COURSE DESCRIPTIONS

Accounting 153
Agriculture & Natural Resources 154
Allied Health 158
Automotive & Machinery Technology 162
Art 162
Applied Technology 164
Biological Science 164
Business Administration 166
Business Technology 168
Chemistry 170
Child Development 171
College Skills 175
Construction Technology 176
Criminal Justice 178
Developmental Studies 180
Economics 181
Education 182
Emergency Medical Technology 184
English 185
Foreign Language 187
Geography 189
Health Care Management 189
Health Information Technology 189
History 190

Humanities 190
Information Technology 191
Manufacturing Technology 192
Mathematics 197
Music 199
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Philosophy 206
Physical Education 206
Physical Science 210
Political Science 211
Psychology 212
Religion 213
Social Science 214
Speech 215
Theatre 216
Welding Technology 216

Table 1. Course Prefix Meanings

AC = Accounting
AG = Agriculture & Natural Resources
AH = Allied Health
AM = Automotive & Machinery Technology
AR = Art
AT = Applied Technology
BA = Business Administration
BI = Biological Science
BT = Business Technology
CD = Child Development
CH = Chemistry
CJ = Criminal Justice
CS = College Skills
CT = Construction Technology
DS = Developmental Studies
EC = Economics
ED = Education
EM = Emergency Medical Technology
EN = English
FL = Foreign Language
GE = Geography
HC = Health Care Management
HI = History
HT = Health Information Technology
HU = Humanities
IE = Industrial & Energy Technology
IT = Information Technology
JN = Journalism
MF = Manufacturing Technology
MT = Mathematics
MU = Music
NR = Nursing
PE = Physical Education
PH = Philosophy
PL = Political Science
PM = Pharmacy Technician
PS = Physical Science
PY = Psychology
RE = Real Estate
RL = Religion
SO = Sociology
SP = Speech
TH = Theatre
WT = Welding Technology

F = the course is offered in the fall semester

Sp = the course is offered in the spring semester

Su = the course is offered in the summer semester

DD = the course is offered at the discretion of the department

ACCOUNTING

AC 136 Elementary Accounting I 3 credits

An introductory course in double-entry methods of accounting for service and merchandising enterprises. This includes the complete accounting cycle, special journals, notes and interest, accruals and deferrals, receivable, inventory and plant assets. (F, Sp, Su)

AC 137 Elementary Accounting II 3 credits

A continuation of Accounting 136, with emphasis on partnerships and corporations. The basics of financial analysis, cost accounting and managerial accounting are also included. Prerequisite: AC 136. (F, Sp, Su)

AC 156 Fundamentals of Tax Preparation 3 credits

An introduction to basic tax concepts designed to familiarize the student with frequently used tax forms, tax information and accounting procedures. (DD)

AC 186 Payroll Accounting 3 credits

This course covers the basics of payroll preparation and the filling out of forms that must be filed quarterly and annually by most businesses. Prerequisite: AC 136. (Sp, Su)

AC 206 Computer Accounting 3 credits

This course uses computers to apply the basic principles and procedures of accrual accounting with a sophisticated accounting software program. Computer accounting applications include general ledger, accounts receivable, accounts payable, invoicing, payroll, inventory and job cost. Prerequisite: AC 136. Basic keyboarding skill required. (Lab fee) (F,Sp,Su)

AC 210 Cost Accounting 3 credits

This course emphasizes the basic theory and procedures of allocating materials, labor and factory overhead through job order, process cost and standard cost accounting systems. Prerequisite: AC 137. (F)

AC 220 Income Tax Accounting 3 credits

This course covers the principles of federal income tax accounting as they apply to the individual, partnership and corporation. Prerequisite: AC 136 (Sp)

AC 236 Intermediate Accounting I 3 credits

An in-depth study of accounting procedures with emphasis on financial statements, inventory, and plant and intangible assets. Prerequisite: AC 137. (F)

AC 237 Intermediate Accounting II 3 credits

A continuation of Intermediate Accounting I, emphasizing corporate stocks and bonds, paid-in capital, income taxes, changes in financial position and analysis of financial statements. Prerequisite: AC 236. (Sp)

AC 240 Accounting Internship 6 credits

This course is designed to help the student gain experience in accounting. The program advisor will periodically visit and counsel the student who will be working in a suitable accounting position. Prerequisite: Completion of one year of accounting program. (F, Sp, Su)

AGRICULTURE & NATURAL RESOURCES

AG 101 Career Development in Agriculture & Natural Resources 1 credit

An overview of educational, personal and professional opportunities for NCMC students. Students will research career opportunities in the Agriculture and Natural Resources career pathway and develop a leadership and personal growth plan. Opportunities for leadership in community and professional organizations and the role of responsible citizens are also covered. (F)

AG 103 Soils & Fertilizers 3 credits

A basic study of soils formation, morphology, relationship to water, physical properties, chemical properties, organic matter, classification, erosion and soils relationship to the environment. Plant growth requirements, fertilizers and soil testing are also covered. (Sp)

AG 104 Soils & Fertilizers Laboratory 1 credit

Laboratory course including practical experiences related to soil texture, structure, morphology, and chemistry. Other topics include: land classification and legal descriptions, USDA Web Soil Survey, soil testing, and interpreting soil tests. Taken in conjunction with AG103. (SP)

AG 105 Plant Science 3 credits

An introductory course in agronomy; areas of study include plant morphology, growth processes, growth and development, crop investment, climate, and nutrition. (F)

AG 106 Plant Science Lab 1 credit

Lab activities involving plant and seed identification, seed germination, plant growth and plant nutrition; taken in conjunction with AG 105. (F)

AG 107 Animal Science 3 credits

An introductory course in animal science; areas of study include genetics, reproduction, nutrition, health and management of meat and companion animals. (F)

AG 108 Animal Science Laboratory 1 credit

Laboratory including practical experiences with anatomy and physiology, live animal and meat grading, animal reproduction, and animal health; taken in conjunction with AG 107. (F)

AG 109 Pork Production & Management 3 credits

A study of management decisions related to the breeding, feeding, marketing and management of commercial and purebred swine. (DD)

AG 112 Beef Production & Management 3 credits

A study of management decisions related to the breeding, feeding, marketing and management of commercial and purebred beef operations. (F)

AG 114 Crop Science 3 credits

A study of management decisions related to germination, seed selection, tillage and seedbed preparation, planning methods, fertility, pest control, harvest and storage, and marketing of grain, oilseed and forage crops. (Sp)

AG 116 Biomass Crops 3 credits

This course will introduce fundamental principles and practical applications of the properties and production of biomass feedstock, as well as harvesting, transportation, storage, and processing of biomass in the alternative fuels industry. Emphasis is placed on the study of biomass types, economic costs, sustainability, and employment issues. Students will be introduced to biomass gasification and conversion of energy and mass from one form to another. Student will examine the conditions that produce the greatest conversion yields and discover the most efficient manners of producing, collecting and transporting biomass for fuel production. (DD)

AG 117 Agricultural Mathematics 3 credits

An intensive review of the fundamentals of basic arithmetic, fractions, percentages, geometric and algebraic solutions as applied to the field of agriculture. Prerequisite: appropriate ACT or placement test score, or completion of DS 048. (Sp)

AG 124 Horses & Horsemanship 3 credits

A study of the scope and role of the light horse industry, breeds, development of the horse and its use, selection, breeding, feeding, anatomy and foot care, tack and unsoundness. Visits to stables and equine events will be included. (DD)

AG 125 Light Horse Production 3 credits

This course will explore in detail the important aspects of light horse production including breeding and reproduction, feeds and feeding, stable management, horse health and behavior, selection and judging for commercial or purebred horses. Prerequisite: AG 124. (DD)

AG 130 Farm & Environmental Safety 2 credits

A study of the mechanical, chemical, electrical, livestock structural and environmental hazards in a farm or natural resource environment. Students will demonstrate the safe operation of tractors, implements, lawn mowers, chain saws, atv's, and pickup with livestock trailer. Basic first-aid is also covered. Students earning passing scores will receive a certificate of training from the U. S. Department of Labor. (F, Sp)

AG 148 Agriculture Sales 3 credits

Students will study how to become effective sales representatives for agribusiness. (Sp)

AG 163 Agriculture Credit and Finance 3 credits

A survey of the principles, concepts and functions of credit and finance as related to agriculture. (Sp)

AG 215 Agriculture & Natural Resources Internship 6 credits

Applied training in a production agriculture operation, an agriculturally related business, or natural resource management agency following a prearranged training plan arrived at cooperatively by the employer, the student and the College, with experiences appropriate for the student and training enterprise. Periodic visits by instructor for conferences with the student and employer. Prerequisite: Instructor permission. (Sp, Su)

AG 224 Principles of Light Horse Training 2 credits

Lectures will pertain to horse behavior and training methods. Students will learn the principles, theory and practical experience of the training of foals up to two years old. (Sp)

AG 225 Advanced Light Horse Training 2 credits

Students will develop further expertise in training, managing, feeding and preparing two-year-old horses. Each student is assigned a horse to take through basic training stages from haltering to riding. (Sp)

AG 227 Feeds & Feeding 3 credits

A basic study of the fundamentals of animal nutrition and feeding requirements, calculation and preparation of balanced rations, and methods of feeding. (Sp)

AG 230 Agricultural Marketing 3 credits

Principles, methods and techniques utilized in marketing agricultural products. Special emphasis will be placed on the marketing options and their use. Guest speakers and field trips will be used in addition to discussions. (DD)

AG 240 Soil & Farm Water Management 3 credits

A study of planning water management practices for soil productivity, farm surveying, design, layout and maintenance of conservation practices utilized in cropland, pasture/hay land, woodland and land uses. (F)

AG 267 Agribusiness Operations 3 credits

Principles and methods involved in the operation of an agribusiness enterprise. Topics covered include: planning, personnel, control, budgeting and pricing. (DD)

AG 270 Farm Mgmt. & Records Analysis 3 credits

A study of economic principles related to the management and operation of farm businesses; purposes and methods of keeping farm records and analysis of the farm business; and computerized record keeping applications. Applied records assignments utilizing Excel and Quicken are included. (F)

ALLIED HEALTH

AH 101 Nurse Aide I 5 credits

Nurse Aide I is a course teaching basic principles, procedures and responsibilities for patient care and their association with common illnesses, rehabilitation processes and the principles of long-term care. The course is designed to teach skills in patient care that will qualify the student to assist the LPN or the RN in direct patient care. Any individual who is employable by a long-term care facility and who is to be involved in direct resident care shall be eligible to enroll in the course, which consists of 80 classroom hours and 100 hours of on-the-job training. On-the-job training and final clinical examinations are not included in AH 101. College certification will be awarded after successful completion of classroom and on-the-job training. State certification as a CNA will be awarded upon documented successful completion of classroom work, on-the-job training and final test with clinical practicum by State approved examiner. Also available as non-credit. (DD)

AH 102 Human Body: Health & Disease 3 credits

This course is designed to provide fundamental information in human anatomy and physiology for those entering health-related fields of study. It includes education regarding all the body systems, common pathology/ diseases, diagnostic and treatment modalities. (Does not meet science requirement for AA degree.) (F, Sp, Su)

AH 103 Medical Coding 3 credits

This course is designed to provide coding knowledge and skills by addressing specific coding issues within a particular area. Included is ICD-9-CM and ICD-10 overview; instruction in how to follow the organization of the CPT code book; how to use specialty coding. Prerequisite: AH 160. (F, Sp)

AH 105 Home Health Aide 5 credits

The purpose of the course is to ensure that the aide will receive instruction in assisting patients to achieve maximum self-reliance by delivering personal care; maintaining a safe, healthful environment; and collecting and recording appropriate information. The course will fulfill requirements for the Personal Care Aide (PCA), Advanced Personal Care Aide (APCA), Home Care Aide (HCA) or Home Health Aide (HHA). (DD)

AH 106 Math for Allied Health Sciences 3 credits

This course is primarily designed to provide the allied health student with a review of basic mathematics as well as methods of dosage calculation within the systems of weights and measures. Specific IV flow rate and pediatric formulas will be included. (F, Sp, Su)

AH 108 Emergency First Aid 1 credit

Emergency care procedures for nonmedical persons, including choking, CPR (cardiopulmonary resuscitation of adult, child, infant), stressing basic life support, hemorrhage control, splinting of fractures, and management of medical and environmental emergencies. This course is certified under the American Heart Association as Heartsaver First Aid. (DD)

AH 109 Restorative Nurse Assistant 3 credits

This course is designed to provide the basic orientation and necessary skills which will enable the practicing Certified Nurse Assistant (CNA) to be trained as a Restorative Nurse Assistant (RNA). The shift in emphasis from maintenance care to restorative care in the long-term care setting has created a need from trained paraprofessionals who are competent in the special knowledge and skills to assist in therapeutic rehabilitation as prescribed by the physical therapy, occupational therapy and speech therapy consultants. This course addresses the expanded role and places emphasis on increased interactions with therapy consultants, communication and monitoring responsibilities. The philosophy of rehabilitation as well as the concept of the RNA as a role model and resource person for all members of the staff is emphasized. (DD)

AH 110 Medical Technician (CMT) 4 credits

This course provides the knowledge, skills and techniques of drug administration in long-term care facilities as specified by the Department of Health & Senior Services. 60 hours lecture, 8 hours clinical practice and 2 hours final clinical practicum. Fee for practicum and certification not included in course fees. **NOTE**: Students must be high school graduates or equivalent, score a minimum of 8.9 on both vocabulary and comprehensive tests and a minimum score of 7.0 on mathematics concepts and application test on the "D" level of the TABE test, be employed as a C.N.A. for six months and listed on the Missouri State Nurse Assistant Register and have a letter of recommendation from their employer to enroll. (DD)

