



Mid-South
Community College

Course Descriptions

Chapter 10

Art

Required placement test scores or successful completion of DRDG 1023 Developmental Reading and DENG 1053 Developmental English is a prerequisite for all courses unless otherwise noted.

ARTS 1103 Art Appreciation **3 credits** **3 class hours** **F/S**

This course refines students' visual enjoyment. Students study major artists and art forms, and develop awareness of the visual arts while examining and analyzing sculpture, painting, and architecture forms. ARTS 1103 appeals to all students who are interested in acquiring an understanding of visual arts.

ARTS 1123 Introduction to Theatre **3 credits** **3 class hours** **F/S**

This course introduces students to the history and literature of the theatre as an art form from the early Greeks to the modern day. Assignments include reading, viewing videos and live performances, research, discussions, oral presentations, and writing.

ARTS 1313 Drawing **3 credits** **3 class hours** **S**

In this introductory course, students draw from figures or objects, and course content includes sketching and organizing two-dimensional space as well as learning shading and line fundamentals.

ARTS 1323 Painting **3 credits** **3 class hours** **S**

This course allows students to visually express themselves. Students create a series of paintings in various styles using various techniques in an attempt to find each students' own style or technique of painting.

Biology

Required placement test scores or successful completion of DRDG 1023 Developmental Reading and DENG 1053 Developmental English is a prerequisite for all courses unless otherwise noted.

BIOL 1114 General Biology **4 credits** **3 class, 2 lab hours** **F/S**

Prerequisite: DMTH 1083 Intermediate Algebra with a grade of "C" or better. Corequisite: BIOL 1110 General Biology Lab. This course introduces modern concepts of biological science. Topics include the nature of life, cell theory, cell chemistry, and genetics. A two-hour laboratory component is included to provide students with hands-on activities and projects to further their understanding of scientific methodology and instruments. This course requires a lab fee.

BIOL 1124 Plant Biology **4 credits** **3 class and 2 lab hours** **S**

Prerequisite: None. The three primary objectives of Plant Biology are to introduce broad concepts in the study of plant science including plant populations and ecosystems. Major topics include plant cells and cell function, whole plant structure and function, and plant evolution and diversity with emphasis given to plants used for alternative energy production. A two-hour laboratory component is included to provide students with hands-on activities and projects to further their understanding of scientific methodology and instruments.

BIOL 1214 Anatomy & Physiology I **4 credits** **3 class, 2 lab hours** **F/S**

Prerequisite: BIOL 1114 General Biology. Corequisite: BIOL 1210 Anatomy & Physiology I Lab. This course designed for nursing students provides a study of the structure, function, and integrated activity of the cells, tissues, and organ systems of the human body with special attention to the integumentary, skeletal, muscular, and nervous systems. A two-hour laboratory component is included to provide students with hands-on activities and projects to further their understanding of scientific methodology and instruments. This course requires a lab fee.

BIOL 1224 Anatomy & Physiology II 4 credits 3 class, 2 lab hours F/S
Prerequisite: BIOL 1214 *Anatomy & Physiology I. Corequisite:* BIOL 1220 *Anatomy & Physiology II Lab.*
 A continuation of Anatomy and Physiology I for nursing students, this course covers the cardiovascular, lymphatic, respiratory, digestive, urinary, and reproductive systems. A two-hour laboratory component is included to provide students with hands-on activities and projects to further their understanding of scientific methodology and instruments. This course requires a lab fee.

BIOL 2413 Nutrition 3 credits 3 class hours F/S
 This is an introduction to the basic science of nutrition and deals with normal nutrition in the healthy individual. Life styles, goals, culture, growth and development, and the meaning of food and eating are explored.

BIOL 2504 Microbiology 4 credits 3 class 2 lab hours F/S
Prerequisite: BIOL 1114 *General Biology. Corequisite:* BIOL 2500 *Microbiology Lab.* This course provides students who have no prior background in microbiology with an introduction to the morphology and biological activity of microorganisms. Since the course is intended primarily for students who will enter the nursing and allied health professions, emphasis will be given to the medical implications of microbial activity. After completing this course, students will have sufficient depth of knowledge to understand the nature, etiology, and control of infectious diseases. This course requires a lab fee.

