currently working as a supervisor or manager in the public sector and approved through program coordinator. **F (V)**

BUS 2520 Leadership for Public Management

2 credits; 2 classroom hours/week; 0 lab hours/week

Develops a plan for how mid-to upper-level managers from the public sector can reinvigorate their organizational and personal leadership spirit. The course focuses on understanding and exercising leadership in the public sector by exploring the theoretical and empirical basis for successful leadership, identifying what is unique about the public sector environment, discovering and practicing behaviors and skills that support both organizational and personal success, and providing a network of support for individuals to realize their personal leadership potential. Prereq: Currently employed in a public sector leadership role. **F (V)**

CAREER DEVELOPMENT

About Career Development courses

These courses are designed to help you discover career interests and explore them through academic study and community/work experience.

Course descriptions

CRDV 1100 Life Career Planning

1 credits; 1 classroom hours/week; 0 lab hours/week

Designed for students interested in gaining the essential information needed for career and educational planning decisions. To assist in the process, students complete assessment inventories, become competent users of numerous career and educational planning resources, and ultimately identify and explore career options. Appropriate for students who are undecided about their major and for students who have direction but want more information regarding career and academic planning. **F, S**

CRDV 1190 Field Experience

3 credits; 12 classroom hours/term; 120 lab hours/term

Provides a supervised practical community based learning experience in a wide variety of settings. Its purpose is to assist the student in analyzing the career possibilities of that work placement and to develop employment related skills. Student spend a minimum of 40 hours per credit on the job and attends a seminar/meetings on campus. Student is responsible for own transportation to work site. Prereq: Completion of 15 semester hours at IHCC, be in good academic standing, completion of an application, and acceptance into the program by counseling faculty. Can be repeated once max 6 credits. **S**

CRDV 1191 Field Experience

6 credits; 15 classroom hours/term; 240 lab hours/term

Provides a supervised practical community based learning experience in a wide variety of settings. Its purpose is to assist the student in analyzing the career possibilities of that work placement and to develop employment related skills. Student spends a minimum of 40 hours per credit on the job and attend a seminar/meetings on campus. Student is responsible for own transportation to work site. Prereq: Completion of 15 semester hours at IHCC, be in good academic standing, completion of an application, and acceptance into the program by counseling faculty. **S**

CHEMISTRY

About the Chemistry Department

Specialized and general courses, all with laboratory, which meet requirements for two- and four-year degrees in the physical and life sciences, including nursing. Students interested in a major in chemistry, the sciences, or engineering should consult with a counselor when selecting classes.

Course descriptions

CHEM 1010 Introductory Chemistry (MnTC 3B)

4 credits; 3 classroom hours/week; 3 lab hours/week

Introduces basic principles and concepts of chemistry to students who previously have had no chemistry or who desire a basic review of chemistry. This course is a lab science course designed for non-science majors and for students who need a basic chemistry course before enrolling in college chemistry. Approved safety goggles and a lab apron are required. Prereq: MATH 0094. **F, S, Su**

COURSE DESCRIPTIONS

CHEM 1061 Principles of Chemistry I (MnTC 3B)

5 credits; 4 classroom hours/week; 3 lab hours/week

Includes study of basic chemical theory and application with emphasis upon atomic theory and structure, chemical bonding, inorganic chemical nomenclature, chemical reactions, reaction stoichiometry, periodic relationships, molecular structure, properties of gases and the kinetic molecular theory. The lab component of this course provides the student with the opportunity to apply chemical concepts through observation, data collection, quantitative measurement, problem analysis, and mathematical applications to chemistry. Approved safety goggles and a lab apron are required. Prereq: MATH 0099 or high school equivalent and CHEM 1010 or high school equivalent. **F, S**

CHEM 1062 Principles of Chemistry II (MnTC 3B)

5 credits; 4 classroom hours/week; 3 lab hours/week

Continues CHEM 1061 with emphasis on thermochemistry, properties of liquids and solids, properties of aqueous solutions, principles of kinetics, acid-base concepts, solution chemistry applied to chemical equilibria of weak electrolytes, saturated aqueous solutions of slightly soluble salts and complex ions, and basic concepts of thermodynamics. The lab component of this course provides the student with the opportunity to apply chemical concepts through observation, data collection, quantitative measurement, problem analysis and mathematical applications to chemistry. Approved safety goggles and a lab apron are required. Prereq: CHEM 1061. **F, S**

CHEM 2061 Organic Chemistry I

5 credits; 4 classroom hours/week; 4 lab hours/week

Is intended for students pursuing a major in chemistry, biology, chemical or material science engineering, pharmacy, veterinary medicine and a variety of medical fields. The course includes a review of basic chemical concepts applied to organic compounds, the role of covalent bonding in organic compounds, functional groups, resonance, structural isomerism, an overview of organic nomenclature, chemical properties of alkanes, stereochemistry, substitution and elimination reactions, free-radical reactions, preparation and reactions of alcohols, ethers and epoxides. The lab component of the course provides the student experience with lab techniques applied to organic chemistry. Prereq: CHEM 1062. **F**

CHEM 2062 Organic Chemistry II

5 credits; 4 classroom hours/week; 4 lab hours/week

Is a continuation of CHEM 2061 that includes the study of IR and NMR spectroscopy, the chemistry of alkenes, alkynes, aromatic compounds, aldehydes, ketones, carboxylic acids and their derivatives, conjugate addition reactions, enolates and carbanions, amines and an introduction to some biochemical organic compounds. The lab component of the course provides the student experience with obtaining and interpreting IR spectra for reactants and products in organic reactions, synthesis and isolation of products from reaction mixtures, identification methods for selected families of organic compounds and analytic techniques used in the identification of organic compounds. Prereq: CHEM 2061. **S**

related courses are offered in Global Studies (GS). For information about the Chinese Studies Certificate, see the Programs of Study section of this catalog.

Chinese Studies is a growing field, and knowledge of the language can help you in business, international law, journalism, teaching and scholarship, history, art, or music. Course work may also be used to satisfy electives and program requirements, cultivate personal interests, or help you begin the path toward a minor or major in Chinese or East Asian Studies. Students often complete their first two years of study at Inver Hills and then transfer their credits to a four-year institution with the language courses satisfying the foreign language requirement at many such schools (consult with an academic counselor or your transfer school).

Course descriptions

CHIN 1101 Beginning Chinese I (MnTC 8)

5 credits; 5 classroom hours/week; 0 lab hours/week

Offers elementary training in basic language skills of listening, speaking, reading, and writing. Specific goals include: 1) discuss nature and history of the Chinese language; 2) understand and use basic sentence patterns and 400 vocabulary words; 3) recognize 250 Chinese characters (traditional and simplified forms) and write 150 of them; 4) write simple phrases and sentences in Chinese, and 5) translate simple phrases and sentences from Chinese into English. Students also learn use of Chinese word-processing software, Chinese-language Internet software, and a computer-based Chinese text reader that helps them learn both to read better and to master new vocabulary. This course is the first semester of a one-year sequence in Mandarin Chinese. **F, Su (V)**

CHIN 1102 Beginning Chinese II (MnTC 8)

5 credits; 5 classroom hours/week; 0 lab hours/week

Continues elementary training in basic Mandarin Chinese language skills of listening, speaking, reading, and writing. Specific goals include: 1) increase knowledge of the nature and history of the Chinese language; 2) understand and use more basic sentence patterns and 800 vocabulary words; 3) recognize 500 Chinese characters (traditional and simplified forms) and write 300 of them; 4) write Chinese sentences and paragraphs; and 5) translate difficult sentences and paragraphs from Chinese into English. Students are also introduced to Chinese-English dictionaries and have further practice with Chinese word-processing software, Chinese-language Internet software, and a computer-based Chinese text reader. Prereq: CHIN 1101 or equivalent. **S, Su (V)**

CHIN 2201 Intermediate Chinese I (MnTC 8)

5 credits; 5 classroom hours/week; 0 lab hours/week

Offers intermediate training in basic Mandarin language skills of comprehension, spoken production, reading, writing, and translation. Emphasis is on understanding Chinese grammar and syntax as well as the unique cultural patterns of China that can contribute to more effective communication. Wide range of readings, writing and translation exercises, and the use of radical dictionary, audio/visual materials, and Chinese-language software are essential parts of course. Specific goals include recognizing 750 Chinese characters (traditional and simplified forms), writing 300-450 of them, and recognizing and using 800-1200 vocabulary words. Prereq: CHIN 1102 or equivalent. **F, Su (V)**

CHIN 2202 Intermediate Chinese II (MnTC 8)

5 credits; 5 classroom hours/week; 0 lab hours/week

Continues intermediate training in basic Mandarin language skills of comprehension, spoken production, reading, writing, and translation. Emphasis is on understanding Chinese grammar and syntax as well as the unique cultural patterns of China that can contribute to more effective

CHINESE

About the Chinese Department

The Chinese Department offers a variety of courses, including Beginning and Intermediate Chinese I and II, Chinese Culture I and II (listed under Humanities), and Philosophy East and West (listed under Philosophy). In addition, a Global Studies-China program with a Chinese Studies Certificate provides specialized training in the language, culture, and philosophy as well as the business, trade, and law of China. These additional China-

communication. Wider range of readings, more writing and translation exercises, and increased use of radical dictionary, audio/visual materials, and Chinese-language software are essential parts of course. Specific goals include recognizing 1,000 Chinese characters (traditional and simplified forms), writing 450-600 of them, and recognizing and using 1,200-1,600 vocabulary words. Prereq: CHIN 2201 or equivalent. **S, Su (V)**

COMMUNICATION

About the Communication Department

All human interaction is mediated through communication. In the communication department, our studies focus on developing a greater understanding of the nature of human interaction by exploring how messages are created, transmitted and received through the use of verbal and nonverbal symbols. Courses in the communication department will enhance the range of your communication skills both for personal development and growth, as well as prepare you to communicate effectively in personal relationships and in organizational settings. Courses fulfill transfer curriculum requirements and provide majors with core prerequisites.

Majors pursue a wide range of career opportunities including law, teaching, public service, politics, journalism, advertising and many other fields that require good communication skills.