AH 115 Insulin Administration 0 .5 credit

This course prepares medication technicians in a skilled nursing or intermediate care facility or medication aides in a residential care facility I or II to administer insulin. The program is designed to present information on diabetes as it relates to symptoms, complication, proper treatment methods, types of insulin, techniques of insulin administration and methods of monitoring blood sugar levels in order to qualify to perform these procedures. Documentation of current CMT required in order to receive certification. (DD)

AH 120 CPR for Health Care Professionals 0.5 credit

Designed to acquaint the student with potential causes and methods of intervention in the event of sudden life-threatening situations. Includes adult and pediatric CPR and foreign body airway obstruction for adults and pediatrics and use of an AED. Meets American Heart Association standards. Also available as non-credit. (DD)

AH 160 Basic Medical Terminology 3 credits

A course designed for students who wish to enter the health care field or for those presently employed who wish to upgrade current skills of understanding and utilizing medically related terms. Approach is from the general use of roots, prefixes and suffixes of terms most frequently encountered and related to specific body systems. (F, Sp, Su)

AH 200 Principles of Pharmacology (Non-nursing) 3 credits

This course is the study of the principles of pharmacology and their application to allied health professionals (non-nursing). Mathematics skills are reviewed for the safe administration of medications. The nursing process, critical thinking and therapeutic communication in a community-based health care system are included. Cultural and ethnic variations are discussed. Emphasis is placed on committing to lifelong learning in the continually changing area of health care. (Lab fee) Students must have achieved a 16 or greater ACT in Math or 18 or greater ASSET in Math or 46 Compass–numerical skills or 0-45 Compass–Algebra for placement. Those not meeting this standard should seek guidance from their counselor.) (F, Sp)

AH 202 Health Insurance Billing 3 credits

This course is designed to introduce students to major nationwide medical insurance programs, provide students with a basic knowledge of national diagnosis and procedure coding systems, and simplify the process of filing claim forms. (F, Sp)

AH 210 Medical Assisting: Clinical Procedures 3 credits

This course teaches the medical assistant student the principles and importance of asepsis and infection control ; procedures for specimen collection and processing; how to do clinical office diagnostic testing procedures; principles of patient care; how to take a medical history; how to perform a basic physical examination; and the principles of radiology. (There is an additional two labs required, which is applied toward the 180 hour internship.) Prerequisites: AH 102, AH 200; co-requisite: AH 222. (F, Sp)

AH 211 Medical Law and Ethics 3 credits

This course is designed to expose the allied health professional to the dynamic legal and ethical aspects of employment in a health care setting. The various components of medical law and ethics will be explored in a way that is applicable to the health care profession. This course will provide insight to help the student gain confidence in dealing with legal and ethical problems that occur as a member of the health care system. (F, Sp, Su)

AH 212 Medical Machine Transcription 3 credits

This course is designed to refine machine transcription and to polish word usage, proofreading and punctuation skills. Also emphasized are vocabulary building, spelling and English review. Pre- or co-requisite: AH 160 & BT 160 or BT 180. (Lab fee) (Sp)

AH 221 Medical Office Internship 3 credits

This course is designed to place students in a variety of settings to allow on-the-job experience in various allied health science certificate programs. Some hours used to satisfy the requirement may be integrated with other classes in a program's curriculum, with the balance due by the end of this course. Prerequisites: Successful completion of all program course requirements with a GPA of 2.5 or greater and instructor permission. (F, Sp)

AH 222 Medical Assisting Internship 4 credits

This course is designed to place students in a variety of ambulatory care and acute care settings and is available to students who have completed the course requirements for the Medical Assisting A.A.S. and certificate programs. A 2.5 GPA is required to successfully complete the degree requirements. Prerequisite: Instructor permission. (F, Sp)

AH 223 First Aid & Emergency Procedures 2 credits

This course is designed to help students recognize an emergency, prepare for emergencies, recognize signs and symptoms of acute illness and injury, and how to care for the patient in each situation. (F, Sp)

AUTOMOTIVE & MACHINERY TECHNOLOGY

AM 200 Electrical Systems 3 credits

This course will equip students with an in-depth discussion of basic theory, safety, tools and major automotive electrical/electronic systems (e.g. charging, starting, ignition, lighting, accessories, instruments and computers). It will also cover voltage, current and resistance. The course will also focus on the future technician's ability to use manufacturers' service information, with emphasis given to diagnostic methods in the discussion of troubleshooting and coverage of testing equipment and OBD II.

AM 205 Electronic Diagnosis & Repair 3 credits

This course will provide students with a complete introduction to automotive engine repair and rebuilding. The course will cover the theory, diagnosis and repair of engine operating systems, intake and exhaust systems, cylinder heads, camshafts, valve trains, cylinder blocks and today's high-performance engines. The course will cover the theory of engine operation to include alternate power systems, such as hybrid vehicles, fuel cells and the latest electronic ignition (IE) systems.

AM 250 Mobile Heating, Ventilation & Air Conditioning (HVAC) 3 credits

This course will provide a complete introduction to automotive heating and air conditioning. Coverage of modern engine cooling and heating systems incorporates discussion of the requirements for a closed cooling system and the operation of various types of cooling fans. The course will include; the exact NATEF and ASE tasks so that students are well prepared for employment in the automotive trade.

ART

AR 102 Appreciation of the Arts 1-3 credits

Offered on occasion on various special topics, with specific content indicated by course subtitle. Credit hours determined by contact hours, activities and assignments as appropriate to content. Humanities credit. (DD)

AR 104 Art Appreciation 3 credits

A broad survey of the visual arts guiding the student toward an awareness of art in relation to the environment. Includes the examination of motivations for creating art, the study of various artistic processes and the chronological study of the history of art. Humanities credit. (F, Sp, Su)

AR 105 Design I 3 credits

An introductory course about two-dimensional design principles and elements and how they relate to the other arts. (F, Sp)

AR 106 Drawing I 3 credits

A basic course emphasizing the elements of drawing and the interpretation of visual properties of form and space through drawing. No painting or color involved. (F, Sp)

AR 109 Beginning Oil Painting 3 credits

Beginning Oil Painting introduces the student to the basic fundamentals of oil painting as a means for student development. Students will develop skills in using painting materials, as well as solving problems in basic compositions. (DD)

AR 111 Painting I 3 credits

Introduction to painting through exploration of a variety of techniques, focusing on acrylic and oil mediums. A great deal of attention will be paid to drawing skills in relation to the painting process. Emphasis on studio work. Prerequisite: AR 106. (DD)

AR 112 Water Color Media 3 credits

This course provides experience with selected water-based painting media: water color, casein, tempera and acrylics. (DD)

AR 205 Design II 3 credits

This course focuses on the characteristics of color within design. The application of color to the design process through various instruction and projects will engage students in the theory and practice of color design. Prerequisite: AR 105. (DD)

AR 206 Drawing II 3 credits

Experience in interpretation of the visual elements from all sources of design: landscape, plant life, man-made and geometric forms, and animal and human forms. Emphasis on creative problems and composition. Use of varied drawing media. Prerequisite: AR 106. (DD)

AR 211 Painting II 3 credits

Painting II provides a focus on the compositional, technical and stylistic approach to form and content in paint media. Emphasis on composition and expressive originality. Prerequisite: AR 111 (DD)

APPLIED TECHNOLOGY

AT 220 Precision Measurement 3 credits

This course will help students solve precision measurement and other types of math problems faced regularly by automotive technicians. This course will help students complete repair orders, solve problems and determine if their solutions fall within manufacturers' specifications.

AT 240 Industrial Hygiene & Safety 3 credits

This course outlines real-world illustrations and solutions in safety training that utilize performance-based occupational safety concepts. As well as workplace safety and training, the course covers changing the workplace culture while improving communication.

BIOLOGICAL SCIENCE

BI 100 General Biology 5 credits

This course focuses on the general principles of biology, including ecology, cell biology, biochemistry, genetics, microbiology, botany, and zoology. Structure, function and life application are stressed as components of each unit of study. Satisfies the Life Science General Education requirement; consult transfer catalog for specific program biology requirements. Lecture and laboratory. Prerequisite: DS 049 and DS 015 or appropriate placement test scores. (Lab fee) (F, Sp, Su)

BI 101 General Botany 5 credits

This course focuses on a fundamental study of plant structure, physiology, ecology, economic importance, life histories, and taxonomy. Satisfies the Life Science General Education requirement; consult transfer catalog for specific program biology requirements. Lecture and laboratory. Prerequisite: DS 049 and DS 015 or appropriate placement test scores. (Lab fee) (Sp)

BI 103 General Zoology 5 credits

A general study of animal phyla with a focus on structure, ecology, behavior, taxonomy, and defining characteristics. Satisfies the Life Science General Education requirement; consult transfer catalog for specific program biology requirements. Lecture and laboratory. Prerequisite: DS 049 and DS 015 or appropriate placement test scores. (Lab fee) (F)

BI 110 Ecology 5 credits

This course focuses on the general principles of ecology (populations, communities, and ecosystems) and field technique. The inter-relationships of the following natural resources will be stressed: air, water, soils, forests, grasslands, wildlife, fish, and endangered species. Satisfies the Life

Science General Education requirement; consult transfer catalog for specific program biology requirements. Lecture and laboratory. (Lab fee) (F)

BI 205 Current Topics in Biology 1 credit

Articles addressing timely topics in biology are studied in this course. Summarization, verification of information, experimental design, and study of human and environmental impact of the topics will be covered. (DD)

BI 210 Special Topics in Life Science 1-3 credits

A special topics course developed to further studies in Life Science. The subtitle of the course will indicate specific content. Credit varies from one to three hours depending on course design. This course may be repeated if the content changes. (DD)

BI 240 Human Anatomy 4 credits

This course is a study of the structure of the cells and tissues of the human integumentary, skeletal, muscular, nervous, endocrine, cardiovascular, lymphatic, respiratory, digestive, urinary, and reproductive systems. Lecture and laboratory. (F)

BI 241 Human Chemistry 3 credits

The emphasis of this course is the chemistry and physiology of the cells and tissues within the human integumentary, skeletal, muscular, respiratory, digestive, urinary, cardiovascular, immunological, endocrine, nervous, and reproductive systems. Lecture and laboratory. (Lab fee) (DD)

BI 242 Human Physiology 4 credits

This course is a study of the function including homeostatic mechanisms of the chemicals, cells, and tissues of the human integumentary, skeletal, muscular, nervous, endocrine, cardiovascular, lymphatic, respiratory, digestive, urinary, and reproductive systems. Prerequisite : BI 240 with a minimum grade of “C”. Lecture and laboratory. (SP)

BI 243 Microbiology 4 credits

This course is a study of microorganisms emphasizing morphology, reproduction, biochemical activities, culture techniques, pathogenicity and control. Lecture and laboratory. (Lab fee) (F, Sp, Su)

BUSINESS ADMINISTRATION

BA 101 Introduction to Business 3 credits

To introduce the student to the characteristics, functions and problems of the business world. (F, Sp, Su)

BA 103 Consumer Finance 3 credits

Provides information on income management including taxation, credit buying, bank services, insurance and investments. (DD)

BA 110 Current Issues in Business 3 credits

An orientation to practices and principles of marketing and industrial decisions that affect national and international businesses that contribute to social, economic and environmental changes. (F)

BA 150 Principles of Management 3 credits

An introductory course in management principles and functions. This course includes the history of management; the processes of planning, departmental organizing, directing, and controlling; and management's relationship with the community and the environment. (F, Sp, Su)

BA 154 Principles of Marketing 3 credits

Marketing foundations represent the basic skills and understandings of the marketing concept within the business environment and the management systems within which it is implemented. Concepts include the marketing mix, consumer behavior, market segmentation, targeted marketing and distribution. The development of a marketing plan is the focal point of the course. (F, Sp, Su)

BA 161 Human Resource Management 3 credits

This course is a comprehensive review of essential personnel management concepts, law, controversies, and techniques of success currently being used in business. Prerequisite: BA 150. (F, Sp)

BA 176 Business Management Internship 4 credits

Seminar-type courses which are based on the application of fundamental business principles and curriculum competencies at both a local internship training station and in the classroom. Must be taken sequentially thereafter. Membership to Delta Epsilon Chi is required. Prerequisite: Instructor permission. (F, Sp)

BA 204 Credit & Finance 3 credits

A study of the organization and operation of credit departments, consumer and commercial credit, collections, and business finance. (F, Sp, Su)

BA 221 Business Law 3 credits

An introduction to statutory and administration regulations governing business conduct for small businesses and individuals. Emphasis is placed on contracts, negotiable instruments, employer/employee relationship, sale of personal and real property and insurance. (F, Sp, Su)

BA 269 Entrepreneurship 3 credits

Each student identifies a business opportunity and prepares all the plans and analyses which would be necessary to develop the proposed business with instructional guidance and assistance. (F, Sp, Su)

BA 279 Special Topics in Business 1-3 credits

A course offered in response to a specific situation; a variable issue-oriented course which has its content described in a subtitle. Credit and prerequisites as announced. (DD)

BA 280 International Business 3 credits

This course introduces students to the world of international business and management by studying cultural influences, government, and business structures in our global economy. Students will also learn about trade relations, international finance and legal and labor agreements. Also covered, are topics on information needs, production systems, marketing and promotion and career planning. Prerequisites: BA 154 or BA 172. (F, Sp)

BA 281 International Business Travel 1 credit

This course if offered as a continuation of BA 280 International Business. The student will be given the opportunity to experience concepts learned in their International Business course by traveling abroad. The course will offer experiences in a business outside the United States, experiences in a different culture and language, and different cultural business practices. The trip will be offered during the Spring Break week only. Prerequisites: BI 110, BA 280, or BA 280 as a co-requisite with at least a C average in the course.