Business

Required placement test scores or successful completion of DRDG 1023 Developmental Reading and DENG 1053 Developmental English is a prerequisite for all courses unless otherwise noted.

BUSN 1103 Introduction to Business 3 credits 3 class hours F/S
 Designed to give students a survey in the field of business, including terminology and career opportunities, this course introduces the operation of the business segments of society and includes the free enterprise system, management, marketing, finance, and government regulation.

BUSN 1143 Business Communication 3 credits 3 class hours F/S
Prerequisite: ENGL 1113 *English Composition I with a grade of "C" or better or equivalent placement test scores.*
 This course focuses on written and oral communication within an organization. Topics covered include the foundations of business communication, the composition and revision of letters, memos, reports, proposals, and resumes, as well as the preparation and delivery of oral presentations. Attention is given to appropriate style and diction for business environments and to techniques for composing direct, routine, rejection, and persuasive correspondence.

BUSN 1163 First-Line Supervision 3 credits 3 class hours F
 This course introduces students to contemporary supervisory issues and presents the skills needed to make effective work-related decisions at the first-line managerial level. Major topics include workplace communication, leadership, team building, conflict resolution, motivation diversity awareness, and performance evaluation.

BUSN 1201 Career Preparation 1 credit 1 class hour F/S
Prerequisite: Completion of 20 or more credit hours. This course provides information on career planning and decision-making, job search preparation, and professionalism skills for employees. Students will learn to explore and evaluate career options, write a professional resume, prepare for an interview, and communicate effectively with potential employers and co-workers.

BUSN 1203 Basic Marketing 3 credits 3 class hours F
Prerequisite: BUSN 1103 *Introduction to Business.* This course is an introduction to marketing in the global economy with special emphasis on marketing as it is practiced in the U.S. Topics include marketing strategies, functions, philosophies, planning and research; legal considerations; customer behavior; international marketing; and marketing management.

- BUSN 1223 Administrative Office Procedures** **3 credits** **3 class hours** **S**
 This course introduces students to current office practices and procedures. Topics include office organization and supervision issues; communication and conflict resolution; procedure analysis for billing, purchasing, and payroll; operation of common office equipment; form design and control; and storage and retrieval of information. Case studies and projects integrate theory with practical applications.
- BUSN 1233 Intro to Entrepreneurship** **3 credits** **3 class hours** **F/S**
 An introduction to the role of entrepreneurial businesses in the US, the impact of entrepreneurial businesses on the US and global economy, how ideas become businesses, how entrepreneurs operate within a company and the general precepts of entrepreneurial businesses.
- BUSN 1273 Intro to Operations Management** **3 credits** **3 class hours** **F**
Prerequisite: DMTH 1083 Intermediate Algebra with a grade of "C" or better or equivalent placement test scores and BUSN 1103 Introduction to Business. The focus of this course is on operations planning and management with particular emphasis on service industries. The characteristics of the industrial enterprise, the process of forecasting needs and making material procurement decisions, the growing importance of Supply Chain Management, the challenges of enterprise organization, facility design, product design, process mapping and improvement and automation are discussed along with techniques for analyzing and improving productivity. It is a necessary introduction to the processes used to manage and supervise business operations.
- BUSN 1303 Business Mathematics** **3 credits** **3 class hours** **F**
Prerequisite: DMTH 1083 Intermediate Algebra with a grade of "C" or better or equivalent placement scores. This course covers mathematics applied to problems in a business environment in areas such as marketing, accounting, finance, retailing, statistics, financial reporting, inventory, banking, and graphics. Problem solving exercises encourage students to make effective business and financial decisions based on mathematical computations. Other activities include reading, interpreting, and drawing conclusions from data tables in order to solve business problems and monitor issues related to business productivity. Students use authentic business documents, such as spreadsheets, databases, and financial reports to solve business problems.
- BUSN 1423 Principles of Accounting I** **3 credits** **3 class hours** **F**
Prerequisite: DMTH 1083 Intermediate Algebra with a grade of "C" or better or equivalent placement scores. This course presents the fundamentals of accounting theory, principles and terminology. Students are introduced to double-entry bookkeeping for proprietorships and partnerships.
- BUSN 1433 Principles of Accounting II** **3 credits** **3 class hours** **S**
Prerequisite: BUSN 1423 Principles of Accounting I with a grade of "C" or better. A continuation of BUSN 1423, this course completes the basics of accounting theory, principles, and terminology. Emphasis is given to financial statements and analysis.
- BUSN 1453 Human Resource Management** **3 credits** **3 class hours** **F**
 This course addresses contemporary problems in human resource management using a systems approach that examines the many interdependencies affecting personnel decision-making, both from the organization's internal and external environments. Topics include the following human resource decision areas: planning, staffing, employee development, compensation and benefits, employee and labor relations. Emphasis is placed on measuring the effectiveness of human resource management programs.
- BUSN 2033 Legal Environment of Business** **3 credits** **3 class hours** **S**
Prerequisite: BUSN 1103 Introduction to Business. An introduction to the legal system and its common law origin, this course emphasizes basic concepts of the judicial system, law of torts, contracts, and the Uniform Commercial Code that applies to business transactions.