Course descriptions

COMM 1100 Interpersonal Communication (MnTC 1, 7)

3 credits; 3 classroom hours/week; 0 lab hours/week

Promotes effective interpersonal communication in individual settings with family members, co-workers, friends, and acquaintances, through the study of interpersonal theory. Focuses on understanding the factors which influence our communication behaviors and techniques for improving our communication with others. **F, S, Su**

COMM 1110 Public Speaking (MnTC 1)

3 credits; 3 classroom hours/week; 0 lab hours/week

Is an introductory study of public speaking. Focus is on the different types of public speeches and the research, organizational, and delivery skills needed to present them effectively. This course requires frequent participation. Students are required to give speeches either in the classroom setting with classmates or in an instructor-approved professional setting and manner. (Some sections may be required to purchase a form of recordable media for use in class.) **F, S, Su**

COMM 1130 Effective Communication in Organizations (MnTC 2)

3 credits; 3 classroom hours/week; 0 lab hours/week

Provides an overview of the role of communication in organizations and the various skills needed to become more effective as individuals in organizational settings. Specifically, this course will look at the communication contexts of interviews, meetings, teamwork, and presentations. Additional topics will include organizational culture and change, cultural and ethical issues, interpersonal relations, and conflict and negotiation. **F, S, Su**

COMM 1150 Computer-Mediated Communication (MnTC 2, 9)

3 credits; 3 classroom hours/week; 0 lab hours/week

Explores how the use of technology (internet, email, text messaging, blogging and other emerging technologies) affects social interaction. It will help students to both evaluate the use of technology and understand how to utilize it responsibly. We will examine topics such as ethics, online identities, interpersonal dynamics, group dynamics, relationships, online communities and First Amendment issues. **F, S, Su**

COMM 2210 Oral Interpretation of Literature (MnTC 6A)

2 credits; 2 classroom hours/week; 0 lab hours/week

Explores aesthetic theory of literature and of oral reading. Includes practice in reading for emphasis, interpretation, and mastery of reading techniques. **S (V)**

COMM 2230 Small Group Communication (MnTC 1)

3 credits; 3 classroom hours/week; 0 lab hours/week

Examines theory and principles of discussion and leadership in small, task-oriented groups and application of these principles to task work within the group. Focus is on leadership and followership skills to facilitate effective participation in group settings. **F, S, Su**

COMM 2240 Intercultural Communication (MnTC 5, 8)

3 credits; 3 classroom hours/week; 0 lab hours/week

Explores theories of and factors influencing communication between individuals of different cultures. Topics include definitions of communication, definitions of culture and diversity of cultural patterns, cultural variables influencing communication such as language, non-verbal behavior, perception, values, and beliefs, factors that facilitate or inhibit intercultural communication, and examination of American culture in comparison to other cultures. Students may not earn credit for both COMM 1114 and COMM 2240. **F, S, Su (V)**

COMM 2250 Topics in Communication Studies (MnTC 2, 7)

2-3 cr.

This course is a topics course. Please refer to the course section note for more information on this course. **F, S, Su (V)**

COMMUNITY HEALTH CARE WORKER

About the Community Health Worker program

Designed for those interested in an allied health career, the Community Health Worker program prepares people to perform a broad range of human services functions in helping patients manage their health care, understand choices, and obtain services. Community health workers are employed by a variety of community agencies and health care organizations to increase cultural competence, obtain access to health care for the underserved, improve quality of care for the chronically ill, promote healthy communities, and educate families about health care coverage and resources. Sometimes they are called by other titles, such as health advocate. This program features specially scheduled short-term classes that meet three evenings a week and last two or three weeks. They are offered sequentially so that students complete all the classes, including an internship, in about four months.

Course descriptions

CMHW 1000 The Community Health Worker: Role, Advocacy and Outreach

2 credits; 2 classroom hours/week; 0 lab hours/week

Focuses on the community health worker's personal safety, self-care, and personal wellness, and their role in the promotion of health and disease prevention for clients. **S**

CMHW 1015 Organization and Resources: Community and Personal Strategies

1 credit; 1 classroom hours/week; 0 lab hours/week

Focuses on the Community Health Worker's knowledge of the community and the ability to prioritize and organize work. Emphasis is on the use and critical analysis of resources and problem solving. **S**

COURSE DESCRIPTIONS

CMHW 1025 Community Health Worker's Role in Teaching and Capacity Building

2 credits; 2 classroom hours/week; 0 lab hours/week

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. Students will learn and practice methods for planning, developing and implementing plans with clients to promote wellness. S

CMHW 1035 The Community Health Worker: Legal and Ethical Responsibilities

1 credit; 1 classroom hours/week; 0 lab hours/week

Focuses on the legal and ethical dimensions of the Community Health Workers' role. The student 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. S

CMHW 1045 Community Health Worker: Coordination, Documentation and Reporting

1 credit; 1 classroom hours/week; 0 lab hours/week

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. S

CMHW 1055 Communication Skills and Cultural Competence

2 credits; 2 classroom hours/week; 0 lab hours/week

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. S

CMHW 1060 Community Health Worker Internship

2-3 credits; hours arranged

Provides experience with the role of Community Health Worker, including personal safety, self-care and wellness, promotion of health and disease prevention of clients, organizational skills, and community resources. Prereq: CMHW 1045, completion of or concurrent enrollment in CMHW 1055 or HSER 1104. S

COMPUTER INFORMATION SYSTEMS

About the Computer Information Systems Department

Courses provide students with computer application and software knowledge that can be applied on the job and are also included as degree requirements in the following degrees: Microcomputer Software Support Specialist; Computer Programmer. See degree requirements and descriptions in the Programs of Study section of this catalog.

CIS 1105 Microsoft Windows

1 credit; 1 classroom hours/week; 0 lab hours/week

Includes a study of Windows fundamentals such as the basic manipulation of a window; saving, opening, closing, and printing files; Windows Explorer; Control Panel; Searching; Help; desktop customization; and Windows accessories. Basic hardware and software terms will be covered, as well as

identification and use of common hardware components. This is a hands-on course designed for the computer novice. V

CIS 1110 Microsoft Word

3 credits; 3 classroom hours/week; 0 lab hours/week

Includes formatting, printing, tabs, tables, newsletters, mail merge, styles, desktop publishing, macros, web page creation, and online forms. This course is designed for students wishing to acquire word processing knowledge for personal or professional use. Prereq: OSYS 1101 or basic keyboarding skills. V

CIS 1130 Introduction to Microsoft Excel

1 credit; 1 classroom hours/week; 0 lab hours/week

Introduces construction of spreadsheets using Excel. Topics include worksheet creation and formulas, functions, what-if analysis, formatting, graphing, and printing. Prereq: Working knowledge of Windows. Completion of MATH 92 with minimum of C grade or recommendation of MATH 94 on assessment test. F, S

CIS 1131 Intermediate Microsoft Excel

1 credit; 1 classroom hours/week; 0 lab hours/week

Includes Excel lists/database, pivot tables, advanced functions, macros, Excel web tools, and multiple sheet/file manipulation. Prereq: CIS 1130 or consent of instructor. S

CIS 1135 Microsoft PowerPoint

1 credit; 1 classroom hours/week; 0 lab hours/week

Develops the use of PowerPoint to produce professional-looking presentations. PowerPoint provides the flexibility to make an informal presentation in a small conference room using overhead transparencies, to make a slideshow using a projection device attached to a personal computer, or to make a formal presentation to a large audience using 35 mm slides. Enables enhancement of presentations with graphic images, video, and audio files. Prereq: Previous experience using Windows. S

CIS 1150 Introduction to Microsoft Access

1 credit; 1 classroom hours/week; 0 lab hours/week

Introduces database concepts and techniques to users and designers of database systems using Access. Topics include relational database concepts, building and customizing tables, creating queries, and constructing basic forms and reports. Prereq: Previous experience using Windows. F, S

CIS 1151 Intermediate Microsoft Access

1 credit; 1 classroom hours/week; 0 lab hours/week

Includes advanced form and report construction, data access pages, and advanced queries. Prereq: CIS 1150 or consent of instructor. F, S

CIS 1152 Access Application Development

2 credits; 2 classroom hours/week; 0 lab hours/week

Is a continuation of CIS 1151 with a focus on Access application development tools including switchboard, macros, and Visual Basic for Applications (VBA). Topics include documentation, SQL, complex forms/reports, error trapping, using ActiveX controls, introduction to object models including DAO and ADO, and securing a database. Students will create an original Access development project using a variety of techniques/tools. Prereq: CIS 1151. F

CIS 1160 Project Management Software

2 credits; 2 classroom hours/week; 0 lab hours/week

Uses Microsoft Project to introduce project management theory and application. Topics in this course include: creating a project to include task definition and dependencies; examination of critical path, constraints,

and earned value; allocation of resources; assigning resources and project costs; tracking progress; and sharing of project information. Prereq: Working Knowledge of Windows. Concurrent enrollment in BUS 2320 recommended. S

CIS 1500 Database Management Systems

3 credits; 3 classroom hours/week; 0 lab hours/week

Explores issues related to the design, development, and use of computer databases. Topics covered include: database models, database design methodologies, data normalization, SQL instruction, and implementation issues. Students develop databases using several database products, which may include Access and SQL Server. Prereq: CS 1100 or equivalent experience. CIS 1150 strongly recommended. F, S

CIS 2189 Internship: Information Technology

2-4 credits; hours arranged

Provides a supervised work experience with computer and information systems oriented toward projects utilizing skills and knowledge in programming languages, database development, management information systems, or related computer science functions. The experience is intended to result in new learning and increased capabilities for the intern and the completion of authentic work for the sponsoring organization. Internships may be arranged for 2, 3 or 4 credits upon the mutual agreement of the student, instructor and sponsoring organization. Placement depends on student qualifications and a successful interview for a particular position. Interns are required to abide by all policies governing employees and meet expectations for regular employees. Prereq: Permission of instructor, available position, approval of sponsor. F, S, Su

CIS 2205 Internet

2 credits; 2 classroom hours/week; 0 lab hours/week

Introduces the student to the Internet as an information resource. The student will use a wide range of Internet tools and will develop skills and techniques to use and search the Internet both efficiently and effectively. F, S

CIS 2207 Web Publishing with Front Page

1 credit; 1 classroom hours/week; 0 lab hours/week

Introduces Web page development for non-programmers, using Microsoft FrontPage. Text, images, tables, frames, forms, and hyperlinks will be incorporated into page designs that will be published on the Web. Prereq: Knowledge of Windows and the Internet. F, S

CIS 2210 Introduction to Macromedia Flash

2 credits; 2 classroom hours/week; 0 lab hours/week

Introduces the software Macromedia Flash, which is a graphics package used to create and add animations to Web pages. Topics include: creating and manipulating shapes, working with colors, inserting text, using layers, creating basic animations, using interactivity, including sound objects, and publishing to the Web. This course is intended for the student who wishes to add animations or a higher level of interactivity to Web pages. Prereq: Previous knowledge of Windows operating system and use of microcomputer. Previous experience in Web page authoring software recommended such as CIS 2207. F, S

CIS 2280 Special Topics in Computer Information Systems

1-4 credits; 1-4 classroom hours/week; 0 lab hours/week

Studies new and emerging computer information systems topics, systems, software packages, applications, management tools, and problem solving approaches. Specialized topics and applications will be determined in advance by the instructor and published in the class schedule. Prereq: To be determined by the specialized topic and published in the class schedule F (V), S (V)

COMPUTER NETWORKING AND TECHNOLOGY

About Computer Networking Technology

Courses in Computer and Network Technology provide comprehensive, in-depth knowledge and skills to design, manage, secure and troubleshoot network systems. Topics range from setting up a networked computer for an individual user to understanding how to securely manage a remote server located in another part of the world. Courses can be taken to enhance professional knowledge in a particular technology such as security, wireless or I.P. telephony as well as to prepare for a career in the field by completing a two-year degree. In addition, all course objectives are aligned with related industry certification exams. See the Programs of Study section of this catalog for details about the degree and certificates. Courses are described below.