BA 285 Business Ethics 3 credits

This course is to serve as an introduction to the many topics involving ethics as they specifically relate to business. The student will also study major ethical theories and learn to apply these theories to contemporary issues. (DD)

BUSINESS TECHNOLOGY

BT 110 Business Mathematics 3 credits

This course is designed to give students basic arithmetic fundamentals that will apply in their personal and business lives. Requires minimum ACT, Asset or placement test scores. (F, Sp)

BT 130 Business Communications 3 credits

This course is designed to give the student a basic understanding of the principles involved in verbal and written business correspondence. (Lab fee) (F, Sp, Su)

BT 160 Microcomputer Applications I 3 credits

This course is designed to introduce students to software in the Windows environment, using current word processing, graphics presentation, spreadsheet and database software programs. (Lab fee) (F, Sp, Su)

BT 170 Database Concepts 3 credits

This course provides a comprehensive presentation of Microsoft Access 2007. Topics include creating, querying, and maintaining a database; creating a data access page, reports, forms, combo boxes; using OLE fields, hyperlinks, and subforms; creating an application system using the Switchboard Manager; creating a report using design view; customizing forms using VBA; working with charts and pivot table objects; administering a database, SQL and Access data, in other applications. Prerequisite: BT 160 or instructor approval. (Lab fee) (F, Sp)

BT 180 DigiTools 2 credits

This course is designed to prepare the student to work with tools in the digital world, starting with an in-depth use of practical keyboarding techniques. In addition, use of PDAs and tablet computers, cellular technologies, digitizers/scanners and other digital tools will be demonstrated and practiced on. (Lab fee) (F)

BT 190 Spreadsheet Applications 3 credits

This course is designed to give the student a basic understanding of the principles and software involved in spreadsheet applications. This course is designed to give each student the basic tools in 10-key. Much of the student's success is up to the individual as the software must be practiced. Prerequisite: BT 160. (F, Sp)

BT 200 Desktop Publishing 3 credits

This course is designed to prepare the student to create professional looking custom publications through real life exercises and examples. Publications for both print and internet will be examined and studied. (Lab fee) (F, Sp)

BT 210 Web Page Design I 3 credits

This course will introduce students to software using current desktop publishing and web page design software programs. Prerequisite: BT 160 or instructor approval. (Lab fee) (F, Sp)

BT 215 Web Page Design II 3 credits

This course is a continuation of the basic design principles used in Web Design. The course will also introduce new software, advanced animation and other advanced web features. Prerequisites: BT 160 and BT 210. (Lab Fee) (F, Sp)

BT 230 Office Procedures 3 credits

This course provides the skills needed to prepare the college trained administrative assistant to meet the requirements necessary for administrative positions in today's competitive job market. This course will help the student develop good decision making skills and exercise good human relations. Areas emphasized in this course include: today's electronic office, technology and procedures, document creation and distribution, research and organization of business reports, travel and conference planning, employment and career advancement. (Lab fee) Prerequisite: BT 160. (Sp)

BT 240 Employment Strategies 1 credit

This course is designed to prepare the student in beginning their job search. It will give them the tools that they need to utilize and to find information in today's competitive job market. (F, Sp, Su)

BT 250 Word Processing II 3 credits

This course is designed for the student to learn advanced word processing concepts and applications. The student will continue to receive hands-on experience on a sophisticated visual display word processing system. Prerequisite: BT 160. (Lab fee) (Sp)

BT 260 Microcomputer Applications II 3 credits

This course will offer students an introduction to an array of multimedia concepts and technology components. Prerequisite: BT 160. (Lab fee) (F, Sp)

BT 270 Business Technology Internship 4 credits

This course is designed to help the student gain experience in a real business situation so as to improve job performance of beginning workers. It is a capstone experience for student interested in the business technology area. Visitation by college faculty ensures coordination of instruction and on-the-job training. Prerequisite: at least 30 hours must be completed in the Business Technology program with at 3.0 GPA (F, Sp, Su)

CHEMISTRY

***NOTE**: Math and Physical Science courses require placement scores must be less than two years old.*

CH 107 Introduction to Chemistry 4 credits

A beginning chemistry course primarily for non-science majors. An introduction to the basic principles of chemistry emphasizing the importance of chemistry in the real world and its impact on society and the environment. This course satisfies the general education physical science requirement. Prerequisite: DS 049 or equivalent. Lecture and laboratory. (Lab fee) (F, Sp, Su)

CH 110 General Chemistry I 5 credits

A rigorous introductory chemistry course primarily for science, engineering and science education majors. An introduction to the elementary principles of modern chemistry emphasizing structure and properties of matter, stoichiometry, nomenclature and bonding. This course satisfies the general education physical science requirement. Lecture and laboratory. Pre- or co-requisite: MT 122. (Lab fee) (F, Su)

CH 112 General Chemistry II 5 credits

A continuation of General Chemistry I. Topics to be studied include properties of solutions, acids and bases, kinetics, thermodynamics, equilibrium and electrochemistry. Lecture and laboratory. Prerequisite: CH 110. (Lab fee) (Sp)

CH 204 Introduction to Organic Chemistry 4 credits

A short course in organic chemistry primarily for health science and medical technology majors. A survey of the different classes of organic compounds found in both the aliphatic and aromatic series with emphases on structure, nomenclature and reactions. The laboratory will emphasize the development of skills to identify different organic compounds. Lecture and laboratory. Prerequisite: CH110. (Lab fee) (DD)

CHILD DEVELOPMENT

NCMC offers Early Childhood Development courses to prepare students to work as paraprofessionals in the child care field. Course work is designed to meet the educational component needed for eligibility to apply for the Child Development Associate (CDA) through the Council for Professional Recognition in Washington, DC. Courses completed for the CDA Credential can be used for Directors requirements set forth by the Missouri Division of Health and Senior Services. These courses are not designed to transfer.

CD112, CD115 and CD120: Students who have not completed articulated coursework for any part of this group will be required to complete all three courses together. Students who have earned articulated credit from their high school through articulation agreements with North Central Missouri College or are transferring from other colleges/universities will have the option to take the remaining courses needed to complete their CDA or AAS requirements.

CD 101 Parents as Teachers 1 credit

This course is designed to help parents become better observers of their children's development, to acquaint parents with the basic neuroscience behind a child's development, and to help parents engage their pre-Kindergarten children in activities that promote language, cognitive, social/emotional and motor development.

CD 112 Early Childhood Growth & Development 3 credits

This course will help students understand the characteristics of children at different ages. It will provide an overview of their physical, cognitive, social, emotion, and moral development. Students will learn how to change teaching skills to fit the developmental needs and interests of children at different ages. This course will be taken in conjunction with CD 115 and CD 120 unless otherwise approved by the Director. At the completion of these three courses the student will be able to apply for the CDA (Child Development Associate). (DD)

***NOTE**: CD112, CD115 and CD120: Students who have not completed articulated coursework for any part of this group will be required to complete all three courses together. Students who have earned articulated credit from their high school through articulation agreements with North Central Missouri College or are transferring from other colleges/universities will have the option to take the remaining courses needed to complete their CDA or AAS requirements.*

CD 115 Professionalism in Early Childhood 3 credits

To establish a positive and productive relationship with parents as an Early Childhood Professional, professional documents, journals, conferences and observations along with the understanding of the occupation of parenting must be mastered in writing and professional knowledge. Must be taken in conjunction with CD 112 & CD 120 unless otherwise approved by the Director. (DD)

***NOTE**: CD112, CD115 and CD120: Students who have not completed articulated coursework for any part of this group will be required to complete all three courses together. Students who have earned articulated credit from their high school through articulation agreements with North Central Missouri College or are transferring from other colleges/universities will have the option to take the remaining courses needed to complete their CDA or AAS requirements.*

CD 120 Pre-School Administration & Mgmt. 3 credits

This course is a survey of childcare programs including planning, developing, and operating a day care center, licensing, curriculum, and parent involvement. Must be taken in conjunction with CD 112 & CD 115 unless otherwise approved by the Director. (DD)

***NOTE**: CD112, CD115 and CD120: Students who have not completed articulated coursework for any part of this group will be required to complete all three courses together. Students who have earned articulated credit from their high school through articulation agreements with North Central Missouri College or are transferring from other colleges/universitties will have the option to take the remaining courses needed to complete their CDA or AAS requirements.*

CD 130 Introduction to Early Childhood Education 3 credits

An introductory course that examines the issues, theories, standards and curriculum of early childhood education. Students will gain an understanding for and become more aware of the opportunities that exist to promote learning as they guide young children. (DD)

CD 140 Creative Activities for Children 3 credits

An early childhood course that will examine educationally appropriate materials, creative activities and developmentally appropriate environments for young children. Topics include planning and assessing learning activities, thematic teaching and constructivist theory, assessment and reporting, creating a stimulating environment for early childhood education. (DD)

CD 150 Special Topics in Early Childhood Education 3 credits

A course offered in response to a specific situation; a variable, issue-oriented course which has its content described in a subtitle. Credit and Prerequisites as announced. (DD)

CD 205 Health, Safety & Nutrition for the Young Child 3 credits

This course is designed to give information about current concepts in the field of health, safety and nutrition and their relationship to the young child. This course will prepare the early childhood educator to meet the physical needs of young children through the creation of a safe environment, planned routines, and positive experiences. (DD)

CD 207 Caring for Children with Special Needs 3 credits

This course will provide an overview of laws regarding special needs children, developmentally appropriate curriculum, and current issues related to special needs children. This course will also examine the different characteristics of children with special needs. (DD)

CD 209 Preschool Literature 3 credits

This course is designed to present a survey of children's literature, to establish guidelines for evaluating that literature, to help students become aware of the educational opportunities literature provides, and to develop educational experiences based on literature. (DD)

CD 211 Music for Children 3 credits

Students will learn how early childhood teachers can provide a wide variety of musical activities to stimulate and enhance a child's innate musical abilities. Students will become aware of all aspects of the music curriculum and will learn how to develop lesson plans incorporating these essential areas towards making music education fun, but skill-driven. (DD)

CD 213 Exploring Science & Math in the Early Childhood Setting 3 credits

This course covers theoretical foundation for teaching science and mathematics in the early childhood setting. Strategies for implementing, nurturing, assessing and supporting early childhood science and math learning environments will be covered. Concepts covered are based on the national Science Education Standards (NSES), the National Council of Teachers of Mathematics (NCTM) Principles and Standards for School Mathematics and Missouri Early Childhood Preschool Standards. (DD)

CD 220 Language Development & Early Literacy 3 credits

An overview of early literacy based on the Missouri Pre-K Literacy Standards. Students will learn about emergent literacy as emergent speaking, emergent writing, and emergent reading. Strategies for enhancing and assessing literacy curriculum in each of these areas will be discussed. Family literacy and its importance will also be included in the coursework. (DD)

CD 230 Child, Family & Community: Family-Centered Early Care & Education 3 credits

This course gives students the knowledge to provide a supportive educational environment for young children in cooperation between school, family/home and community. Included are the history of family-centered programs for children, families and teachers; history of family systems; basic principles related to community recourses; child rearing and parenting styles; methods of utilizing and communicating with families and the community. Cultural and socio economic factors and the realities of the changing family and society, as well as variations among parent education program types are considered. (DD)

CD 250 Child Care Observation 3 credits

Supervised observation in conjunction with classroom lecture. The students will meet with instructor six times throughout the semester for atotal of 18 hours of lecture/instruction. Students will observe one chile in a single facility for a total of 40 hours throughout the semester. The student with the teacher, field advisor, and parent approval will observe one child with various developmentally appropriate observation methods. The culminating experience for this course willb e the compilation of the observations into a full report on the cild's developmental level in each of the following areas: physical creativity, social, emotional, cognitive and language development.

The students will meet with the instructor at the end of the semester to share experiences and bring closure to the observation to prepare for the internship. Prerequisite: CD 112 , CD 115, CD 120 (DD)

CD 260 Child Care Practicum 3 credits

The student will actively participate, under supervision, in a developmentally appropriate childhood setting, for a total of 60 hours. The student will ultimately be responsible for implementation of activities and management of the classroom. The class will meet with the instructor four times throughout the semester. Prerequisite: CD 250. (DD)

COLLEGE SKILLS

CS 100 College Success 2 credits

This course is designed to teach students how to have a successful college experience, both academically and personally. The focus will be on the development of practical knowledge and skills to assist students toward that goal. Topics include time management, test taking, communication skills, study techniques, critical thinking, community and campus resources, and managing the personal and relationship issues that face many college students. (F, Sp)

CS 102 Freshman Seminar 1 credit

This course is designed to prepare the student to perform successfully in college by developing practical knowledge and skills. Areas of focus include: understanding of college policies and procedures, introduction and review of campus and on-line resources, and development of basic college skills such as managing time, reading textbooks for maximum learning, taking effective notes from lectures and books, maximizing text cores, thinking critically, listening effectively, communicating well both orally and in writing, and learning and applying library research techniques.

CS 105 Information Literacy 1 credit

This course is designed to teach students how to locate information efficiently, evaluate information critically, and utilize information effectively. The focus is on a basic understanding of the research process, the use of print and on-line resources, and the effective utilization of the Internet. (F)

CS 107 Critical Thinking in Core Courses 3 credits

Students learn fundamental concepts and skills for thinking about one's thinking and research strategies for increasing their information literacy. The concepts and skills become the foundation for developing a systematic process for thinking more critically and researching more effectively. The final step is to make the process a habit of mind by utilizing it in core courses.

CS 108 Multicultural Reading 1 credit

A self-study course that will help students develop comprehension, critical analysis, vocabulary and writing skills while considering a wide variety of multicultural topics including biographies, science and the world of work. (Pass/Fail) Prerequisite: student must score at a certain level on ACT, ASSET, SAT, Compass or complete DS 015. (F, Sp, Su)

CS 109 African-American Readings 1 credit

A self-study course that will help students develop comprehension, critical analysis, vocabulary and writing skills while considering the biographies of such influential African Americans as Maya Angelou, Thurgood Marshall, Nelson Mandela and Colin Powell. (Pass/Fail) Prerequisite: student must score at a certain level on ACT, ASSET, SAT, Compass or complete DS 015. (F, Sp)

CS 110 Speed Reading 1 credit

A self-study course designed to help students read more quickly while improving both their comprehension and their vocabularies. This course provides information, strategies and skills likely to produce a lifetime of more efficient reading. (Pass/Fail) Prerequisite: student must score at a certain level on ACT, ASSET, SAT, Compass or complete DS 015. (F, Sp, Su)

CS 111 Women's History Readings 1 credit

A self-study course that will help students develop comprehension, critical analysis, vocabulary and writing skills while considering various aspects of women's lives, including religion, social roles, employment and education. (Pass/Fail) Prerequisite: student must score at a certain level on ACT, ASSET, SAT, Compass or complete DS 015. (F, Sp)

CONSTRUCTION TECHNOLOGY

CT 107 Materials of Construction 2 credits

An introduction to the construction industry and basic skills needed in the area. Topics include tools, safety, basic construction processes as well as the legal, business and management aspects of the industry. Both new construction and remodeling will be covered.

CT 178 Construction Techniques I 5 credits

Techniques and procedures of construction with practical application relating to residential and light industrial structures for floor, wall, ceiling and roof components.

CT 179 Cabinet Making 3 credits

This course will cover cabinet making and woodworking techniques employed by custom cabinet makers and home woodworkers. The course content will follow the sequential order of the design and construction process. In addition to traditional materials and procedures, the course will cover the advances of technology for woodworking, including manufactured panel products, 32mm construction & European hardware.

CT 185 Residential Electrical Wiring 3 credits

The study of the National Electrical Code, materials and application of electrical wiring relating to residential construction.

CT 195 Residential Plumbing 3 credits

Techniques and procedures of plumbing with practical application relating to residential structures. Selection and installation of plumbing fixtures and piping.

CT 230 Roof Structural Systems 4 credits

A study of construction materials and methods with practical application relating to roof framing for residential units, emphasizing basic, structural systems, design factors, strength of materials and aesthetic values. Also encompasses roofing, roofing materials and application.

CT 236 Building Layout 2 credits

Methods of staking out a building on site, use of transit, methods of layout, and forming for concrete walks and drives. Also estimation of site preparation and grading.

CT 278 Construction Techniques II 5 credits

Techniques and procedures of construction with practical application relating to residential and light industrial structures for interior finish, stair construction, cabinets and remodeling.

CT 279 Heating, Ventilation & Air Conditioning (HVAC) 3 credits

This course covers the operation of refrigeration, air conditioning and heating systems. It will provide instruction for troubleshooting and servicing HVAC equipment as well as the correct methods of refrigerant handling. EPA Technician Certification and techniques needed to properly perform HVAC installation, service and repair is emphasized.

CRIMINAL JUSTICE

CJ 118 Procedural Law 3 credits

Laws of criminal procedure regulating law enforcement and criminal law process. This course will include a study of the fundamental concepts of constitutional and criminal law. Elements of local, state and federal jurisdiction, venue and procedure as they apply to law enforcement. Law of arrest, search and seizure. (Sp even years)

CJ 125 Liability & the Criminal Justice Officer 3 credits

Law of negligence and tort liability arising from police conduct. (F odd years)

CJ 126 Introduction to Criminal Justice 3 credits

Surveys of the philosophical and historical background of the criminal justice system. Principles of organization and roles of police and legal systems in relation to activities of local, state and federal agencies. Human relations and social control devices are also studied. (F)

CJ 140 Criminal Investigations 3 credits

A study of modern criminal investigation procedures including methods of investigation, sources of information, questioning and interviews, collection and preservation of evidence, preliminary and follow-up investigation, and case preparation. (F)

CJ 170 Introduction to Juvenile Law 3 credits

An examination of the origins, philosophy and objectives of the juvenile justice system. Studies the delinquent juvenile as an individual and the impact on society; investigates delinquency, causation, the role of the law enforcement officer, the juvenile officer, the juvenile court and juvenile corrections. (F)

CJ 218 Criminology 3 credits

An examination of theories of crime and its causes including interrelationships between specific crimes, types of offenders and correctional theories. (Sp even years)

CJ 219 Criminal Evidence 3 credits

Students will study the nature, types and degrees of criminal evidence; rules governing admissibility; competency; and relevancy of evidence. (Sp odd years)

CJ 226 Introduction to Corrections 3 credits

Historical analysis of the development of corrections and the influence of social thought and philosophy of this development. Current trends in corrections, court decisions and the role of corrections within the criminal justice system. (F)

CJ 235 Criminal Law 3 credits

Explores the origin, development and classification of substantive criminal law. This course will review the rules of evidence important at the operational level of law enforcement with emphasis on criminal procedures in arrest, use of force, and search and seizure. (F)

CJ 239 Police Organization and Management 3 credits

Introductory survey of current administrative methodology; reviews the organization of the police service, police functions, principles of police management and operational services within the police agencies. Will include the study of administrative theory as it relates to organizations within the criminal justice system. (Sp odd years)

CJ 245 Police Report Writing 3 credits

The development of written and oral forms of communication in the criminal justice system. This course will focus on the mechanics of written reports, interviewing, interrogation and testifying. (Sp odd years)

CJ 250 Criminal Justice Practicum 3 credits

Students participate with various public sector criminal justice agencies (e.g. Circuit Court, Juvenile Court, Probation and Parole, local police departments, etc.) in order to gain knowledge about the structure and function of public services agencies. The field placement must be program related. Prerequisite: Minimum of thirty hours course work in the program and permission of the instructor. (F, Sp, Su)

CJ 255 Interviewing and Interrogation 2 credits

The student will develop knowledge and working skills in the art of interviewing and interrogation. The course is designed for both in-service and pre-service law enforcement students. (Sp)

CJ 260 Constitutional Aspects of Criminal Justice 3 credits

Selected constitutional aspects of law enforcement including the law of arrest, search, freedom from electronic eavesdropping, self-incrimination and the right to counsel. (Sp even years)

DEVELOPMENTAL STUDIES

***NOTES**: DS courses are college preparatory and do not apply toward any degree requirement in any program at NCMC and are not designed to transfer. All Developmental Studies courses are graded Pass/Fail.*

Placement scores must be less than two years old.

DS 015 College Reading 3 credits

The course is designed to improve students' vocabulary, comprehension and reading rate, while emphasizing the importance of the key strategies and components necessary to read fiction, nonfiction and textbooks effectively. Students who score below a certain level on a placement test are required to complete this course. (Pass/Fail) (F, Sp, Su)

DS 020 Reading/Writing Improvement 5 credits

The course is designed to take advantage of the interrelationships between reading and writing to improve reading skills (comprehension vocabulary, reading rate) and writing proficiency. Course includes an introduction to writing paragraphs and essays combined with a review of grammar, sentence structure, punctuation, and spelling. ACT or ASSET; COMPASS scores must be on file. (Pass/Fail) (F)

DS 023 Spelling Improvement 1 credit

A self-study course designed to encourage spelling improvement through the study of spelling patterns and irregularities. This course provides information, strategies and skills likely to produce a lifetime of spelling growth. (Pass/Fail) (F, Sp, Su)

DS 024 Vocabulary Improvement 1 credit

A self-study course designed to encourage vocabulary growth through study of word parts and understanding words in context. This course provides information, strategies and skills likely to produce a lifetime of more efficient reading. (Pass/Fail) (F, Sp, Su)

DS 025 Writing Improvement 3 credits

An introduction to college writing with emphasis on the whole writing process and on building confidence as a writer. Students will progress from personal narratives to analytical essays; ACT or ASSET, Compass scores must be on file. (Pass/Fail) (F, Sp, Su)

DS 031 & DS 032 Basic Skills Lab 1 or 2 credits

This is a self-study course individualized by the Academic Resource Center Director or ARC Staff to assist students in the college success areas in which they have difficulties and/or with NCMC coursework. (Pass/Fail) (F, Sp, Su)

DS 048 Pre-Algebra 3 credits

Student learning outcomes include: whole number, fraction, and decimal operations and properties, ratios and proportions, signed number operations, basic geometry concepts, units of measurement and introduction to statistics. (Pass/Fail) (F, Sp, Su)

DS 049 Basic Algebra 3 credits

Student learning outcomes include: order of operations, solving linear equations and inequalities, introduction to graphing in a rectangular coordinate system, simplifying polynomial expressions, factoring and solving quadratic equations with an emphasis on problem solving. Placement testing or ACT within last two years required. (Pass/Fail) (F, Sp, Su)

DS 080 Introduction to Keyboarding 2 credits

This self-paced, hands-on computer course teaches students the alphabetic, numeric and symbol keys, as well as the 10-key pad. Students will develop speed and accuracy through the touch system. (Lab fee) (Pass/Fail) (F, Sp)

ECONOMICS

EC 223 Agriculture Economics 3 credits

An introduction to the basic concepts and issues of economics as they relate to the food and fiber industry and management of natural resources. Additional projects involving global agricultural trade are included. (Sp)

EC 252 Microeconomics 3 credits

An introduction to basic microeconomic fundamentals with emphasis on economic reasoning, supply and demand analysis, market structure, globalization and trade, government intervention in markets, economics and government policy and income distribution. (F, Sp)

EC 253 Macroeconomics 3 credits

An introduction to basic macroeconomic fundamentals with emphasis on growth, business cycles, unemployment and inflation, Gross Domestic Product, macroeconomic models, monetary and fiscal policy and international effects of domestic policy. (F, Sp)

EDUCATION

***NOTE**: Child Psychology and Adolescent Psychology are listed under Psychology (PY).*

ED 200 Foundations of Education 3 credits

This course is designed to examine the historical, philosophical, sociological, political, economic and legal foundations of American public education systems. Students will explore the nature of school environments, design and organization of school curricula and characteristics of effective schools and instruction in grades P-12. Educational structures, practices and projections for the future will be studied. Prerequisite: EN 101 & GPA 2.0. AAT core course. (F, Sp, Su)

ED 201 Teaching Profession with Field Experience 3 credits

This course provides students an opportunity to observe teaching and learning for thirty (30) hours or more in P-12 classrooms. Students are introduced to the requirements for teach preparation and certification. Students will examine characteristics of effective teaching. The course is designed to assist students in determining if a career in teaching is an appropriate goal. Prerequisite: EN 101 & GPA 2.0. AAT core course. (F, Sp)

ED 260 The Living Textbook: Newspapers in Education 1 credit

A hands-on course designed to teach those in the education profession, or those going into the education profession, how to obtain and use newspapers as curriculum resources in the classroom.

ED 265 Multicultural Education 3 credits

Historical and contemporary analysis of educational policies that incorporate ethnic, religious, and linguistic minorities through selected presentations, text readings, and field experiences. Students will gain awareness of diversity and develop a theoretical understanding of diversity through investigations of diversity within the local community and the creation of an action plan to address diversity issues within his/her classroom. (F, Sp, Su)

ED 270 Educational Psychology 3 credits

This course is designed to help students relate the application of psychological principles to teaching, learning and assessment and the educational practice in P-12 classrooms. It will focus on the learner and the learning process, teacher characteristics and classroom processes that increase student motivation. Student diversity and appropriate instructional strategies for students with special needs will also be introduced. Prerequisite: EN 101 & PY 121; GPA 2.0. AAT core course. (F, Sp)

ED 275 Technology for Teachers 3 credits

In this course students will learn how to integrate instructional technology into the P-12 classrooms. Students will study a variety of software programs, presentation technology and telecommunication tools. The focus will also be on social, ethical, legal and human issues surrounding the use of technology. Prerequisite: EN 101; GPA 2.0. AAT core course. (F, Sp)

ED 276 Introduction to Special Education 3 credits

An introductory course in special education, identifying roles, placement alternatives, legal implications and the status and trends in special education. An analysis of the categories of exceptionality will be a main focus. Prerequisite: EN 101. (DD)

ED 278 Principles of Early Childhood 3 credits

The education and guidance of children from two to six years of age in the home, preschool and kindergarten. Readings, discussions, and observations at the preschool and kindergarten level are required. Prerequisite: EN 101. (DD)

ED 280 Special Topics in Education 1-3 credits

A course offered in response to a specific situation; a variable topic-oriented course that has its content described in a subtitle. Credit and Prerequisites as announced. (DD)

ED 283 Health & PE Methods for Elementary Teachers 3 credits

This course is designed to provide the elementary education teacher candidate with knowledge and practical experiences with content and methods for teaching health and physical education at the elementary school level. (F)

ED 285 Education of Exceptional Learners 3 credits

This survey course is an introduction to exceptional learners and their education in grades P-12. Students will attain knowledge, skills and dispositions that will enable them to work effectively with exceptional learners in general education or special education. Prerequisite: EN 101 & PY 121. (F, Sp, Su)

ED 290 Paraprofessional & Substitute Teaching Internship 3 credits

The student will actively participate, under supervision, in a paraprofessional or substitute teaching setting, for a total of 60 hours. The student will ultimately be responsible for implementation of duties assigned by the internship supervisor. The class will meet with the instructor prior to the internship and at the end of the semester. Prerequisites: ED 200 & ED 201

ED 295 Capstone: Teacher Work Sample Artifacts 1 credit

This course introduces students to the preparation of the teaching portfolio. Students will prepare and submit a portfolio of teaching artifacts by discussing, analyzing and reflecting on the 11 MoSTEP standards for teacher preparation. Pre or co-requisites: ED200, ED201, ED270, ED275. (F, Sp)

EMERGENCY MEDICAL TECHNOLOGY

EM 100 First Responder 2 credits

Provides training in emergency medical care for the first persons responding to an accident. (DD)