Course descriptions

CNT 1000 IT Career Success Skills and Strategies

2 credits; 2 classroom hours/week; 0 lab hours/week

Prepares information technology (IT) students to enter the IT job market or successfully transition into a new career in the IT field. Students will learn effective IT job search skills as well as strategies that will serve to enhance their IT careers once they have obtained employment. S, Su (V)

CNT 2189 Internship Information Technology

2-4 credits; hours arranged

Provides a supervised work experience utilizing and extending the skills learned in CNT networking and security courses. The experience is intended to result in new learning and increased capabilities for the intern and the completion of authentic work for the sponsoring organization. Internships may be arranged for 2, 3, or 4 credits upon the mutual agreement of the student, instructor and sponsoring organization. Placement depends on student qualifications and a successful interview for a particular position. Interns are required to abide by all policies governing employees and meet expectations of regular employment. Prereq: Permission of instructor, available position, and approval of sponsor. F, S, Su

CNT 2300 PC Hardware and Software (A+)

3 credits; 2 classroom hours/week; 2 lab hours/week

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. Students learn how to assemble and configure a computer, install operating systems and software, and troubleshoot hardware and software problems. This course helps students prepare for CompTIA's A+ certification exam, which covers the knowledge and skills essential for becoming a successful computer technician. F, S

CNT 2310 Server and Network Operating Systems (Server+ Certification)

3 credits; 2 classroom hours/week; 2 lab hours/week

Provides an intensive introduction to multi-user, multi-tasking network operating systems. Characteristics of the Linux, Windows 2000, NT, and XP network operating systems will be discussed. Students will explore a variety of topics including installation procedures, security issues, back up procedures, and remote access. Helps prepare students for Comp TIA's Server + exam. Prereq: CNT 2300 or equivalent experience. F, S

COURSE DESCRIPTIONS

CNT 2311 Administering Linux Operating Systems

3 credits; 2 classroom hours/week; 2 lab hours/week

Provides basic installation, operation, security, troubleshooting and basic Linux hardware services for the Linux operating system on workstations and servers. This course helps students prepare for CompTIA's Linux+ certification exam, which covers the knowledge and skills essential for becoming a successful Linux administrator. **F (V), S, Su (V)**

CNT 2401 Administering Windows Operating System

2 credits; 2 classroom hours/week; 0 lab hours/week

Covers the features and procedures to deploy, support and troubleshoot the current dominant version of MS Windows desktop operating system in a variety of stand-alone and network operating system environments. Students will develop awareness of the issues and specifications needed to effectively plan implement and manage deployment of the current operating system. Prereq: CIS 1105 or CS 1100 or equivalent Windows OS experience. **F, S**

CNT 2410 Managing a Windows Server Environment

2 credits; 2 classroom hours/week; 0 lab hours/week

Provides students with the knowledge and skills to manage accounts and resources in the dominant version of the Microsoft Windows Server environment. The course is intended for systems administrator and systems engineer candidates who are responsible for managing accounts and resources. These tasks include managing user, computer, and group accounts; managing access to network resources; managing printers; managing an organizational unit in a network based on Active Directory service; and implementing group policy to manage users and computers. Prereq: CNT 2401 or equivalent Windows OS experience. **F, S**

CNT 2420 Implementing a Windows Server Network Infrastructure

2 credits; 2 classroom hours/week; 0 lab hours/week

Provides students with the knowledge and skills to implement, manage, and maintain a Microsoft Windows network infrastructure. These competencies include the provision of features such as Dynamic Host Configuration Protocol (DHCP), Domain Name System (DNS), and Windows Internet Name Service (WINS); securing Internet Protocol (IP) traffic with Internet Protocol security (IPSec) and certificates; implementing a network access infrastructure by configuring the connections for remote access clients; and managing and monitoring network performance. Prereq: CNT 2410, Managing a Windows Server Environment. **F, S**

CNT 2430 Planning a Windows Directory Infrastructure

2 classroom hours/week; 0 lab hours/week

Includes a comprehensive overview of the technologies and strategies used to accurately and securely move data within a Microsoft Windows network. Focuses on TCP/IP addressing using DHCP, DNS and WINS. Also covers best practices for providing network access. Prereq: CNT 2410. **F**

CNT 2440 Implementing Active Directory Services

2 credits; 2 classroom hours/week; 0 lab hours/week

Provides students with the knowledge and skills to successfully plan, implement, and troubleshoot a Microsoft Windows Active Directory directory service infrastructure. The course focuses on the forest and domain structure, Domain Name System (DNS), site topology and replication, organizational unit structure and delegation of administration, group policy, and user, group, and computer account strategies. Prereq: CNT 2410. **F, S**

CNT 2450 Designing Security for Microsoft Networks

1 credit; 1 classroom hours/week; 0 lab hours/week

Provides the knowledge and skills to design a secure network infrastructure with a Microsoft network environment. Includes creating the design team, modeling threats, and analyzing security risks in order to meet business requirements for securing computers in a networked environment. The course encourages decision-making skills through an interactive tool that simulates real-life scenarios that students may encounter. Prereq: CNT 2401, CNT 2410, and CNT 2420; or equivalent experience. **F, S**

CNT 2460 Managing Microsoft Exchange Server

2 credits; 2 classroom hours/week; 0 lab hours/week

Provides students with the knowledge and skills that are needed to update and support a reliable, secure messaging infrastructure that is used to create, store, and share information using Microsoft Exchange Server. The course includes substantial applied practice that assists students in becoming proficient in the skills that are needed to update and support Exchange Server in medium-to-large environments (250 to 5,000 users) with multiple physical locations, mixed-client connection protocols, and wireless and Internet messaging connectivity. Prereq: CNT 2410 and CNT 2420 or equivalent experience. **F, S**

CNT 2510 Networking Essentials

3 credits; 2 classroom hours/week; 2 lab hours/week

Introduces students to the overall technology and design of networks. The course focuses on network terminology and protocols, local-area networks (LANs), wide-area networks (WANs), Open System Interconnection (OSI) models, cabling, cabling tools, routers, router programming, Ethernet, Internet Protocol (IP) addressing, and network standards. Networking Essentials is the first of the four courses leading to the Cisco Certified Network Associate (CCNA) designation. This course is equivalent to CS 1104, and either, but not both courses will apply toward degree requirements at Inver Hills. Prereq: Experience with computer operating system and Internet browser. **F, S, Su**

CNT 2520 Network Routers and Routing Fundamentals

3 credits; 2 classroom hours/week; 2 lab hours/week

Focuses on initial router configuration, Cisco IOS Software management, routing protocol configuration, TCP/IP, and access control lists (ACLs). Students will develop skills on how to configure a router, managing Cisco IOS Software, configuring routing protocol on routers, and set the access lists to control the access to routers. Network Routers and Routing Fundamentals is the second of four CCNA courses leading to the Cisco Certified Network Associate (CCNA) designation. Prereq: CNT 2510 or CS 1104, or equivalent experience in networking. **F, S, Su**

CNT 2530 Switching Fundamentals and Intermediate Routing

3 credits; 2 classroom hours/week; 2 lab hours/week

Covers concepts and skills in advanced IP addressing techniques (Variable Length Subnet Masking [VLSM]), intermediate routing protocols (RIP v2, single-area OSPF, EIGRP), command-line interface configuration of switches, Ethernet switching, Virtual LANs (VLANs), Spanning Tree Protocol (STP), and VLAN Trunking Protocol (VTP). Particular emphasis is given to students being able to demonstrate the ability to apply competencies from CCNA 1 and 2 to a network and be able to explain how and why a particular strategy is employed. Switching Fundamentals and Intermediate Routing is the third of four courses leading to the Cisco Certified Network Associate (CCNA) designation. Prereq: CNT 2520. **F, S, Su**

CNT 2540 Wide Area Network Technologies

3 credits; 2 classroom hours/week; 2 lab hours/week

Develops knowledge and skills in the areas of advanced IP addressing techniques (Network Address Translation [NAT], Port Address Translation [PAT], and DHCP), WAN technology and terminology, PPP, ISDN, DDR, Frame Relay, network management, and introduction to optical networking. Particular emphasis is given to students being able to demonstrate the ability to apply knowledge from CCNA 1, CCNA 2, and CCNA 3 to a network and to be able to explain how and why a particular strategy is employed. In addition, the student will prepare for taking the CCNA Exam. Wide Area Network Technologies is the last of four courses leading to the Cisco Certified Network Associate (CCNA) designation. Prereq: CNT 2530. **F, S, Su**

CNT 2611 CCNP - Building Scalable Cisco Internetworks (BSCI) V3.0

3 credits; 2 classroom hours/week; 2 lab hours/week

Develops professional-level skills in CCNP routing protocol for building Enterprise level router networks and applications. Integrates Advanced Technologies. Prereq: CNT 2540 or CCNA Certification. **F, S**

CNT 2621 CCNP - Implementing Secure Converged Wide Area Networks (LSCW) V1.0

3 credits; 2 classroom hours/week; 2 lab hours/week

Develops ability to secure and expand the areas of enterprise networks to teleworkers and remote sites. Focuses on securing remote access and VPN client configuration. Prereq: CNT 2540 or CCNA Certification. **F, S**

CNT 2631 CCNP - Building Cisco Multilayer Switched Networks (BCMSN) V3.0

3 credits; 2 classroom hours/week; 2 lab hours/week

Develops advanced skills in building enterprise level switched networks and applications. Integrates Advanced Technologies such as VoIP and Wireless. Prereq: CNT 2540 or CCNA Certification. **F, S**

CNT 2641 CCNP - Optimizing Converged Cisco Networks (OCN) V1.0

3 credits; 2 classroom hours/week; 2 lab hours/week

Develops skill in optimizing and providing effective QOS techniques in converged networks operating voice, wireless, and security applications. Prereq: CNT 2540 or CCNA Certification. **F, S**