EM 200 Basic Emergency Medical Technology 7 credits

Encompasses the Department of Transportation requirements for licensure as an ambulance attendant, covering basic emergency medical care procedures, patient assessment and treatment, and emergency medical equipment. 96 hours lecture, minimum 24 hours clinical. (Lab fee) Credit hours subject to change per Missouri EMS requirements. (DD)

EM 211 Emergency Medical Refresher 2.5 credits

Updates the skills and knowledge of licensed emergency medical technicians for re-licensure purposes as required by statute. 30 hours lecture, 10 hours lab. (DD)

ENGLISH

***NOTE**: College preparatory courses in English can be found in the Developmental Studies section.*

EN 101 English I 3 credits

An introduction to expository and argumentative writing, emphasizing reading, critical thinking and analytical writing skills. Several short papers are assigned, with emphasis on the writing process. General education credit. Prerequisite: Appropriate score on ACT, ASSET, Compass, SAT, or successful completion of DS 025 is required for initial placement. (F, Sp, Su)

EN 102 English II 3 credits

A continuation of EN 101, emphasizing longer and more impersonal and critical writing forms. Organizational skills are developed through the outline and summary units; analytical reading and critical thinking are stressed. A thorough use of library and on-line resources is required for the bibliography unit and the final research paper. General education credit. Prerequisite: EN 101. (F, Sp, Su)

EN 110 Creative Writing I 3 credits

A beginning course including theory and practical experience in writing short fiction, nonfiction, poetry and the one-act play. Students are required to concentrate on one of the four genres. A major emphasis is on process. Students must submit a number of pieces and revise a portion of their work for possible publication. English elective credit. (DD)

EN 196 Literature for Children 3 credits

This course is an introduction to the selection and presentation of literature for preschool and elementary level children. Students will be exposed to children's books in various genre. The course emphasizes the importance of cultural literacy and early and continuous exposure to literature. Does not meet humanities requirement. (F, Sp, Su)

EN 210 Creative Writing II 3 credits

As in Creative Writing I, students must concentrate on one of the four genres. As more advanced creative writers, students taking this course will be expected to demonstrate a greater understanding of the writing process and a better grasp of the basic principles of creative writing. English elective credit. Prerequisite: EN 110 or consent of instructor. (DD)

EN 211 Studies in Literature 1-3 credits

A special topics course in communication, which may include Women Writers, Popular Literature, or the Broadway Show. The subtitle on schedule of courses for a particular semester indicates specific content. Credit varies from one to three hours. This course may be repeated if the content changes. Humanities credit. (DD)

EN 230 English Literature I 3 credits

A survey of some significant works of English literature from Beowulf to Pope. Selected authors within this time frame will vary to offer as wide an overview of genres and perspectives as possible during the semester. Humanities credit. Prerequisite: EN 101 or current enrollment in EN 101. DD)

EN 240 English Literature II 3 credits

A survey of some significant works of English literature from the Romantics to the 20th century. Selected authors within this time frame will vary to offer as wide an overview of formal developments and changes in class, race and gender perspectives as possible during the semester. Humanities credit. Prerequisite: EN 101 or current enrollment in EN 101. EN 230 is not a prerequisite for EN 240. (DD)

EN 251 World Literature: Beginning to the Renaissance 3 credits

A survey of world literature from the beginnings through the Renaissance in Europe. Selections from various cultures are examined for the intellectual trends of the period, for literary and cross-cultural elements, and for artistic design. Humanities credit. Prerequisite: EN 101 or current enrollment in EN 101. (DD)

EN 252 World Literature: Enlightenment to the Present 3 credits

A survey of world literature from the European Enlightenment through the twentieth century. Selections from various cultures are examined for the intellectual trends of the period, for literary and cross-cultural elements, and for artistic design. Humanities credit. Prerequisite: EN 101 or current enrollment in EN 101. EN 251 is not a prerequisite for EN 252. (F, Sp, Su)

EN 261 American Literature Before 1865 3 credits

A survey of precolonial, eighteenth century and early nineteenth century literature with emphasis on the varied responses to the contexts of American experience, including voices of the dominant as well as minority cultures. Prerequisites: EN 101 or current enrollment in EN 101. Humanities credit. (DD)

EN 262 American Literature After 1865 3 credits

A survey of late nineteenth century, modern and contemporary literature with emphasis on the varied responses to the contexts of American experience, including voices of the dominant as well as minority cultures. Humanities credit. Prerequisite: EN 101 or current enrollment in EN 101. EN 261 is not a prerequisite for EN 262. (F, Sp)

EN 280 Introduction to Literature 3 credits

This course introduces students to the college-level study of literature by focusing on a thematically arranged selection of leterary texts. Students will read poetry, plays, short fiction, and a novel, will respond to the literature analytically and responsively, and will learn to value their own as well as others' interpretations. (F, Sp)

EN 296 Young Adult Literature 3 credits

Trends, censorship and the history of young adult literature will be considered as students read and evaluate classic and contemporary literature suitable for middle and senior high school students. Prerequisite: EN 101. (DD)

FOREIGN LANGUAGE

FL 100 Elementary Spanish I 3 credits

An introductory course in Spanish stressing conversation, basic structural patterns of the language and comprehension of grammatical concepts. Initiates awareness of Hispanic cultures along with the ability to understand simple conversation in Spanish and to communicate basic needs and activities. Intended for students with no previous study of Spanish. Humanities credit. (F, Sp)

FL 101 Elementary Spanish II 3 credits

Conversation, grammar and reading are stressed. Oral practice and repetition are used as an aid to pronunciation. Humanities credit. Prerequisite: FL 100. (DD)

FL 110 Elementary German 4 credits

This is an introductory course in German with an emphasis on speaking the language. Pronunciation, simple grammatical usage, syntax, vocabulary and idioms in carefully graded reading material. This is a first course in basic German language. Humanities credit. (DD)

FL 111 Elementary German II 3 credits

This course is a continuation of FL 110 Elementary German I, using the same text and classroom materials. Conversation, grammar and reading are stressed. Oral practice and repetition are used as an aid to pronunciation. Humanities credit. Prerequisite: FL 110. (DD)

FL 120 Elementary French I 3 credits

An introductory course in French emphasizing conversational speaking and comprehension, pronunciation, and the accumulation of basic vocabulary. Simple grammatical concepts are also introduced. Humanities credit (DD)

FL 122 Elementary French II 3 credits

This course is a continuation of FL 120, Elementary French I, using the same text and classroom materials. Humanities credit. Prerequisite: FL 120. (DD)

FL 155 American Sign Language I (ASL I) 3 credits

This course is an introduction to the receptive and expressive usage of American Sign Language (vocabulary, finger spelling and numbers). The purpose of this course is to enable the student to communicate with the deaf and hard of hearing people who use signs. This course will help prepare persons interested in preparing for beginning entry into interpreter programs. The history of American Sign Language will also be explored. (DD) Humanities credit.

FL 255 American Sign Language II (ASL II) 3 credits

This course is a continuation of American Sign Language emphasizing on expanding the receptive and expressive sign vocabulary and usage of conversation. The purpose of this course is to give a stronger foundation to the student to communicate with the deaf and hard of hearing community. This course will help persons prepare for entry into interpreter programs. Humanities credit. Prerequisite: FL 155.

GEOGRAPHY

GE 106 Introduction to World Geography 3 credits

This course surveys the world's major developed regions and their physical and human characteristics from a geographic perspective. The physical environment includes landforms and climate while the human landscape is characterized by language, religion, population characteristics and economic development. (Sp)

HEALTH CARE MANAGEMENT

HC 201 Health Care Management 3 credits

This course is designed to teach specialized, practical skills and techniques used in a variety of health care settings. Health care management encompasses a wide range of administrative responsibilities, such as cost containment, efficiency, decision making, information systems, human relationships and leadership. Prerequisites: BA 161 & BA 150 (Sp, even years)

HEALTH INFORMATION TECHNOLOGY

HT 215 Health Information & Records Management 3 credits

A course designed to provide the student with the knowledge for accurately managing health information in an ever changing, fast-paced, and multi-regulated industry. Students will compare and contrast information management in various health care settings, while differentiating types of health records and systems used for processing, storing, and circulating health information data. (F odd years)

HT 245 Health Care Delivery Systems 3 credits

A course designed to provide the student with knowledge of the infrastructure for health care delivery. Students will examine health care policy, regulation , and financing in relation to professional practice. Students will also explore the relationship of population, illness and disease patterns, technology, and ancillary resources to the health care delivery system. Students will evaluate the impact that the United States health care delivery system has on the health of the world's population. Forecasts for the future of the health care delivery system will be evaluated. (Sp even years)

HISTORY

HI 101 Western Civilization to 1700 3 credits

This course is a survey of the social, intellectual, religious, political and economic institutions and traditions developed by groups of people who first lived around the Mediterranean Sea and branched out into Europe and the Western Hemisphere. The time span of the course is from prehistory to approximately 1715. Humanities/Social Science credit. (F, Sp, Su)

HI 102 Western Civilization Since 1700 3 credits

A continuation of the survey of institutions, traditions and history of Western Civilization with emphasis on European developments and their interaction with non-western cultures and traditions. The time span for this course is from approximately 1715 to the present. Humanities/Social Science credit. (F, Sp, Su)

HI 103 American History to 1877 3 credits

A survey course of the history of the United States covering European backgrounds, the colonial and Constitution periods, national expansion and development through Reconstruction. (Meets the Constitutional Requirement). Prerequisite: Appropriate score on ACT, ASSET or SAT, or successful completion of DS 015 (F, Sp, Su)

HI 104 American History Since 1877 3 credits

A continuation of HI 103. A survey course considering national growth and development, and the constantly broadening sphere of American participation in world affairs from Reconstruction to the present time. (F, Sp, Su)

HUMANITIES

HU 110 Humanities: Pre-Renaissance 3 credits

An integrated course in western culture encompassing an introduction to literature, painting, music, sculpture and architecture, as well as the discipline of philosophy presented as interrelated and integrated manifestations of human creativity. Employing methodologies associated with the study of cultural and intellectual history, the course seeks to create an understanding of why we are the way we are. Humanities credit. (F)

HU 111 Humanities: Renaissance to Present 3 credits

A continuation of HU 110, with special attention to western cultural heritage from the renaissance period to the present. Humanities credit. (F, Sp)

INFORMATION TECHNOLOGY

IT 110 Introduction to Computers 3 credits

An introduction to the basic concepts of information processing and the hardware and software used. The course is designed to familiarize the student with the computer through hands-on experience and classroom lecture. (Lab fee) (DD)

IT 113 Windows Concepts 3 credits

Provides an in-depth study on the microcomputer environment with an emphasis placed on MS Windows. Basic keyboarding skills required. (Lab fee) (F)

IT 182 Programming in Visual BASIC I 3 credits

A beginning course in the Windows environment using the Visual BASIC language. It is intended to develop the student's ability to design programs and windows objects using algorithms and coding in structured programs as well as an understanding of Windows properties. Prerequisite: Basic keyboarding skills. IT 113 or demonstrated familiarity with the Windows environment. Intermediate or College Algebra recommended. (Lab fee) (F)

IT 243 Programming I 3 credits

A hands-on introduction to structured, object-oriented programming in the C++ environment. Includes a study of data types, functions classes, selection and looping. Prerequisites: Basis keyboarding skill. Intermediate or College Algebra recommended. (Lab fee) (Sp)

IT 252 Business Systems and Design 3 credits

A study of the duties of the systems analyst covering methods and techniques for conducting a systems project—from the preliminary investigation through the systems implementation and evaluation. (Lab fee) (Sp)

IT 266 Computer Operating Systems 3 credits

Develops the student's ability to identify, explain and run various computer operating systems. Provides the student with a basic understanding of what an operating system is, program management, input/output control, and the structure of program and data libraries. (Lab fee) (F, Sp)

IT 268 UNIX/Linux 3 credits

This course introduces the fundamentals of the UNIX operating system. The course guides students through the basics of UNIX system concepts, architecture and administration. The course also includes networking essentials commonly used in the UNIX environment. Standard UNIX networking tools will be covered, as well as the different "flavors" of UNIX, including Linux. (Lab fee) (DD)

IT 290 Java Programming 3 credits

This course will introduce students to modern object-oriented techniques. Java will be used for this course, and although primarily known as a tool to develop applets for Web pages, it can be used as a general-purpose programming language. Java is object-oriented and has been designed for maximum portability while incorporating automatic storage management, exception handling and integrated support for multi-threading. Prerequisite: IT 182 or IT 243 or instructor permission. (Lab fee) (Sp)

MANUFACTURING TECHNOLOGY

MF 104 Applied Technical Math 3 credits

The purpose of this course is to develop skills in basic math areas, such as measurement in standard and metric units, conversions, scientific and engineering notation, ratio and proportion, decimals, fractions, percents, formulas, equations, basic geometry, Pythagorean Theory, right triangle trigonometry and introductory statistical process control. Placement testing, ACT, SAT, Compass or successful completion of DS 048. (F)

MF 120 Introduction to Electricity & Electronics 3 credits

This course is designed to provide a solid foundation for the study of electricity/electronics by introducing the fundamental laws of scientific atomic structure, electricity and electrical safety. It builds upon those fundamentals by the study of Ohm's Law, current, voltage, resistance, power sources, and DC measuring instruments. An introduction to complete series, parallel and series-parallel circuits, the laws, mathematical formulas, and methods used to analyze these circuits are introduced in this class. A study of ho AC voltages and currents are generated, introducing the science of magnetism, and the effect of AC on electronic components such as inductors and capacitors, AC testing procedures will be emphasized. (Lab Fee) (F)

MF 121 Industrial Electricity (DC) 3 credits

This course is an extensive hands-on study of industrial electricity. Students will study electricity and its sources, resistors (as simulated circuit loads), Ohm's Law, series circuits, parallel circuits, combination circuits, meters, conductors, insulators and batteries. (Lab fee)

MF 122 Basic Electricity I 3 credits

This course is a hands-on study of fundamental electricity principles and applications. Student will study electricity and its applications using resistors (as simulated circuit loads), Ohm's Law, series circuits, parallel circuits, and combination circuits. The course will also include electrical wiring techniques, system installation, an introduction into raceways, conduit bending, conductors, disconnects, and over-current protection. (Lab fee) (F)

MF 126 Basic Electricity II 3 credits

This course is a level two, hands-on study of electricity principles and applications. Students will study grounding and bonding of electrical systems, motor theory, application, and motor controls. (Lab fee) (Sp)

MF 125 Industrial Electricity (AC) 3 credits

This course is an extensive hands-on study of Industrial Electricity. Students will study magnetism, induction, AC voltage and current, inductors and capacitors. (Lab fee)

MF 128 Motor Controls 3 credits

This course is an extensive hands-on study of basic motor control circuits; including electrical symbols, line diagrams, manual motor starters, magnetic motor starters, time delay circuits, motor reversing circuits, electro-mechanical and solid-state rays, photoelectric and proximity controls, preventive maintenance and trouble shooting. (Sp)

MF 141 Programmable Logic Controllers 3 credits

This course is an extensive hands-on study of intermediate pneumatic and hydraulic power control systems using Programmable Logic Controllers (PLCs). Programming applications such as sequencing, timers, counters, I/O and motor control will be covered in this course. At the completion of this course students will be able to program a PLC for motor control, I/O applications, sequencing applications, timer operations, counter functions and troubleshoot the PLC system. (F)

MF 150 Principles of Safety 3 credits

This course prepares students for the safety assessment leading to Manufacturing Skill Standards council Production Technician Certification (MSSC-PTC) and for ensuring the production and manufacturing system meets health, safety and environmental requirements. This course is part of a a nationwide, industry-led system that certifies the foundational skills and knowledge required of production workers from entry-level to first line supervision in all manufacturing sectors. The system provides national, portable certification of workers against industry-recognized, federally-endorsed standards.

MF 155 Principles of Maintenance 3 credits

This course prepares students for the maintenance assessment leading to Manufacturing Skill Standards Council Production Technician Certification (MSSC-PTC). This course prepares students for ensuring that the maintenance of the manufacturing system fulfills customer and business requirements, to include installing and repairing equipment on the manufacturing floor. This course is part of a nationwide, industry-led system that certifies the foundational skill and knowledge required of production workers from entry-level to first line supervision in all manufacturing sectors. The system provides national, portable certification of workers against industry-recognized, federally-endorsed standards.

MF 160 Principles of Quality and Continuous Improvement 3 credits

This course prepares students for the quality and continuous improvement assessment leading to Manufacturing Skill Standards Council Production Technician Certification (MSSC-PTC) and for ensuring the production and manufacturing system meets quality system requirements as defined by business and its customers. This course is part of a nationwide, industry-led system that certifies the foundational skills and knowledge required of production workers from entry-level to first line supervision in all manufacturing sectors. The system provides national, portable certification of workers against industry-recognized, federally-endorsed standards.

MF 165 Principles of Manufacturing Processes and Production 3 credits

This course prepares students for the manufacturing processes and production assessment leading to Manufacturing Skill Standards Council Production Technician Certification (MSSC-PTC). This course helps students set up, operate, monitor, control and improve manufacturing processes and schedules to meet customer and business requirements; develop, implement and improve the manufacturing process through early production and process changes; and assess product and process design for

manufacturability. This course is part of a nationwide, industry-led system that certifies the foundational skills and knowledge required of production workers from entry-level to first line supervision in all manufacturing sectors. The system provides national, portable certification of workers against industry-recognized, federally-endorsed standards.

MF 201 Industrial Electronics 3 credits

This course provides an understanding of diodes, transistors, thyristors, operational amplifiers, and how they work and are used in the industrial setting. Test equipment will be used for verification of operation. Prerequisite: Requires completion of vo-tech industrial maintenance program, appropriate prior experience, or instructor permission. (Lab fee) (F)

MF 205 Digital Electronics 3 credits

This course provides students with advanced electronic skills used in maintaining, installation and development of the complex equipment used in the modern manufacturing environment. Topics covered include number systems, logic gates, flip-flops, registers and counters, analog-to-digital, and digital-to-analog data conversions. Prerequisite: Requires completion of vo-tech industrial maintenance program, appropriate prior experience, or instructor permission. (Lab fee) (F)

MF 220 AutoCAD I 3 credits

This is the first course in the use of the Computer Aided Drafting software AutoCAD. It includes development in the skills of File, Draw, Text and Editing commands while working in the Cartesian workspace. File handling and plotting are stressed. (Lab fee) (F, Sp)

MF 221 AutoCAD II 3 credits

A continuation of AutoCAD I (MF 220) in the study of application of AutoCAD in the industrial world. To include the topics of three-dimensional modeling, Scaling, Paper Space, Geometric Calculator and Customization of AutoCAD. Perquisites are MF 220 or permission of the instructor. (Lab fee) (F, Sp)

MF 225 Advanced Programmable Logic Controllers 3 credits

This course provides students with the advanced skills and applications of Programmable Logic Controllers used in increasing quantities in the industrial process today. Training in timers, counters, and data manipulation will be covered. Prerequisite: Requires completion of vo-tech industrial maintenance program, appropriate prior experience, or instructor permission. (Lab fee) (Sp)

MF 235 Industrial Robotics 3 credits

This class provides students with the skills and applications of Industrial Robots used in increasing quantities in the manufacturing process today. Programming, integration into current systems, flexible manufacturing and production topics, as applied to robots, will be covered in this course. MF 220 and MF 221 may be substituted with advisor approval. Prerequisite: Requires completion of vo-tech program or appropriate experience and instructor permission. (Lab fee) (Sp)

MF 240 Advanced Motor Controls 3 credits

This class provides students with advanced motor control skills, control panel wiring, frequency drives, timers and counters will be studied. Prerequisite: Completion of AVTS program or instructor permission. (F)

MF 251 Statistical Process Control 3 credits

A study of Statistical Process Control to improve the quality of products in industry. Course discusses the need for S.P.C. instruction in the use of X and R charts, attribute charts and methods of chart analysis. (DD)

MF 271 Manufacturing Technology Internship 3 credits

The internship is designed to give the Manufacturing and Applied Technology student practical working experience following a pre-approved training plan arrived at cooperatively by the employer, student and instructor.

MF 299 Special Topics in Manufacturing Technology 1-5 credits

This course is offered on various special topics, with specific content indicated by course subtitle. Credit hours are determined by contact hours, activities and assignments as appropriate to content. The course may be repeated if the content varies. Prerequisite: Consent of instructor. (DD)

MATHEMATICS

***NOTES**: College preparatory courses in mathematics can be found in the Developmental Studies section.*

Placement scores must be less than two years old for placement in math and physical science courses.

MT 110 Intermediate Algebra 3 credits

Student learning outcomes include: basic algebra fundamentals, linear equations, linear inequalities, linear functions and their graphs, systems of equations and inequalities, operations with polynomial functions and factoring, quadratic equations and functions and their graphs, operations with rational expressions, and radical equations. This course will use algebra to model and solve real-world problems. Prerequisite: DS 049 or appropriate. ACT or placement scores must be less than two years old. (F, Sp, Su)

MT 121 Math Concepts 3 credits

Student learning outcomes include: basic concepts of set theory, numeration and mathematical systems, number theory, real number operations, applications of fractions, decimals, and percents, basic concepts of algebra, graphs, functions, systems of equations and inequalities, and geometry. Recommended for Elementary Education majors. Prerequisite: MT 110 or appropriate. ACT or placement scores must be less than two years old. (F, Sp, Su, DD)

MT 122 College Algebra 3 credits

Student learning outcomes include: graphing, analyzing, and solving linear, quadratic, polynomial, rational, logarithmic and exponential functions and equations, solving systems of equations and inequalities, matrices, and other topics as time permits. Satisfies general education mathematics requirement; consult transfer catalog for specific program math requirements. Prerequisite: MT 110 or appropriate. ACT or placement scores must be less than two years old. (F, Sp, Su)

MT 123 Finite Mathematics 3 credits

This course utilizes a practical application approach to the following: linear and quadratic equations, graphs and functions including exponential and logarithmic functions, mathematics of finance, annuities, sinking funds and mortgages, linear programming, counting methods and probability, basic statistics, and other topics as time permits. Prerequisite: MT 122 or appropriate. ACT or placement scores must be less than two years old. (DD)

MT 125 Elementary Statistics 3 credits

This course provides students with a valuable framework in which to learn and apply statistical concepts. Student learning outcomes include but are not limited to: the nature of probability and statistics, frequency distributions and graphs, data description, confidence intervals, hypothesis testing, correlation and regression. Satisfies general education mathematics requirement; consult transfer catalog for specific program math requirements. Prerequisite: MT 110 Intermediate Algebra or appropriate. ACT or placement scores must be less than two years old. (F, Sp, Su, DD)

MT 132 Trigonometry 3 credits

Student learning outcomes include: geometric foundations of trigonometry, unit circle, graphs of trigonometric functions, identities, equations and inequalities, inverse functions, law of sines and cosines, vectors, complex numbers and DeMoivre's theorem. Prerequisite: MT 110 Intermediate Algebra or appropriate. ACT or placement scores must be less than two years old. (DD)

MT 148 Pre-Calculus 5 credits

This is a preparatory course for the Calculus sequence. Student learning outcomes include: algebraic, trigonometric, exponential and logarithmic equations and inequalities; systems of equations and inequalities; matrices; solutions of triangles; inverses of algebraic and trigonometric functions, trigonometric identities; and an introduction to analytic geometry. MT 122 is recommended. This course is offered in the fall as a prep course for Geometry and Calculus I. Prerequisite: MT 110 with an A or B, or ACT or ASSET or placement scores must be less than two years old as required for College Algebra/Trigonometry. (F)

MT 150 Geometry & Calculus I 5 credits

This course is designed for students in engineering, economics, life and physical sciences, and mathematics, focusing on functions, limits and their properties, differentiation and integration, including logarithmic and exponential functions. Prerequisites: MT 122 and MT 132 or MT 148 or instructor permission. (Sp, DD)

MT 222 Discrete Mathematics 4 credits

This course is an introduction to discrete models. Topics include: sets, symbolic logic, relations, combinatorics, mathematical induction, probability, matrices, graph theory and Boolean algebra. Prerequisites: MT 122 or MT 148. (DD)

MT 250 Geometry & Calculus II 5 credits

This course is a continuation of Geometry & Calculus I. It includes techniques and applications of the integral, sequences, series, polar functions, conic sections and additional topics as time permits. Prerequisite: MT 150. (F, DD)

MT 260 Geometry and Calculus III 5 credits

This course is a continuation of Geometry and Calculus II. It includes the study of solid analytic geometry, vectors and vector calculus, partial differentiation, and multiple integrals. Prerequisites: MT 250. (Sp, DD)

MT 270 Special Topics in Mathematics 1-3 credits

This course is offered on various special topics, with specific content indicated by course subtitle. Credit hours are determined by contact hours, activities and assignments as appropriate to content. The course may be repeated if the content varies. Prerequisite: Instructor permission. (DD)

MUSIC

MU 101 Applied Voice 1 credit

This course is for students who have little or no training in voice. The class will help students develop and understand vocal technique and basic musicianship.

MU 103 Chorus I 1 credit

A vocal ensemble for all interested in choral singing. Music representative of all periods, and both secular and sacred is used at the director's discretion. This class is called upon to perform on various occasions. (DD)

MU 109 Music Appreciation 3 credits

An introductory course concerned with the elements of music, the important musical masterpieces and the significant composers up to the present age. A portion of the class time is devoted to listening to recordings. Humanities credit. (F, Sp, Su)

MU 110 Applied Music 1 credit

Private instruction for credit. Students are expected to pay a variable fee to the private instructor over and above the cost of course credit. Students must complete 30 hours of instruction to earn one credit hour. Maximum 4 credits, 1 credit per semester. Prerequisite: Written permission of Associate Dean of Arts and Science. This does not meet any general education requirements. (DD)

NURSING

Nursing courses are restricted to students accepted to the NCMC Nursing Program.