CNT 2710 Wireless LAN Technology

3 credits; 2 classroom hours/week; 2 lab hours/week

Provides a comprehensive overview of the design, planning, implementation, operation and troubleshooting of Wireless LANs. Includes theoretical foundations of the technology as well as implementation of wireless technology in various application contexts. Special emphasis is given to security and best practices within an existing local area network. Prereq: CNT 2520 Router Configuration. **F, S**

CNT 2720 Orientation to IP Telephony

1 credit; 1 classroom hours/week; 0 lab hours/week

Identifies and explains the transformation of voice and data technology into a converged IP-telephony environment. Topics in this course will include the origin of email and IP Telephony, analysis of the OSI model, and various topics related to voice operations in the enterprise. **F, S**

CNT 2722 Building the Foundation to IP Telephony

3 credits; 3 classroom hours/week; 0 lab hours/week

Applies the core principles of voice and data technology as they integrate with IP Telephony architecture. Topics included in this course will be modifying the LAN, MAN, and WAN to accommodate IP Telephony and translating the various layers in the OSI model. Quality of Service (QoS) will be described as well as cabling issues for IP Telephony in the enterprise. Prereq: CNT 2720. **F, S**

CNT 2725 Quality of Service (QoS)

3 credits; 2 classroom hours/week; 2 lab hours/week

Covers the design and implementation of a quality of service structure to prioritize voice and data applications across the network. In addition, students will properly configure the LAN and WAN architectures to support voice, video, and data convergence in the enterprise network. Prereq: CNT 2722. **F (V), S (V)**

CNT 2726 Cisco IP Telephony Integration (Part I)

3 credits; 3 classroom hours/week; 0 lab hours/week

Introduces students to the building and configuration of CISCO IP Telephony infrastructure. Cisco Call Manager and Call Manager Express will be utilized and each of these voice exchange systems will be configured and time will be spent determining when to best utilize each system in different situations. Prereq: CNT 2725. **F, S**

CNT 2728 Cisco IP Telephony Integration (Part II)

3 credits; 3 classroom hours/week; 0 lab hours/week

Introduces more advanced features of Cisco's Call Manager and Call Manager Express, integration of additional Cisco products such as Survivable Remote Site, Quality of Service configurations and resource allocations to support ad-hoc conferencing and transcoding resources. Prereq: CNT 2726. **F, S**

CNT 2731 IP Telephony: Enterprise Planning and Design

3 credits; 3 classroom hours/week; 0 lab hours/week

Analyzes and develops the business and technical requirements for an IP Telephony environment. In addition, the students will define basic and effective financial models, performing "Return on Investment" (ROI) and "Total Cost of Ownership" (TCO) calculations to support migrating to an IP Telephony architecture. Prereq: CNT 2728. **F, S**

CNT 2810 Network Security Fundamentals

3 credits; 2 classroom hours/week; 2 lab hours/week

Provides a comprehensive overview of the primary strategies and technologies used to defend a network including the knowledge and skills to design and implement essential technical solutions that provide the foundation level of security for all modern networks. Students will also learn the principles and practices of effective network policy and management practices. Prereq: CNT 2530 or CCNA certification or two years full time Cisco networking experience. **F, S**

CNT 2815 Network Security Advanced

3 credits; 2 classroom hours/week; 2 lab hours/week

Increases the scope and depth of the skills and knowledge acquired in Network Security Fundamentals by focusing on the advanced capabilities of network defense strategies including Virtual Private Networks (VPN), Host Intrusion Detection Systems (HIDS) and Network Intrusion Detection Systems (NIDS). Students will learn the evolution and current best practices of applying these technologies, which are universally deployed in networks of all sizes. Prereq: CNT 2810. **F, S**

COURSE DESCRIPTIONS

CNT 2820 Information Systems Security Fundamentals

3 credits; 2 classroom hours/week; 2 lab hours/week

Covers the broad framework and environment of information and computer security. The student will learn the strategies and techniques that are used to undermine the security of information and computer systems, and the multi-dimensional approach that is needed to protect computer systems from those vulnerabilities and threats. This is a broad-based course that combines a conceptual understanding of security with an introduction to some of the specific technology and tools that students will learn to use to counteract threats to their personal and work environments. This course does not cover deployment of specific network security technologies. Prereq: CNT 2520. **F**

CNT 2825 Information Systems Security Advanced

3 credits; 2 classroom hours/week; 2 lab hours/week

Provides participants with an in-depth understanding of the various methods used for attacking networks and computer systems. Students will learn the concepts, principles and techniques, including applied exercises, for attacking and disabling a network. These methodologies are intended to provide insight into the use of detection strategies and countermeasures needed to properly secure network servers, hardware and clients. Prereq: CNT 2820; Student should be prepared to authorize permission for a basic criminal background check prior to beginning this course. **F, S**

CNT 2830 Network Security Design

3 credits; 2 classroom hours/week; 2 lab hours/week

Integrates and provides extensive application of the knowledge and skills provided in previous security courses and serves as a capstone experience for the degree program. Students are presented with the opportunity and challenge of staging comprehensive attacks and designing networks that will withstand the varied attacks launched by others. The student must demonstrate the ability, in collaboration with others, to design and maintain a secure network in a hostile environment. When possible, groups will compete with college students from other states to enhance the realistic nature of this course. Prereq: CNT 2815 and CNT 2825. **S, Su**

COMPUTER SCIENCE

About the Computer Science Department

Lays the foundation for advanced study and entrance to bachelor's degree programs as well as providing firsthand experience working with major computer languages and functions. A.S. degree offered. For degree requirements and description, see the Programs of Study section of this catalog. Course descriptions for CS courses appear below.

Course descriptions

CS 1100 Introduction to Computers

3 credits; 3 classroom hours/week; 0 lab hours/week

Hands on experience using Windows, word processing, spreadsheets, the Internet, and data base software. An understanding of the principles underlying computer hardware and software, telecommunications, computers in business, ethics, social issues, computer security and future trends. Prereq: MATH 0094 or recommendation of MATH 0096/0099 on math assessment. **F, S**

CS 1104 Introduction to Networking

3 credits; 3 classroom hours/week; 0 lab hours/week

Is designed for managers and users interested in learning the basics of working with networks and internetworks. The topics covered are taken from CISCO's Semester 1 networking curriculum as well as the curriculum

providing preparation for CompTIA's Net+ Certification Examination. Prereq: CS 1100 or CIS 1105 or equivalent. **F, S**

CS 1110 Beginning Java

3 credits; 3 classroom hours/week; 0 lab hours/week

Is designed for students who intend to take CS 1126 (Java Programming) who do not have prior knowledge of any programming language. Topics covered include: the computer programming environment, fundamental language constructs (selection and repetition), introductory algorithms, program flow, logical expression, input from the keyboard, output to a printer, methods and objects, and arrays. Prereq: MATH 0096/0099 and CIS 1105 or equivalent. **F**

CS 1114 Visual Basic Programming

3 credits; 3 classroom hours/week; 0 lab hours/week

Emphasizes the VB controls and the programming interface and environment. Designed for students who are already experienced in an upper level programming language and who desire to learn Visual Basic. Topics include Event-Driven and Object-Oriented Programming, single and multiple forms, controls, properties, coding behaviors for events, writing code modules, adding graphics and database access. Prereq: CS 1110 or CS 1119 or experience in any high-level programming language. **F (V), S (V)**

CS 1118 Discrete Structures of Computer Science (MnTC 4)

4 credits; 4 classroom hours/week; 0 lab hours/week

Introduces theoretical concepts of computer science, number systems coding schemes, formal logic, sets and relations, induction, recursion, recurrences, graphs, proofs of program correctness, analysis of algorithms, asymptotic complexity measure at an advanced level. CS 1118 transfers into most 4 year computer science programs. Prereq: CS 1110 or CS 1119 or equivalent, and MATH 1118 or MATH 1127 or equivalent. **F**

CS 1119 Computer Programming With C++

4 credits; 4 classroom hours/week; 0 lab hours/week

Introduces computer problem solving using C++ and an object oriented approach. Topics include data types, control structures, I/O streams, functions, arrays, structures, pointers, searching, sorting, and recursion. Designed for those students with no prior programming experience. Prereq: MATH 0096/0099. **F, S**

CS 1121 Introduction to Unix

1 credit; 1 classroom hours/week; 0 lab hours/week

Introduces the Unix operating system using Linux. Topics include Unix shells, entering commands, Unix file system, Unix editors, file processing and shell programming. Unix utilities, programming tools (AWK, SED, PERL, and C/C++), X Window system. Prereq: Previous programming experience. **F**

CS 1125 Network Administration

3 credits; 3 classroom hours/week; 0 lab hours/week

Provides the necessary knowledge to perform competently in the role of network administrator or system manager. Practice with a Network operating system. Prereq: Students should have a complete understanding of a personal computer operation system. **F**

CS 1126 Java Programming

3 credits; 3 classroom hours/week; 0 lab hours/week

Introduces object oriented programming using Java. Topics include objects and classes, organizing data, inheritance, graphics and graphical user interfaces, API support. This course is designed for students who are familiar with basic programming concepts including branching, looping,

subroutines, and arrays. Prereq: CS 1110 or CS 1119 or any first computer language. **F, S, Su (V)**

CS 1127 Advanced Java Programming

3 credits; 3 classroom hours/week; 0 lab hours/week

Introduces advanced Java programming. Topics include Exception Handling, Multithreading, Multimedia, Files and Streams, JDBC, Servlets, RMI, Networking, Java Utilities package, Collections, JavaBeans. Prereq: CS 1126. **S**

CS 1136 Algorithms and Data Structures with Java

4 credits; 4 classroom hours/week; 0 lab hours/week

Introduces procedural and data abstraction. Includes elementary abstract data types including lists, stacks, queues, and their applications. Includes intermediate abstract data types including trees, priority queues, heaps, hash tables, and their applications. Topics also include recursion and Java collections framework. Prereq: CS 1126, and MATH 1118 or MATH 1127. **S**

CS 2000 Object-Oriented Analysis and Design I

3 credits; 3 classroom hours/week; 0 lab hours/week

Provides students with an understanding of the software development process with an emphasis on the requirements and analysis disciplines. Student will gain exposure to an interactive software development process and develop the requirements and analysis artifacts through use of the Unified Modeling Language (UML) and a visual modeling (CASE) tool. The emphasis of the course is on object-oriented and interactive methods; however, students will also gain exposure to other development methods and structured techniques. Prereq: CS 1119 or CS 1126. **F**

CS 2100 Object-Oriented Analysis and Design II

3 credits; 3 classroom hours/week; 0 lab hours/week

Extends the concepts and principles from Systems Analysis and Design I. Explores the theoretical and practical aspects of object-oriented design and its related principles. Students will experience first-hand the technical and non-technical issues that can arise with developing design artifacts for a software development project. Students will create a design solution for a software-based system in a team-based development environment. Through implementation and testing, students will validate the design. The course will also investigate emerging topics such as object-oriented patterns and refactoring. Prereq: CS 2000. **S**

CS 2250 HTML

1 credit; 1 classroom hours/week; 0 lab hours/week

Introduces Web page development using HTML. Students will learn to incorporate text, images, formatting, hyperlinks, tables, frames, and forms into Web pages. Not intended to fulfill a programming language prerequisite. Prereq: CIS 1105 or equivalent. **S**

CS 2251 Introduction to XML

3 credits; 3 classroom hours/week; 0 lab hours/week

Includes XML syntax, Document Type Definition (DTD), schema and parser, Cascading Style Sheet (CSS), Document Object Model (DOM), SimpleAPI for XML (SAX), XML Path Language (XPath), and Extensible Stylesheet Language (XSL). This course is designed for students who are experienced with HTML and are interested in learning mark up language beyond HTML. Prereq: CS 2250 or equivalent. **F**

CS 2260 Web Design and Development

2 credits; 2 classroom hours/week; 0 lab hours/week

Teaches students about the design, development, and use of the Internet and World Wide Web. Topics covered include: Internet basics and structure,

page authoring languages, user interaction support, establishing servers for others, business and marketing issues. The student will use the techniques to develop an Internet server system. Prereq: CS 2250 or HTML experience. **F (V), S (V)**

CS 2270 Interactive Web Development

2 credits; 2 classroom hours/week; 0 lab hours/week

Teaches students how to develop user interactive products on the World Wide Web. Topics covered include JavaScript client side programming, server side programming database access using IDC/HTX and ASP, COOKIES and SERVLETS. Prereq: CS 2260 and CS 1110 or 1119. **F (V), S (V)**

CS 2280 Special Topics in Computer Science

1-4 cr.

Studies new emerging computer science topics, languages, systems, applications and problem solving approaches. Specific topics and applications will be determined by the instructor and published in the class schedule. Prereq: Dependent upon the topic presented. Prerequisites will be published in the class schedule. **F (V), S (V)**

CONSTRUCTION MANAGEMENT

About Construction Management Department

Key courses provide fundamentals in construction management and, combined with courses in BIT and other areas, make up the associate degree (A.S.) and certificate options. For requirements and descriptions, see the Programs of Study section of this catalog. Course descriptions for CMSV courses appear below.

Course descriptions

CMSV 2870 Construction Management

3 credits; 3 classroom hours/week; 0 lab hours/week

Examines estimating, purchasing, bidding, scheduling, coordinating, expediting, and supervising work and dealing with public agencies, the design professions, suppliers, and subcontractors as these activities relate to the operation of a building contracting company. **F**

CMSV 2880 Construction Estimating and Scheduling

4 credits; 4 classroom hours/week; 0 lab hours/week

Explores the basic techniques and guidelines of estimating, and critical path method (CPM) and precedence diagramming method (PDM) scheduling. Assists students to develop skills to prepare cost estimates considering the important aspects of material takeoffs, labor, equipment, and time and cost scheduling. Includes practical, step-by-step cost estimating procedures that trace project progress on building project examples. Students will build CPM and PDM schedules for building construction projects. Prereq: BIT 1215 or equivalent knowledge. **F**

CMSV 2890 Building Organization and Technology

3 credits; 3 classroom hours/week; 0 lab hours/week

Introduces the varied technology that comprise buildings and an exploration into the sequential process of building construction. Theories of building types, functional organizations, and material applications are presented. This course also includes the identification of historic basis for and comparison between basic building materials and construction methods. The importance of building assembly sequences is also presented. **S**

COURSE DESCRIPTIONS

CREDIT FOR PRIOR LEARNING

About Credit for Prior Learning Courses

These specialized courses are offered as part of ASAP (Adult Success Through Accelerated Programs) and focus on academic planning and personal goal setting. Through ASAP, students can earn credit for life experience and through other convenient and specialized options. Admission to the program is required. ASAP students often choose to pursue the Individualized Professional Studies Degree (A.S.). See degree requirements and description in the Programs of Study section of this catalog.

Course descriptions

CBE 1102 Educational Planning and Assessment

3 credits; 3 classroom hours/week; 0 lab hours/week

Is designed for adults, students will become knowledgeable about concepts and processes in higher education, develop educational goals, an individualized degree plan based on personal and professional ambitions, and analyze varying life and work experiences that can translate into college level course work and credits. **F, S**

CBE 1103 Advanced Assessment

1 credits; 1 classroom hours/week; 0 lab hours/week

Students with extensive life and work experiences will further analyze and develop competence statements and narratives necessary for receiving college credit through the assessment process. Prereq: CBE 1102 or permission of instructor. **F, S**

CRIMINAL JUSTICE

About the Criminal Justice program

The Criminal Justice program at Inver Hills is designed (1) to prepare students for entry-level positions in corrections (such as correctional officers and probation/parole aides) at state, county, and local agencies; (2) to provide students with the academic foundation needed to pursue and complete a bachelor's degree in criminal justice studies. This A.S. degree comprises courses in sociology and other areas. See degree requirements and description in the Programs of Study section of this catalog. For course descriptions, see the academic departments listed alphabetically in this section.

Course descriptions

CJS 1150 Introduction to Criminal Justice

3 credits; 3 classroom hours/week; 0 lab hours/week

Explores the organization and history of local, state, and federal criminal justice agencies, theories of crime causation, and past and current criminal justice responses. **F, S, Su**

CJS 1152 Police and Community

3 credits; 3 classroom hours/week; 0 lab hours/week

Addresses the affective oriented aspects of contemporary law enforcement. The major focus is the exploration of how feelings, attitudes, and perceptions affect the interaction between police and their communities. **F, S**

CJS 1154 Juvenile Justice

3 credits; 3 classroom hours/week; 0 lab hours/week

Analyzes the juvenile justice system and its historical and philosophical development, including theories of social causes and effects of delinquency. Students will learn strategies for working with juveniles and the prevention

and investigation of delinquency, and have a working knowledge of Minnesota statutes pertaining to juveniles through the study of case law, report writing, skills exercises, and simulation. **F, S**

CJS 1156 Introduction to Corrections

3 credits; 3 classroom hours/week; 0 lab hours/week

Considers the history, theories and practices of corrections, which will be reviewed and applied to the Minnesota corrections system. **F**

CJS 1158 Criminal Behavior

3 credits; 3 classroom hours/week; 0 lab hours/week

Explores the biological, sociological, and psychological perspectives on the etiology of criminal behavior and applies them to selected case histories. **S**

CJS 1160 Constitutional Law for CJS Professionals

3 credits; 3 classroom hours/week; 0 lab hours/week

Covers the U.S. Constitution, not as a law student would approach the topic but as a student of criminal justice and/or law enforcement would require. The areas emphasized in this course include: limitations on police authority; limitations on detention, arrest, and use of force; limitations on search and seizure; wire interceptions; self-incrimination; freedom of speech; double jeopardy; fair trial practices; privacy; and, the death penalty. Additional topics include the U.S. court system, the U.S. Supreme Court, and constitutional politics. Prereq: CJS 1150. **F (V), S (V)**

CJS 1190 Field Experience: Criminal Justice

4 credits; 0 classroom hours/week; 0 lab hours/week

Accomplishes an off-campus learning experience in an agency providing a learning environment for students interested in the sociological perspective. Emphasis will be placed on experiences that relate to the student's career interests. In most instances these placements will be with law enforcement agencies and/or corrections. Prereq: CJS 1150, permission of the internship coordinator, and attendance at an orientation session during the semester prior to registering for CJS 1190. **F, S, Su (V)**

ECONOMICS

About the Economics Department

Offers students a background in economics with courses that can be incorporated into four-year degree programs.

Course descriptions

ECON 1100 Economics for Consumers (MnTC 2, 5)

3 credits; 3 classroom hours/week; 0 lab hours/week

Introduces students to the information and tools that will enable them to analyze and evaluate alternatives concerning major consumer issues with the goal of increasing personal well-being. Prereq: Recommended READ 0093/0094 or placement into READ 1100. **F, S**

ECON 1102 Survey of the World Economy (MnTC 5, 8)

2 credits; 2 classroom hours/week; 0 lab hours/week

Introduces students to the basic economic theory and the vocabulary and literature of economics as they apply to the global world, including theories of economic growth and the roles that international institutions play. Prereq: READ0093/0094 or placement into READ 1100 is recommended. **S**

ECON 1105 Principles of Macroeconomics (MnTC 2, 5)

3 credits; 3 classroom hours/week; 0 lab hours/week

Examines the performance of the U.S. economy in the early 21st century (national income accounting) as measured against historical performance, including an analysis of U.S. economic institutions and government macroeconomic policies. Prereq: Recommended READ 0093/0094 or placement into READ 1100. **F, S, Su**

ECON 1106 Principles of Microeconomics (MnTC 5, 8)

3 credits; 3 classroom hours/week; 0 lab hours/week

Introduces students to the supply and demand analysis of prices and production under different market structures, the role of government in a market economy, international trade and exchange rates, and income distribution and the pricing of economic inputs. Prereq: Recommended READ 0093/94 and MATH 0092. **F, S, Su**

EDUCATION

About Education courses

These courses make up a comprehensive, quality, pre-professional education curriculum that facilitates equal access to relevant upper division teacher education licensure programs as well as staff development opportunities for urban educators.

An education pre-major track can be integrated into either Associate in Arts (A.A.) or Associate in Science (A.S.) degrees with emphasis in Elementary, Secondary, or Early Childhood Education. For full descriptions of each emphasis, see the Degrees and Certificates and Programs of Study sections of this catalog.

Note: The Elementary Education emphasis includes MATH 1105 Math for Elementary Education (see under Mathematics course descriptions).