NR 104 Basic Nutrition (Level I) 3 credits

This course will cover both normal and therapeutic nutrition. It will particularly focus on what knowledge the Nursing Professional will need to participate in the Nutritional Care Plans, and nutritional outcomes of patients and/or clients in various health care settings. (Sp)

NR 105 Introduction to Mental Health Nursing 1 credit

A course designed to introduce the student to the knowledge, skills, and attitudes essential to mental health nursing. Utilization of critical thinking and therapeutic communication skills are emphasized as chief components in delivery of safe nursing care in a dynamic, culturally diverse, multidisciplinary, health care environment. The nursing process is utilized as the framework from which to construct the foundation for planning and implementing nursing care to a mentally ill client and his/her family. (F)

NR 108 Foundations of Nursing I (Level I) 2 credits

A course teaching basic principles and procedures for patient care and their association with common illnesses, rehabilitation processes and the principles of long-term care. Current certification as Certified Nurse Assistant in the state of Missouri meets requirements of this course. Successful completion of Foundations II is required before advanced credit is awarded for Foundations I. Taught concurrently with NR 109. (F)

NR 109 Foundations of Nursing II (Level I) 7 credits

A course designed to introduce the student to the knowledge, skill and attitudes essential to provide safe and appropriate nursing care to a multicultural population. Clinical experience will focus on providing safe and appropriate patient care, communication, patient teaching, documentation and a lifelong commitment to learning through multidisciplinary hospital and community based experiences. Successful completion of Foundations I and II is required for the Level I program. Taught concurrently with NR 108. (F)

NR 113 Personal & Vocational Concepts (Level I) 1 credit

This is a non-clinical course designed to assist the student in making an adjustment to the role of becoming a member of the health care team in a community based system. Focus is placed on developing an understanding of the role and responsibility of a Licensed Practical Nurse capable of using

critical thinking skills, the Nursing Process and therapeutic communication skills. Emphasis is placed on personal and professional growth and the commitment to education is a lifelong learning experience. Discussion of the impact of cultural and spiritual differences in a multidisciplinary setting is included. (F)

NR 116 Family & Community Living (Level I) 1 credit

A non-clinical course designed to introduce the student to the knowledge, skills and attitudes essential to provide safe and appropriate nursing care to a multicultural population in a home or community based setting. The Nursing Process and Maslow's Hierarchy of Needs are the primary conceptual framework utilized and reinforced through critical thinking activities, while emphasizing adaptations made for the influence of nontraditional health practices and settings. Communication is stressed as the key to a multidisciplinary approach to health care. Emphasis is placed on lifelong learning. (F)

NR 117 Pharmacology 4 credits

A course designed to provide the student with the knowledge of pharmacology and its application in nursing. Study focus is on the major categories of pharmacological agents, their actions, side effects, uses, and nursing responsibilities. Mathematics skills are employed for the purpose of safe medication administration. Nursing process, critical thinking, and therapeutic communication in a community-based health care system are included. Cultural and ethnic variations in relation to medication administration in a multidisciplinary health care system are addressed. Emphasis is placed on committing to lifelong learning in a continually changing health care environment. (F)

NR 120 Geriatrics 2 credits

This course is designed to introduce the student to the physiologic, psychologic and sociologic aspects of the normal aging process. Emphasis is placed primarily on the biological aspects of aging. However, interpersonal relations, retirement and socioeconomic factors impacting and impacted by the aging population are explored. Clinical experience in geriatrics is included in the medical-surgical clinical rotations. (F)

NR 121 Nursing of Adults I (Level I) 11 credits

A course designed to provide the student with the knowledge of diagnosis, treatment and rehabilitation of medical-surgical conditions and diseases of body system of the adult. Using a multicultural approach, the Nursing Process and Maslow's Hierarchy of Needs are the primary conceptual frameworks utilized and reinforced through critical thinking activities. Clinical experience will focus on providing safe and appropriate patient care, communication, patient teaching, documentation and a lifelong

commitment to learning through multidisciplinary hospital and community based experience. Emphasis is placed on health maintenance and illness prevention. (Lab fee, Clinical fee) (Sp)

NR 129 Maternal Child Nursing I (Level I) 6 credits

An introduction to family centered health care for the antepartum, intrapartum and postpartum period utilizing the Nursing Process as the conceptual framework. The impact that culture has on the pregnant woman and her family along with normal and abnormal cases are discussed. Appropriate nursing care is identified by using previously acquired knowledge and application of critical thinking skills. Clinical experience is focused on providing appropriate patient care, communication, patient teaching, documentation and a lifelong commitment to learning through multidisciplinary hospital and community based experiences. (Lab fee, clinical fee) (Sp)

NR 162 Nursing of Adults II (Level I) 6 credits

This course is a continuation of Nursing of Adults I and is a course designed to provide the student with the knowledge of diagnosis, treatment and rehabilitation of medical-surgical conditions and diseases of body system of the adult. Using a multicultural approach, the Nursing Process and Maslow's Hierarchy of Needs are the primary conceptual frameworks utilized and reinforced through critical thinking activities. Clinical experience focuses on providing safe and appropriate patient care, communication, patient teaching, documentation and a lifelong commitment to learning through multidisciplinary hospital and community based experiences. Emphasis is placed on health maintenance and illness prevention. (Clinical fee) (Su)

NR 183 Maternal Child Nursing II (Level I) 5 credits

This course is designed to study the growth and development of a child from birth through adolescence. Normal and abnormal cases in multidisciplinary and community based settings are discussed. The impact that culture has on the lives of children and their families is included. Appropriate nursing care is identified by utilization of the Nursing Process and critical thinking skills. Emphasis is placed on patient and family teaching using effective communication skills. Pediatrics is a dynamic area, therefore, it is essential for the nurse to make a commitment to lifelong learning. Clinical experience will focus on providing safe and appropriate nursing care. (Clinical fee) (Su)

NR 226 Special Topics in Nursing 1-5 credits

Offered occasionally on various special topics, with specific content indicated by course subtitle. Credit hours determined by contact hours, activities and assignments as appropriate to content. (DD)

NR 230 Trends & Issues in Nursing (Level II) 1 credit

A course directed at professional, legal and ethical influences relative to the nursing role. Content includes identification and discussion of current practices and emerging trends which affect the role of nursing in the health care delivery system. (F)

NR 242 Mental Health Nursing (Level II) 3 credits

A basic course in the fundamental concepts of human behavior as related to mental illness, and the specific body of knowledge pertinent to the nursing role in the treatment of the psychologically ill individuals in a multicultural population. Clinical experience is obtained through multidisciplinary hospital and community based experiences which provide life long learning experiences for the mental health care needs of individuals. The focus of the clinical is upon the development of therapeutic communication skills, recognition of DSM mental disorders, proper psycho pharmacological and therapy interventions, utilization of the nursing process, and personal and professional development. (Clinical fee) (Sp)

NR 250 Maternal Child Nursing III (Level II) 4 credits

This course focuses on the normal and abnormal physiology, psychology, and psychosocial processes pertaining to reproduction. The nursing process is employed as the framework from which to plan and implement care during the antepartum, intrapartum and postpartum phases of childbirth. Utilization of critical thinking and effective communication skills is stressed as chief components in the delivery of safe nursing care in a dynamic, culturally diverse, and multidisciplinary, health care environment. Pharmacology, diet therapy, discharge planning, and psychosocial variables of nursing care are integrated throughout the course. Clinical experience is obtained in hospitals and community based health care settings. Value is placed on a commitment to lifelong learning. (Clinical fee) (F)

NR 251 Maternal Child Nursing IV (Level II) 4 credits

This course focuses on the normal and abnormal physiology, psychology, and psychosocial processes pertaining to growth and development from infancy through adolescence. The nursing process provides the foundation from which to plan and implement safe nursing care which supports the family unit. Physiological and behavioral changes that relate to child rearing are examined with emphasis on health and its promotion. Nursing management of the family and utilization of critical thinking, making sound nursing judgments is integrated throughout the course. Patient teaching, discharge planning, and follow up care of the family within a multicultural community is addressed. Time is spent in review, practice, and validation of skill competency in the skill laboratory. The clinical setting emphasizes health maintenance and promotion for the family. Clinical experiences are

in acute, outpatient, and community based settings. A lifelong commitment to learning is stressed. (Sp)

NR 253 Nursing of Adults III (Level II) 7 credits

A continuation in the study of disease processes with an emphasis on health and its promotion. Nursing management of the adult, utilizing critical thinking and the Nursing Process is found throughout the course. Dietary and pharmacologic management are integrated throughout the course. Patient teaching, discharge planning and follow-up care of the adult and aging population within a multicultural community are addressed. Time is spent in review, practice and validation of skill competency in the skill laboratory. Clinical experiences are spent in acute, outpatient and community based settings. Learning experiences are centered on meeting the total needs of the patient and family. Emphasis on self-reliance, productivity and lifelong commitment to learning is stressed. The student may have experiences in specialty settings. (Lab fee, clinical fee) (F)

NR 258 Nursing of Adults IV (Level II) 7 credits

A continuation in the study of disease processes with emphasis on health and its promotion. Nursing management utilizing critical thinking and the Nursing Process is used throughout the course. Dietary and pharmacologic management will be integrated throughout the course. A more complete and comprehensive assessment, plan, implementation and evaluation of care are required. Emphasis on leadership skills and time management are addressed throughout the course. Clinical experiences are focused on leadership skills, critical thinking situations and emphasis on the need for self-reliance, productivity and lifelong commitment to learning. Clinical experiences are spent in acute, outpatient and community based areas. The student may be given experience in specialty areas. Patient teaching and a discharge planning assignment with follow-up care to a multicultural aging community are required. (Clinical fee) (Sp)

NR 295 Leadership in Nursing (Level II) 2 credits

Study of principles and techniques underlying nursing leadership and management. Focuses on how to work with people, as individuals or as members of groups, teams, organizations and even whole communities. The course focuses on leadership skills, critical thinking situations, priority setting, time management and communication. (F)

PHARMACY TECHNOLOGY

PM 101 Pharmacy Calculations 3 credits

Accuracy in calculation is essential to safe pharmaceutical practice. This course will help broaden a student's knowledge in pharmacy calculations thus allowing them to provide assistance to pharmacists. You will master accurate computation in dispensing, pricing, systems of measure, introduction to compounding (focuses on the art of making and preparing medication) and parenteral products as they apply in pharmacy. Study focus is on core concepts and the foundation of what every pharmacy technician needs to know to ensure safe medication administration. Mathematics skills, critical thinking, therapeutic communications in community-based health care system are included. (F-even years)

PM 105 Pharmacy Practice I 4 credits

You will be introduced to the role of pharmacy, the pharmacist and the pharmacy technician in the health care delivery system. The course incorporates the history of pharmacy practice, law & ethics, terminology, routes, dosage formulations, Anatomy & Physiology, medications and operations of community based and institutional pharmacies. Cultural and ethnic variations in relationship to medications in a multidisciplinary setting are addressed. Emphasis is placed on committing to lifelong learning in a continually changing environment. Lecture and laboratory. Prerequisite: PM 101. (Lab fee) (Sp-odd years)

PM 205 Pharmacy Practice II 4 credits

This course is a continuation of Pharmacy Practice I (PM105). It builds on prior knowledge. The course incorporates sterile product preparation, aseptic technique, required equipment, TPN, chemotherapy, quality control and assurance and compounding mixtures and dilutions. Lecture and laboratory. Prerequisite: PM 101 & PM 105. (Lab fee) (F -odd years)

PM 210 Pharmacy Technician Internship Seminar 5 credits

The student will purchase the Pharmacy Technician Training System from Pass Assured LLC. The CD utilizes multimedia such as audio, video and graphics. The CD provides realistic practice tests. The material covers all areas the pharmacy technician will need to know for passing certification exams (laws, medical review, aseptic techniques, calculations and pharmacy operations). Prerequisite: PM 101, PM 105, PM 205. (Sp-even years)

PM 220 Pharmacy Technician Internship 4 credits

This course teaches the Pharmacy Technician student the principles and importance of pharmacy technician procedures; accurate computation in dispensing, pricing, systems of measure, compounding mixtures and solutions, preparing parenteral products, aseptic techniques, law & ethics and operations of community based and institutional pharmacies.

The internship is to provide the student with real-life experiences with an opportunity to practice learned theory and clinical skills. Students will work under supervision at the internship site. The benefits to the students include the opportunity to practice learned theoretical and clinical skills, by being exposed to different situations and to have the opportunity to demonstrate (at their internship site) their abilities, which could lead to future employment.

During the 180 hours of the internship, your relationship with other professionals and consumers of services in hospitals and the community will be emphasized. Prerequisite: PM 101, PM 105, PM 205. (Sp-even years)

PHILOSOPHY

PH 101 Ethics 3 credits

This course examines the major theories of value and moral obligation, and how they illuminate such contemporary issues as abortion, euthanasia, sexual morality, discrimination, medical ethics, privacy, individual freedom, violence and war. Humanities credit. (F, Sp, Su)

PH 102 Introduction to Philosophy 3 credits

This study of philosophy will expose the student to critical thinking and help in the understanding of such fundamental questions as these: How do we know? (epistemology); What is real? (metaphysics); and What is of value? (axiology). Readings from the major philosophers are included. Humanities credit. (F, Sp, Su)

PHYSICAL EDUCATION

A maximum of two hours of physical education activities will apply toward any degree.