Course descriptions

EDU/HSER 1113 Introduction to Chemical Dependency

3 credits; 3 classroom hours/week; 0 lab hours/week

Provides an overview of the concepts of chemical dependency, including definitions, symptoms and signs of abuse and dependency; and an overview of history and trends. Describes the effects of each classification of drugs on the body, mind, and spirit, including impact on learning and memory. Students will develop an understanding of the process of assessment, intervention and treatment, education and prevention, referral, aftercare and relapse prevention. HSER 1113 and EDU 1113 are co-listed; department should be selected at registration. Credit will be given in only one department. **S**

EDU/HSER 1128 Guidance, Communication and Development of Young Children

3 credits; 3 classroom hours/week; 0 lab hours/week

Discusses developmental characteristics of infants, toddlers and preschool children with emphasis on stages of and individual differences in rates and styles of learning. Incorporates guidance principles and techniques in order for students to better understand the child's behavior and improve skills in working with a child in various situations. HSER 1128 and EDU 1128 are co-listed; department should be selected at registration. Credit will be given in only one department. **F (V)**

EDU/HSER 1130 Early Childhood Education

3 credits; 3 classroom hours/week; 0 lab hours/week

Provides an opportunity for students to explore the early childhood education field as caregivers of young children. Individuals will explore their role as a practitioner through self-exploration, classroom activities, and group activities. HSER 1130 and EDU 1130 are co-listed; department should be selected at registration. Credit will be given in only one department. **F (V)**

EDU/HSER 1132 Creative Activities for the Young Child

2 credits; 2 classroom hours/week; 0 lab hours/week

Presents the principles needed to plan creative experiences for infants, toddlers, and young children in all curriculum areas. Creative activities and experiences will be explored that enhance children's social, emotional, cognitive, language, and physical development. Materials fee required. HSER 1132 and EDU 1132 are co-listed; department should be selected at registration. Credit will be given in only one department. **F**

EDU/HSER 1133 Children's Health, Nutrition, Physical Development, and the Effects of Drugs

3 credits; 3 classroom hours/week; 0 lab hours/week

Focuses on the knowledge and skills needed to maintain a safe and healthy environment for young children. Appropriate activities and experiences for young children will be addressed around the topics of health, safety, nutrition, physical development, and the effects of drugs on children. HSER 1133 and EDU 1133 are co-listed; department should be selected at registration. Credit will be given in only one department. **F**

EDU/HSER 1136 Infant and Toddler Development

2 credits; 2 classroom hours/week; 0 lab hours/week

Focuses on developing a knowledge base about infant and toddler development emphasizing identification and creation of the learning environment. HSER 1136 and EDU 1136 are co-listed; department should be selected at registration. Credit will be given in only one department. **S**

EDU/HSER 1138 Children With Special Needs

2 credits; 2 classroom hours/week; 0 lab hours/week

Focuses on the knowledge and skills needed to create and maintain an integrated learning environment for children with special needs. An introduction and exploration of disabilities commonly found in infants, toddlers, and school age children. HSER 1138 and EDU 1138 are co-listed; department should be selected at registration. Credit will be given in only one department. **F**

EDU 1141 Learning Technology for Urban Education

3 credits; 3 classroom hours/week; 0 lab hours/week

Examines the historical and sociological impact of electronic media communication technology on American schooling. Learners will evaluate selected software applications as cognitive tools; apply current and future computer, multimedia, Internet/intranet, online learning, and audiovisual technologies to classroom instruction; and develop Web-based instructional materials to actively engage diverse learning styles. Technology components may include concept mapping, spreadsheets, Webquests, and other web searching techniques and Internet resources. **S**

EDU 1143 Multicultural Education/Human Relations

3 credits; 3 classroom hours/week; 0 lab hours/week

Emphasizes the development of classroom teachers who are multiculturally informed, gender fair, and disability aware. Examines issues such as racism, sexism, oppression, prejudice and discrimination. The course aims to increase students' capacity to identify, discuss, and reflect on the

COURSE DESCRIPTIONS

ethical dimensions of political, social and personal life and to examine the responsibility of classroom teachers to practice productive citizenship. Emphasis is on demonstrating multicultural competence required of all successful teachers working with diverse youth. Designed to meet State of Minnesota human relations requirement for teacher licensure. **F, S, Su**

EDU 1191 Introduction to Urban Education and Reflective Teaching

3 credits; 2 classroom hours/week; 2 lab hours/week

Analyzes the critical place of education in today's rapidly changing urban society. Course readings and discussion focus on understanding the historical and sociological foundations of urban teaching, with special emphasis on reflective practice, resiliency and diversity. Core topics include the impact of the nation's rapid racial and ethnic transformation on public schooling, case studies and best practices for understanding and empowering diverse learners, standards of effective teaching, and using the community as a resource. Students learn eFolio Minnesota software, a multimedia electronic portfolio, to document and reflect on their clinical observations. The course includes a minimum of 30 hours of guided in-school field experience and 10 hours of electronic portfolio development. **F, S**

EDU 1192 Urban Education: Grades K-8

3 credits; 2 classroom hours/week; 2 lab hours/week

Provides a perspective on teaching elementary students in an urban setting. Lecture/discussion, course readings, guest speakers, and clinical experiences focus on such issues as classroom management, cultural awareness, test anxiety, parent/teacher communication, transcendent issues, and the Minnesota Comprehensive Assessments of reading, writing, and mathematics. The course includes a minimum of 20 hours of guided in-school field experience. Prereq: EDU 1191. **S**

EDU 1193 Urban Education: Grades 6-12

3 credits; 2 classroom hours/week; 2 lab hours/week

Provides a perspective on teaching middle and secondary students in an urban setting. Lecture/discussion, course readings, guest speakers, and clinical experiences focus on such issues as classroom management, cultural diversity, test anxiety, substance abuse and school violence, transcendent and adolescent issues, graduation standards, and the Minnesota Comprehensive Assessments of reading, writing, and mathematics. The course includes a minimum of 20 hours of guided in-school field experience. Prereq: EDU 1191. **F**

EDU/HSER 1195 Urban Education: Early Childhood Birth to Grade 3

3 credits; 2 classroom hours/week; 2 lab hours/week

Gives students a perspective on teaching at the early childhood through third-grade levels in an urban setting. In addition to attending the weekly 2-hour discussions, students will complete 30 volunteer hours in an early childhood program or elementary school. The lecture/discussion groups and guest speakers will focus on such issues as curriculum, Minnesota Early Childhood Indicators of Progress, classroom management, various cultures, parent-teacher communication, classroom issues, and technology in the classroom. EDU 1195 and HSER 1195 are co-listed; department should be selected at registration. Credit will be given in only one department. **S**

EDU 2010 Teaching Emergent Readers

2 credits; 2 classroom hours/week; 0 lab hours/week

Focuses on theories and strategies related to emergent literacy in both pre-school and classroom settings. Models methods and appropriate learning activities, explores assessment tools and practices, and identifies appropriate books that promote beginning reading. Intended for prospective early childhood or primary teachers, school paraprofessionals, and other educators working with emergent readers. **Su**

EDU 2011 Teaching Reading Comprehension

2 credits; 2 classroom hours/week; 0 lab hours/week

Examines ways to improve students' reading comprehension. The class is intended for paraprofessionals, prospective teachers and other educators working with reading in the content area. The material presented will focus on expository text structures, vocabulary development, and the schema theory. Methods and appropriate activities will be modeled in class. Comparisons will be made between narrative and expository texts. **F**

EDU 2012 Essentials of Effective Instruction

2 credits; 2 classroom hours/week; 0 lab hours/week

Implements and internalizes effective practices in the areas of: Classroom and group management, time on task, interactive direct instruction, differentiated instruction, cooperative small group management, teacher feedback, and praise; while practicing the use of research. Educational assistance and other prospective educators interact with each other while they study research which: 1.) Examines the practices of more effective and less effective teachers, 2.) Looks at educators as reflective practitioners and, 3) Studies educators' knowledge. **Su**

EDU 2013 Instructional Strategies That Work

2 credits; 2 classroom hours/week; 0 lab hours/week

Defines researched-based best practices for accommodating diverse learning needs. It is designed to help educators who work with students most likely to fail due to conditions of poverty, limited English proficiency, learning disabilities, and other barriers, achieve classroom success. Instructional tools and strategies to help all students make academic gains will be modeled and practiced by participants. This course is designed for paraprofessional and prospective educators (K-12) working with academically diverse learners. **V**

EDU 2021 Thinking Mathematics I: Foundations

2 credits; 2 classroom hours/week; 0 lab hours/week

Applies mathematical research to how children learn mathematics and focuses on best practice strategies for mathematical instruction. Course content addresses mathematical concepts and skills in patterning, counting, addition, subtraction, problem solving and estimating. Provides hands-on practice in visualizing to make sense of these concepts and skills, and to work through strategies recommended for diverse learners. Thinking Mathematics is based on practical application of University of Chicago research by AFT's Education Research and Dissemination initiative. **Su**

EDU 2022 Thinking Mathematics II: Extensions

2 credits; 2 classroom hours/week; 0 lab hours/week

Applies mathematical research to how children learn mathematics and focuses on best practice strategies for mathematical instruction. Course content addresses mathematical concepts and skills in classification, multiplication, division, fractions and ratios. Provides hands-on practice in visualizing to make sense of these concepts and skills, and to work through strategies recommended for diverse learners. Thinking Mathematics is based on practical application of University of Chicago research by AFT's Education Research and Dissemination initiative. **Su**

EDU 2023 Thinking Mathematics III: Connections

2 credits; 2 classroom hours/week; 0 lab hours/week

Applies mathematical research to how children learn mathematics and focuses on best practice strategies for mathematical instruction. Course content addresses mathematical concepts and skills in rational numbers, ratios, rates, proportions, measurement, fractions, and decimals. Provides hands-on practice in visualizing to make sense of these concepts and skills, and to work through strategies recommended for diverse learners. Thinking Mathematics is based on practical application of University of Chicago research by AFT's Education Research and Dissemination initiative. **Su**

EDU 2120 TESOL Language and Culture

3 credits; 3 classroom hours/week; 0 lab hours/week

Incorporates two main themes pertinent to teaching English language learners: sociolinguistics and culture. Social and language implications of variables such as ethnicity, religion, status, gender, level of education and age will be explored. Students will learn how language is often used to categorize individuals in society. In addition, students will also learn about the history, culture and language implications of some of the major immigrant populations in the local geographic area. Prereq: Placement into ENG 1108 or permission of instructor. **F, S (V), Su (V)**

EDU 2121 TESOL: English Structure

3 credits; 3 classroom hours/week; 0 lab hours/week

Examines second language acquisition theories and grammar-learning stages and how they shape grammar instruction and curriculum. Core concepts include the understanding and pedagogical applications of English syntax, morphology and discourse. Students will also build their electronic portfolios by incorporating grammar lessons and activities. Prereq: Placement into ENG 1108 or permission of instructor. **F (V), S, Su (V)**

EDU 2122 TESOL Methods

4 credits; 3 classroom hours/week; 2 lab hours/week

Examines current policy trends and programs designed to teach English to speakers of other languages. Students also expand their knowledge of second language acquisition theories and focus on classroom implications/applications of how secondary languages are learned. A variety of classroom practices are reviewed as students explore how to differentiate instruction in order to best serve learners. Places strong emphasis on emergent literacy, process writing, and reading and literature instruction. Students also learn about best practices in content reading and writing instruction in addition to formal and informal assessment. Prereq: EDU 2120 and EDU 2121. **F (V), S (V), Su**

EDU/MUSC 2220 Music for the Whole Child (MnTC 2, 6A)

3 credits; 3 classroom hours/week; 0 lab hours/week

Focuses on the knowledge and skills needed to experience, understand, produce, discuss and enjoy various forms of music. Examines the characteristics of age-appropriate music activities and how music can integrate with the non-arts. Incorporates music concepts, basic structural elements, principles and vocabulary of music. The course assumes no musical background and is an introduction for prospective elementary educators, classroom paraprofessionals or teachers, and other students interested in learning how music works. Credit can only be earned in one department. To fulfill goal 6 enroll in MUSC 2220. **V**

EDU 2250 Contemporary Education Topics

1-3 credits; 1-3 classroom hours/week; 0 lab hours/weeks

Dependent on which issues or developments are selected for study. Topics and time allotments will vary according to course content and credits. **F**

EDU 2805 Introduction to Children's Literature

3 credits; 3 classroom hours/week; 0 lab hours/week

Introduces students to the study and evaluation of literature (picture books, folktales, fantasy, realistic fiction, historical fiction, young adult fiction, and nonfiction) written for children of all ages. Intended for students interested in a teaching career or in working with children, but is open to all interested students who meet the course prerequisite. Access to public libraries is required. Prereq: Placement in ENG 1108 or satisfactory completion of ENG 1108 prerequisite. **S**

EMERGENCY MEDICAL SERVICES

About the Emergency Health Department

Introduction to advanced courses. Beginning courses can prepare students to work as EMTs and later gain certification as Paramedics. The Inver Hills Program is the only one that offers an Associate in Science degree. Traditional track, certificate, and accelerated options available. For degree requirements and description, see the Programs of Study section of this catalog. Course descriptions for EHS courses appear below.

Course descriptions

EMS 1100 First Responder

3 credits; 3 classroom hours/week; 0 lab hours/week

Includes patient assessment, CPR, airway management including oxygen, adjunct airways and other resuscitation equipment, medical emergencies including seizures, strokes, heart attacks, poisonings and cover trauma management as well as bandaging, splinting and spinal immobilization. Designed for those who are first on the scene of an accident or medical emergency; intended for police officers, firefighters, and other public safety personnel. Students will be certified upon completion through the Minnesota Emergency Medical Services Regulatory Board. **F, S, Su**

EMS 1101 Emergency Medical Technician

6 credits; 4 classroom hours/week; 4 lab hours/week

Provides a basic training program in emergency medical care. It is designed to teach responsibility in emergency care of the critically sick or injured and to develop skills in the use of and care of all basic emergency equipment. The course includes topics such as patient assessment, trauma skills, care and recognition of heart disease, respiratory problems and other medical emergencies. This course consists of lecture, skills practice and clinical experience at a local hospital. This course is approved by the Minnesota Emergency Medical Services Regulatory Board. Participants who successfully complete the course will be eligible to take the National Registry of EMT's practical and written examinations for Registry Certification. Prereq: Current CPR Certification. **F, S, Su**

EMS 1105 Ambulance Operations

2 credits; 0 classroom hours/week; 4 lab hours/week

Designed as an experiential practicum course to provide advance instruction and experience with skills needed to work in the EMS field. Students lead a team of pre-hospital caregivers in realistic scenario simulations: Life-like role-plays in which students must work through all phases of an ambulance call. These simulations are multi-complex care situations that require the development of critical thinking and decision-making skills. Prereq: Current CPR Certification, EMS 1101 or equivalent, Physical Exam current with last year. Valid Driver's License. Pre or Co-requisite: PHED 1157. **F, S, Su**

EMS 1106 BLS Field Experience

2 credits; 0 classroom hours/week; 10 lab hours/week

Consists of supervised work experience in the emergency prehospital environment. Students respond and provide care during actual emergency situations with a 911 emergency ambulance system. Prereq: Written permission of Instructor, EMS 1105, PHED 1157. Must be a registered EMT-Basic. **F, S, Su**

EMS 1111 Introduction to Emergency Medical Services

1 credit; 1 classroom hours/week; 0 lab hours/week

Presents a general introductory course for students planning advanced studies in Emergency Medical Services. Students will learn the history, development and current model for the delivery of out-of-hospital medical services in the United States. **F, S, Su**

COURSE DESCRIPTIONS

EMS 1112 Paramedic Core Preparation

1 credit; 0 classroom hours/week; 2 lab hours/week

Prepares the student with basic skills necessary to be successful in the paramedic core courses. These skills include basic computer skills necessary to facilitate online course record keeping, online research, and the development of presentations for other health care personnel. The course will also prepare the student in basic medical calculations and the medical terminology to be able to effectively and accurately communicate with other allied health personnel, nurses and physicians. The course will introduce the student to problem-based learning methodology, utilizing all the aforementioned basic skills. Prereq: Current EMT -Basic certification or instructor permission. **F, S, Su**

EMS 1123 Emergency Response to Crisis

1 credit; 1 classroom hours/week; 0 lab hours/week

Provides a comprehensive course on crisis theory and the management of various behavioral, social, cultural, psychiatric, and interpersonal problems. Emphasis is placed on the mental health of emergency workers in both personal and professional settings. Prereq: Current EMT-Basic certification or permission of instructor. **F, S**

EMS 1140 Basic Emergency Medical Services Topics

1-4 credits.

Makes available specific topics of current interest in the Emergency Medical Services field presented through a variety of instructional methodology and media. Prereq: written permission of Instructor or EMT Basic Certification. **F, S, Su**

EMS 1189 Emergency Medical Services Internship

2 credits; hours arranged

Designed to give students work experience in the field of Emergency Medical Services (EMS). This course is an experiential exploration of the EMS career and of an organization doing such work. The student will have the opportunity to apply what is learned in the classroom to the working world. Students meet with the instructor to individually design objectives, outcomes and/or research topics. Students are matched with an internship work supervisor or mentor within an EMS organization. Although students may occasionally have limited contact with real patients, the emphasis for this course is non-clinical in nature. Prereq: Written Permission of EMS instructor or program director. **F, S, Su**

EMS 2228 Hospital Clinical I

1 credit; 0 classroom hours/week; 6 lab hours/week

Provides a hospital clinic experience with emphasis on performance of advanced life support psychomotor skills, comprehensive patient assessment and development of interpersonal skills in an actual patient care setting. Prereq: Acceptance into the Paramedic Core Curriculum. **F**

EMS 2229 Field Clinical I

1 credit; 0 classroom hours/week; 6 lab hours/week

Offers a competency based field internship with emphasis on patient assessment skills and treatment integration with an assigned mentor, in actual field operations. Prereq: EMS 1112 (or co-requisite). **F**

EMS 2230 Field Skills Lab I

2 credits; 0 classroom hours/week; 4 lab hours/week

Affords the student the opportunity to practice skills learned during the program in a mock scenario. Much of the class takes place in ambulances, simulating all aspects of an ambulance run from dispatch to final disposition at a mock hospital. Students have the opportunity to manage the call, staff, and utilize skills in a controlled environment to better prepare themselves for an actual call with real patients. Prereq: Acceptance into Paramedic Core Curriculum. **F**

EMS 2231 Introduction to Pre-hospital Pharmacology

2 credits; 2 classroom hours/week; 0 lab hours/week

Introduces pharmacologic interventions commonly used in the prehospital environment. It covers pharmacokinetics and pharmacodynamics of medications, administration routes and techniques, and dosage calculations. Other topics include blood and its components, acid-base balance and fluid balance. Major categories of medications such as antiarrhythmics, analgesics, catecholamines, neuroleptics, endocrinologics, nitrates and electrolytes will be introduced along with specific medications in each group. Prereq: Acceptance into Paramedic Core Curriculum or permission of instructor. **F**

EMS 2233 Shock and Trauma

2 credits; 2 classroom hours/week; 0 lab hours/week

Focuses on the pathophysiology of shock and the kinematics of trauma. An epidemiological approach will be used to show the effects of traumatic injuries on the human body and its systems. Heat and cold emergencies will also be reviewed. This course will utilize case study review to emphasize total patient care in a traumatic situation. Prereq: Acceptance into the Paramedic Core Curriculum. **F**

EMS 2234 Shock/Trauma Practicum

1 credit; 0 classroom hours/week; 2 lab hours/week

Focuses on skills and management of patients in shock resulting from traumatic injuries, and extreme temperatures. Prereq: EMS 2233. **F**

EMS 2235 Medical Emergencies Pharmacological Interventions I

3 credits; 3 classroom hours/week; 0 lab hours/week

Reviews in detail patient assessment and management of medical emergencies likely to be encountered in the pre-hospital environment. Emphasis is placed upon initial management of life-threatening emergencies, information gathering, review of body systems while prioritizing field care. Medical emergencies studied will include respiratory and cardiovascular problems. Basic and advanced concepts of EKG monitoring techniques and interpretation are also included. Prereq: Acceptance into the Paramedic Core Curriculum. **F**

EMS 2236 Medical Emergencies and Pharmacologic Intervention I (Practicum)

2 credits; 0 classroom hours/week; 4 lab hours/week

Focuses on skill development in the recognition, assessment and management of respiratory and cardiac emergencies. Includes how to use EKG monitors, transcutaneous pacing, defibrillators, and pulse oximetry. Also includes practice in patient assessment including scene management, interview techniques, examining body systems and developing a working diagnosis of patient condition. Co-Requisite: EMS 2235. **F**

EMS 2240 Field Skills Lab II

2 credits; 0 classroom hours/week; 4 lab hours/week

Affords the student the opportunity to practice skills learned during the program in a mock scenario. Much of the class takes place in ambulances, simulating all aspects of an ambulance run from dispatch to final disposition at a mock hospital. Students have the opportunity to manage the call, staff, and utilize skills in a controlled environment to better prepare themselves for an actual call with real patients. Prereq: EMS 2230. **S**

EMS 2244 Pediatrics and Obstetrics and Gynecological Assessment Interventions

2 credits; 0 classroom hours/week; 4 lab hours/week

Provides a comprehensive pediatric course involving obstetrical emergencies, childbirth, pediatric assessment, evaluation and stabilization. Pediatric medical emergencies and trauma are also discussed. It consists

of discussion and hands-on practice of simulated childbirth, neonatal resuscitation, pediatric advanced life support and medical emergency evaluation of the pediatric patient. This course incorporates material outlined in the PALS and PEPP courses, and certification is available to those successfully completing the requirements. Prereq: EMS 2235. S