PE 101 Golf I 1 credit

An activity class intended to acquaint students with golf rules and protocol while developing skills in driving and putting. (Lab fee) (Su)

PE 102 Tennis I 1 credit

An activity class intended to teach tennis scoring and develop physical skills in the serve and ground strokes. (DD)

PE 104 Varsity Sports I 1 credit

A course for students participating in intercollegiate baseball, softball, men's and women's basketball and cheerleading. Prerequisite: Consent of the coach. (F, Sp)

PE 105 Health Education 2 credits

A course that addresses personal health concerns from a holistic standpoint and emphasizes strategies to adapt or change our behavior to promote health and prevent disease. (Not applicable to medical curriculum). (F, Sp, Su)

PE 106 Weight Training I 1 credit

The course is designed to teach students weight lifting techniques, different weight training systems, a variety of exercises, muscle groups and how each affects the body. Weight lifting terminology will also be introduced. (F, Sp)

PE 107 Aerobics I 1 credit

A coed fitness class designed to improve physical fitness and weight control through group aerobic exercises and dietary pattern. (DD)

PE 108 Volleyball I 1 credit

The course is designed to teach the students the game of volleyball. The students will also learn fundamentals, techniques, rules, strategy and volleyball terminology. (F, Sp)

PE 109 Softball 1 credit

An activity course teaching scoring, proper techniques and the importance of softball as a lifetime fitness sport. (Sp)

PE 110 Canoeing 1 credit

An activity course designed to teach the fundamental principles and techniques of canoeing and gain an appreciation for the activity. Experiential learning is obtained on a two-day float trip. This course is physically demanding and takes an adequate level of fitness to participate. Course may be taken up to two times for a total of two credit hours. (Lab fee) (Su)

PE 111 Bowling I 1 credit

An activity course teaching scoring, property techniques and the importance of bowling as a lifetime fitness sport. (Lab fee) (DD)

PE 112 Sports Officiating 2 credits

A course designed to qualify officials, addressing officiating ethics, sports psychology and strategies. (DD)

PE 113 Lifetime Activities 1 credit

This course is to acquaint students with a wide variety of physical fitness type activities that can be enjoyed throughout their lifetimes. Individual and group activities including: canoeing, swimming, fishing, badminton, jogging, biking, hiking, country and western dance, etc. may be covered. (DD)

PE 115 Team Sports I 1 credit

An activity course designed to teach scoring, proper technique, rules and strategy for softball, flag football and soccer. (DD)

PE 116 Karate I 1 credit

This course is designed to instruct students in the techniques and skills of Shotokan Karate. Emphasis will be on physical conditioning and mental concentration. (F, Sp)

PE 117 Personal Fitness 1 credit

The purpose of this course is to provide the student instruction in individual fitness and wellness. Emphasis is placed on cardiovascular endurance, muscular strength and muscular endurance. Other components will include designing and implementing a personal exercise prescription in relation to individual goals. May be taken up to two times for a total of two credit hours. (F, Sp)

PE 123 Horseback Riding I 1 credit

An activity class designed to introduce the student to horseback riding. Emphasis is placed upon basic skills of horsemanship, rules of safety and the care of horses. (Lab fee) (Sp)

PE 124 Horseback Riding II 1 credit

A continuation of Horseback Riding I. (Lab fee) (DD)

PE 201 Golf II 1 credit

A continuation of Golf I. (DD)

PE 202 Tennis II 1 credit

A continuation of Tennis I. (DD)

PE 204 Varsity Sports II 1 credit

Second season participation of Varsity Sports. (F, Sp)

PE 206 Weight Training II 1 credit

A continuation of Weight Training I. (F, Sp)

PE 207 Aerobics II 1 credit

A continuation of Aerobics I. (DD)

PE 208 Volleyball II 1 credit

A continuation of Volleyball I. (DD)

PE 211 Bowling II 1 credit

A continuation of Bowling I. (DD)

PE 215 Team Sports II 1 credit

A activity course designed to teach scoring, proper technique, rules and strategy for basketball, volleyball and team handball. (DD)

PE 216 Karate II 1 credit

A continuation of Karate I. (DD)

PE 220 Introduction to Recreation 3 credits

An introductory course designed to provide an analysis of the total field of recreation and leisure. The course includes description of its current scope and organizational practices; as well as the historical, sociological, psychological, philosophical and economic aspects of recreation and leisure. (F)

PE 230 Recreation Development 3 credits

This course is designed to give the student an overview of the principles of program planning and roles of the leader, administrator and community in program planning. Special considerations or programs are necessitated by various recreational settings, short-term seasonal, and year-round program planning. (Sp-every other year)

PE 240 Techniques of Recreation Leadership 3 credits

This course is designed to develop student competencies in the area of recreation leadership. The course will emphasize a theoretical understanding of leadership principles and techniques and will provide opportunities for practical application of these principles. (Sp-every other year)

PE 250 Recreation Internship 3 credits

The recreation internship is designed to provide the student with practical, on-the-job training in the recreation field. The internship will include 150 contact hours by the student. (F, Sp by arrangement)

PE 260 Foundations of Physical Education 3 credits

A study of the field of physical education/health, its foundational principles, aims, objectives, contributions, future directions, problems and career possibilities.

PHYSICAL SCIENCE

NOTES: *For other physical science courses, see course descriptions under Chemistry (CH).*

Physical Science and Math courses require placement scores must be less than two years old.

PS 101 Introduction to the Physical Sciences 4 credits

A survey course for non-science majors introducing the important concepts that govern the fields of physics, chemistry, meteorology, geology and astronomy. The impact of these sciences on the environment and human activities will also be considered. This course satisfies the general education physical science requirement. Lecture and laboratory. Prerequisite: DS 049 or equivalent. (Lab fee) (F, Sp, Su)

PS 104 Special Topics in Physical Science 1-3 credits

Independent study on a current topic in the physical sciences as demand warrants. Credit hours determined by the number of in class contact hours and any activities assigned outside the classroom appropriate to content. (DD)

PS 108 Introduction to Physics 4 credits

A course in physics surveying the fundamental concepts of mechanics, waves, electricity, magnetism and optics. Does not meet general education physical science requirement. Lecture and laboratory. Prerequisite: DS 049. (Lab fee) (DD)

PS 185 College Physics I 4 credits

A rigorous non-calculus introductory physics course primarily for students majoring in the life and environmental sciences and science education. A classical treatment of Newtonian mechanics, fluids, heat and thermodynamics. This course satisfies the general education physical science requirement. Lecture and laboratory. Prerequisite: MT 122; pre - or co-requisite: MT 148 or MT 132. (Lab fee) (F, Su)

PS 186 College Physics II 4 credits

A continuation of College Physics I. Topics to be covered include sound and waves, electricity, magnetism, optics, and topics in modern physics as time permits. Lecture and laboratory. Prerequisite: PS 185. (Lab fee) (DD)

PS 210 General Physics I 5 credits

Calculus-based physics designed for those students majoring in Chemistry, Physics or Engineering. The fundamental principles and theories of classical physics topics including kinematics, dynamics, statics, fluids, oscillations, wave mechanics and thermodynamics, based on calculus and vector manipulations. A laboratory course is included to emphasize and reinforce the principles and theories. Prerequisite: MT 150 and co-requisite: MT 250.

PS 212 General Physics II 5 credits

Continuation of General Physics I (PS 210). The fundamental principles and theories of classical physics topics including, electricity, electrostatics, elementary circuits, magnetism, electromagnetic phenomena, optics and modern physics, based on calculus and vector manipulations. A laboratory course is included to emphasize and reinforce the principles and theories. Prerequisite: PS 210, MT 150 and MT 250.

POLITICAL SCIENCE

PL 105 Missouri Constitution 1 credit

A survey of the history and content of the Missouri Constitution, its similarities and differences with the federal constitution, and its relevance today. Not open to students with credit for HI 103, PL 216 or any other course that covered instruction in Missouri State Constitution. (DD)

PL 116 State and Local Government 3 credits

A survey of the political forces which shape policy outcomes in states and local communities. Because of its impact on all levels of government, Federalism is treated in considerable detail. The question of who should provide leadership and the explorations of the roles of state legislatures, governors and judges, and the several variations, also are treated. (DD)

PL 216 National Government 3 credits

A basic introductory course to acquaint the student with the workings of the national government and the political system which bolsters it. Emphasis is placed on governmental structure, using the historical approach to answer the questions as to why the United States system has developed in the manner that it has. The Constitution is dealt with in detail as the source of governmental power (Meets the Constitutional Requirements). Prerequisite: Appropriate score on ACT, ASSET, Compass or SAT, or successful completion of DS 015. (F, Sp, Su)

PSYCHOLOGY

PY 121 General Psychology 3 credits

A survey course dealing with the basic facts and principles of human behavior, providing an understanding of why and how people think and act as they do, emphasizing the manner in which the environment influences people. (F, Sp, Su)

PY 214 Social Psychology 3 credits

This course can be applied to either the sociology or psychology requirement. The course considers individual behavior in relation to society and includes theoretical foundations, socialization, social cognition, group dynamics and leadership. Prerequisite: PY 121 or SO 107. (Sp)

PY 219 Adult Development and Aging 2 credits

This course focuses on the physiological, cognitive, personality and psychosocial development of middle and late adulthood. Emphasis is placed on the problems and concerns of aging, such as, interpersonal relations, retirement, the economy, psychopathology, and death and dying. Prerequisite: PY 121. (DD)

PY 220 Psychology of Supervision 3 credits

This is a basic course in psychological principles, as they apply to industrial supervision. The areas covered in the course will include motivation, conflict resolution, team building, interpersonal communication, leadership skills, ethical behavior and cross-cultural diversity. (DD)

PY 225 Child Psychology 3 credits

Psychological basis of child growth and development, with emphasis on the emotional, mental, physical and social needs of childhood including an analysis of the factors in the home, school and community which influence behavior and personality. Prerequisite: PY 121. (F, Sp, Su)

PY 226 Adolescent Psychology 3 credits

A course focused on physical, intellectual and emotional changes that occur during adolescence. Included is an examination of the unique problems and risks involved as the adolescent develops personal values, behavior patterns, sexuality and morality. Prerequisite: PY 121. (DD)

PY 230 Abnormal Psychology 3 credits

A descriptive course detailing the etiology, prevalence and types of psychological disorders. Topics include theoretical models and behavioral abnormalities, neurosis, psychosis, personality disorders, organic dysfunctions and types of psychotherapy. Prerequisite: PY 121. (F)

PY 233 Human Growth & Development 3 credits

A study of human development across the life span. The focus is on clearly-defined stages of life, each with its own unique problems, concerns and solutions. The history, research methods, theories, technology and terminology related to the study of human development are discussed. Prerequisite: PY 121. (Sp)

PY 235 Independent Research in Psychology 1-3 credits

Research on selected topics or problems, on an individual conference basis. Students may opt to present their research at regional or national conventions. This course may be repeated for one additional credit hour. Prerequisites: PY 121, EN 102 and consent of instructor. (DD)

PY 245 Advanced General Psychology 3 credits

This course is a survey of the field of scientific psychology, emphasizing the methods used in conducting research and in data analysis. The purpose is to give students a scholarly framework with which to view psychology as a biological and social science. Recommended for second year students. Prerequisite: PY 121 (DD)

RELIGION

RL 101 Introduction to Religion 3 credits

This course introduces the student the richness and variety of religious expressions around the world. Further, the student will be introduced to the theology and practices of the religions studied. The student will have an opportunity to analyze and compare religious systems. The student will be prepared to better understand contemporary religious issues and conflicts. Humanities credit. (DD)

SOCIAL SCIENCE

SO 107 General Sociology 3 credits

A survey course concerned with the study of human relationships in groups and of the structures and organizations that develop within human society. Emphasis is placed on various social phenomena and the theories which attempt to explain them. (F, Sp, Su)

SO 118 Special Topics in Social Science 3 credits

Varied topics. (F, Sp)

SO 201 Marriage and the Family 3 credits

This course is designed to represent an analysis of the institution of the family and to provide an opportunity for the student to objectively study such basic phenomena as courtship patterns, marriage forms and socialization techniques. (F)

SO 202 Parenting Today 1 credit

A self-study course designed to allow students to read and write about a variety of issues today's families face, including divorce, discipline, scheduling, safety and toilet training. Students will develop comprehensive, critical analysis, and parenting skills. (Pass/Fail) (F, Sp)

SO 210 Social Problems 3 credits

This course discusses social problems such as violence, gender inequality, education and environment. It examines how social structure and culture of society contribute to social problems and their consequences. This course develops an understanding of the social forces that contribute to these problems, which leads to designing strategies for action. Prerequisite: SO 107. (Sp)

SO 230 People & Cultures of the World 3 credits

A course to give an American look at the anthropological study of world cultures. Cultural metaphors will be used as a method for understanding the cultural mind sets of a nation, a cluster of nations, and even a continent to quickly understand what members of a culture consider important. General types of cultures such as authority ranking, equality matching, market pricing, cleft, and torn. Cultural characteristics including religion, politics, gender, language, food, and history of the countries will also be examined. (Sp)

SO 231 Experiencing Culture 1 credit

This course is designed to allow students to read about a variety of issues in another culture and then experience the culture by traveling to

the selected country. The course will give students skills on relating with cultures other than their own. Pre/Co requisite: SO 230 (DD)

SO 250 Introduction to Social Work 4 credits

Introduction to Social Work provides students with an overview of professional social work practice including its history, philosophy, ethics, values, methods and fields of practice. Forty hours of volunteer experience required in an area human service agency. Prerequisites: PY 121 or SO 107 or instructor approval. (Sp)

SO 298 Deviant Behavior 3 credits

A course to look at the problems of breaking norms set by culture and society. Through this examination, students will explore several sociological theories behind crimes and other deviant behaviors. Some topics include domestic violence, mental illness, drug and alcohol usage, organized crime, sexual crimes, suicide and other deviant acts found in American society today. Prerequisite: SO 107 (F,Sp)

SPEECH

SP 150 Studies in Communication 1-3 credits

A special topics course in communication which may include interpersonal communication, nonverbal communication, advanced oral interpretation, theatre practice or forensics. The subtitle on the schedule of courses for a particular semester indicates specific content. Credit varies from one to three hours. The course may be repeated if the content changes. (DD)

SP 175 Speech Communications 3 credits

Learn how to better think and act as a public speaker by preparing the presenting speeches. Application of content and self assessment are principle learning strategies in this introductory course. The message-creation process stresses thinking broadly and deeply about the subject. The delivery approach emphasizes interactive skills and attitudes. Meets general education requirement. (F, Sp, Su)

SP 176 Oral Interpretation 3 credits

Study and oral reading of prose, drama and poetry. Performances for audiences beyond the classroom provide practical experience. Understanding literature and developing self-confidence are important aspects of the course. (DD)

THEATRE

TH 111 Introduction to Theatre 3 credits

A study of the interrelated roles contributing to the creation of a play: playwright, actor, director, designers and technicians. Examination of the history of theatre is a major component of the course. Humanities credit. (F, Sp)

TH 113 Beginning Acting 2 credits

Introduction to fundamentals necessary for the actor and an approach to creating a character. Improvisational exercises and short scenes enable students to experience the basics of the craft. (DD)

TH 201 Theatre Participation 1-3 credits

Exploration of one or more aspects of theatre (acting, directing, design, etc.) in a workshop environment. Participants may also satisfy requirements by working on a production. Hours are arranged; requires permission of the instructor. (DD)

WELDING TECHNOLOGY

WT 230 Print Reading for Welders

This course will help students develop the skills needed to interpret all types of working sketches and prints. Other topics covered include pipe welding symbols, metric and dual dimensioning, bills of materials, ISO for welding, and first and third angle orthographic projection.