EMS 2245 Medical Emergencies and Pharmacological Interventions II

2 credits; 2 classroom hours/week; 0 lab hours/week

Explores medical emergencies and their effect on patients in the prehospital environment. This course is a continuation of Medical Emergencies and Pharmacological Interventions I (EMS 2235) and covers topics such as the immune system, infectious diseases, neurological disorders, endocrine emergencies, anaphylaxis, environmental emergencies, seizure activity and the acute abdomen. This course also addresses special topics such as geriatric assessment and treatment, alcohol and drug abuse and psychiatric emergencies. Prereq: EMS 2235. S

EMS 2248 Hospital Clinical II

1 credit; 0 classroom hours/week; 6 lab hours/week

Provides a hospital clinical experience with emphasis on performance of advanced life support psychomotor skills, comprehensive patient assessment and development of interpersonal skills in an actual patient care setting. Prereq: EMS 2228. S

EMS 2249 Field Clinical II

2 credits; 0 classroom hours/week; 12 lab hours/week

Offers a competency based field internship with emphasis on patient assessment skills and treatment integration with an assigned mentor, in actual field operations. Prereq: EMS 2229. S

EMS 2250 Synthesis and Application of Advanced Life Support

1 credit; 0 classroom hours/week; 2 lab hours/week

Provides a summary review and evaluation of all core content in EMS courses. This course helps students apply theoretical and practical knowledge gained throughout the EMS program toward its completion and successful paramedic state and national certification. Prereq: Acceptance into Paramedic Core Curriculum or Accelerated EMS degree program. S

EMS 2252 Special Rescue Operations

2 credits; 1 classroom hours/week; 2 lab hours/week

Provides classroom and practical training in rescue operations and techniques including extrication, water rescue, high-level and sub-level rescue, search and recovery, multiple casualty situations, incident command, and hazardous material awareness. Also includes emergency driving skills practice. Prereq: Current EMT-Basic certification. Pre-or co-requisite EMS 1105 or instructor permission. S

ENGINEERING

About Engineering Courses

Basic to intermediate coursework that builds skills for paraprofessional careers in engineering and offers background for continuing study at a four-year institution.

Course descriptions

ENGR 1000 Orientation to Engineering

2 credits; 1 classroom hours/week; 0 lab hours/week

Provides information on what engineers do, aptitudes and skills engineers need, the Inver Hills engineering courses, and programs at transfer institutions. Course includes vocational interest assessment and introduction to basic engineering skills, such as calculator usage, measurement and

error analysis, and problem-solving methods. Students will be exposed to working in groups for solving problems. There will be a project involving engineering design methods. Recommended for any student considering engineering. F, S

ENGR 1060 Introduction to Digital Circuits and Logic Design

3 credits; 2 classroom hours/week; 2 lab hours/week

Studies binary systems, logic gates, Boolean algebra and functions, design of combinational and sequential logic circuits, adders, decoders, multiplexers, comparator counters, registers and memories. Prereq: A math course numbered above 1000 and a course in one of the following: computer science, electronics, or physics. V

ENGR 1100 Introduction to Engineering I

2 credits; 2 classroom hours/week; 0 lab hours/week

Introduces students to the profession of engineering, engineering specialties, and engineering theories. Topics include visualization and graphics, teamwork, mechanical dissection, project management, and engineering design. Prereq: MATH 0099 or placement into higher level MATH. V

ENGR 1101 Introduction to Engineering II

2 credits; 2 classroom hours/week; 0 lab hours/week

Provides exposure to software products commonly employed in engineering. Topics include basic electrical laws and concepts. A robot project, involving teamwork, project management skills, and documentation, will be required. Prereq: ENGR 1100 and MATH 1119 or 1127. V

ENGR 1200 Engineering Graphics

3 credits; 3 classroom hours/week; 0 lab hours/week

Introduces students to engineering representation and analysis of systems of projection, the coordinate system, graphical solution of space problems, intersections, and developments are included in this course. Also covers freehand graphics and introduction to simplified graphics techniques as applied to the design process, with special emphasis on problem-solving techniques and visual communication. Computer-Aided Design (CAD) will be introduced in the latter weeks of the course. F, S

ENGR 2020 Statics

3 credits; 3 classroom hours/week; 0 lab hours/week

Studies resultants of force systems, equilibrium, analysis of forces acting on structural and machine elements, and friction, second moments. Prereq: PHYS 1081 and MATH 1134. V

ENGR 2025 Dynamics

3 credits; 3 classroom hours/week; 0 lab hours/week

Studies kinematics of particles, systems of particles and rigid bodies. Studies kinetics of plane motion, work-energy, linear and angular impulse-momentum principles, vibrations. Prereq: PHYS 1081 and MATH 1134. V

ENGR 2041 Linear Circuits I

4 credits; 4 classroom hours/week; 2 lab hours/week

Explores Kirchhoff's Laws, mesh and nodal analysis, source transformation and superposition. Also studies Thevenin and Norton equivalents, natural and step responses of RL, RC, and RLC circuits, and sinusoidal steady state analysis. Introduces operational amplifier circuits. Prereq: MATH 2222 or concurrent enrollment in PHYS 1082. V

ENGR 2042 Linear Circuits II

4 credits; 4 classroom hours/week; 2 lab hours/week

Studies circuit analysis using phasors, single phase and three phase. AC power, delta and wye connected three phase circuits, transformers and

COURSE DESCRIPTIONS

magnetic coupling, series and parallel resonance, complex power and frequency, and two port networks such as transistors. Prereq: ENGR 2041. **V**

ENGLISH

About the English Department

From World Literature to Women in Literature and from Basic Writing to Creative Writing, English courses at Inver Hills prepare students to think critically and write academically about a wide range of topics. Classes meet transfer goals or personal growth objectives and include opportunities for foreign study. A student arts and literary magazine provides students the chance to share their best work.

Instructors bring a wide array of experiences and academic credentials into the classroom. Several are published authors; others have won awards for assessment and teaching.

Students interested in English as a major can easily transfer their coursework to a four-year institution. English majors go on to careers in teaching, advertising, law, journalism, and many other fields that require good communication skills.

Course descriptions

ENG 0096 Writing Fundamentals

3 credits; 3 classroom hours/week; 0 lab hours/week

Prepares students for academic writing through extensive practice with paragraph- and essay-length writing assignments. Also includes a review of grammar. Intended for students whose college assessment results suggest that further development of writing skills would be beneficial. Prereq: Placement into ENG 0096 as recommended by Accuplacer assessments. **F, S, Su**

ENG 0099 Introduction to Academic Writing

3 credits; 3 classroom hours/week; 0 lab hours/week

Prepares students for college-level academic writing through extensive practice with essay-length assignments. Students write informed, thesis-driven essays in response to academic texts and develop their understanding of grammatical rules. Intended for students whose college assessment results suggest that further development of writing skills would be beneficial. Prereq: Grade of C or better in ENG 0096, EAP 0096, READ 0090, or EAP 0090; or placement into ENG 0099 as recommended by Accuplacer assessments. **F, S, Su**

ENG/FS 1104 Introduction to Screenwriting: Narrative or Non-narrative Forms (MnTC 6B)

3 credits; 3 classroom hours/week; 0 lab hours/week

Covers several approaches to analyzing, developing, critiquing, and revising screenplays. Demonstrates the unique format and qualities associated with narrative (e.g. film scripts) or non-narrative forms/genres (e.g. documentary, industrial, educational, commercial, journalistic, corporate, etc.) Prereq: Placement into ENG 1108 or completion of ENG/EAP 0099. **V**

ENG/FS 1106 Literature in Film (MnTC 6B, 2)

3 credits; 3 classroom hours/week; 0 lab hours/week

Analyzes and compares major novels, short stories, memoirs, etc. with their film versions. Emphasizes the aesthetic and interpretive similarities and differences in the two art forms. Covers the unique elements of screen adaptation. **V**

ENG 1108 Writing and Research Skills (MnTC 1,2)

4 credits; 4 classroom hours/week; 0 lab hours/week

Emphasizes critical writing, reading, and thinking with attention to rhetorical elements such as argumentative structure, audience, and purpose. Students learn types of college writing and research techniques; report, synthesize, and draw conclusions from their readings; document the use of sources; and practice the writing process. Prereq: Recommended by Accuplacer assessment or Grade of C or higher in READ 0093/0094 and ENG 0099. **F, S, Su**

ENG 1111 Research Writing in the Disciplines (MnTC 1,2)

2 credits; 2 classroom hours/week; 0 lab hours/week

Emphasizes textual analysis of primary and secondary sources in various disciplines with focus on writing in students' academic and/or professional disciplines. Prereq: Grade of C or higher in ENG 1108. **F, S, Su**

ENG 1112 Creative Writing (MnTC 6A)

3 credits; 3 classroom hours/week; 0 lab hours/week

Provides guided practice in various types of creative writing with the emphasis on skills common to creative expression. Assists students in discovering and developing their own best medium for expression, whether fiction, poetry, drama, creative non-fiction (Emphasis may vary with instructor.) Students will identify select portions of writing for small and/or large group presentation. Prereq: C or better in ENG 1108 or consent of instructor. **F, S, Su**

ENG 1114 The Research Paper (MnTC 1, 2)

3 credits; 3 classroom hours/week; 0 lab hours/week

Emphasizes critical analysis of fiction or nonfiction texts, at least one book-length, resulting in a research paper that reflects analysis and synthesis of multiple sources. Prereq: Grade of C or higher in ENG 1108. **F, S, Su**

ENG 1116 Writing for the Web (MnTC 2)

3 credits; 3 classroom hours/week; 0 lab hours/week

Focuses on the principles of writing for readers in a web-based environment, analysis and application of the elements of attractive web page design as it relates to readability, organization of information that is scan-able and navigable, and presentation of information in a clear, objective style. Prereq: Placement by Accuplacer assessment into ENG 1108 or completion of ENG/EAP 0099 with a C or better. **S (V)**

ENG 1118 Technical Document Design, Editing, and Portfolio Preparation (MnTC 2)

3 credits; 3 classroom hours/week; 0 lab hours/week

Introduces the basic elements of document design as applied to various technical documents; includes technical documentation, data tables, graphs, and simple graphics; applies the principles and practices of editing technical and scientific documents for grammar, syntax, organization, style, emphasis, and audience awareness; provides practice in revising at both the structural and sentence levels; addresses the stylistic conventions of technical writing; provides instruction in compiling a professional writing portfolio. Prereq: Placement by Accuplacer into ENG 1108 or completion of ENG/EAP 0099 with a C or better. **F (V)**

ENG 1140 Introduction to Literature (MnTC 2, 6B)

4 credits; 4 classroom hours/week; 0 lab hours/week

Introduces students to the methods of examining and understanding poetry, drama, short stories, and novels. Prereq: Placement into ENG 1108 or completion of both ENG 0099 and READ 0093/0094 with a grade of C or higher. **F, S, Su (V)**