BUSN 2043 Supervisor Safety Management **3 credits** **3 class hours** **S**
 This course introduces students to the basic skills of managing practical safety issues in an industrial environment. Skill areas covered are basic safety management techniques, promoting workplace safety and health performance, hazard communication, materials handling and storage, industrial hygiene, and environmental management.

BUSN 2053 Funding Entrepreneurial Ventures **3 credits** **3 class hours** **F/S**
Prerequisites: BUSN 1433 Principles of Accounting II and BUSN 2033 Legal Environment of Business. A course designed to teach the students the various types of funding mechanisms available to the entrepreneurial company and the importance of selecting the proper funding method.

BUSN 2113 Principles of Management **3 credits** **3 class hours** **S**
Prerequisite: BUSN 1103 Introduction to Business. This course analyzes various elements necessary for managerial action, the importance of management, and various functions performed by managers, including planning, staffing, organizing, directing, and controlling.

BUSN 2123 Introduction to E-Business **3 credits** **3 class hours** **F**
Prerequisite: BUSN 1103 Introduction to Business. This course is designed to give students a broad overview of electronic commerce in a global economy, with an emphasis on Internet retailing, business-to-business e-commerce, and the legal and ethical ramifications of conducting business online. May be replaced by COMP 2003 Keyboarding for Professionals for Application Specialist students.

BUSN 2133 Introduction to Project Management **3 credits** **3 class hours** **F/S**
Prerequisite: Approval of Academic Advisor. Students should be in their last semester of enrollment. Designed as a concluding learning experience, this course builds upon previous skills and knowledge. Students learn the principles, concepts, tools, and techniques of project management to improve performance and overall organizational effectiveness. Students will use project management software and apply techniques such as C.P.M. and P.E.R.T. to planning, scheduling, decision support, and tracking.

BUSN 2143 Business Logistics **3 credits** **3 class hours** **F**
Prerequisites: BUSN 1103 Introduction to Business and DMTH 1083 Intermediate Algebra or equivalent. This course presents the importance of the field of business logistics to the successful management of supply chains in the service and manufacturing industries. Techniques for improving production, measuring productivity and customer service, planning and managing the resources of the enterprise, managing and properly deploying inventory, fulfilling customer requirements, selecting and utilizing the appropriate form of transportation, accessing the “after-market” support requirements, applying the concepts of continuous process improvement to logistics, and budget preparation and performance tracking are discussed and demonstrated.

BUSN 2993 Capstone Learning Experience **3 credits** **F/S**
Prerequisite: BUSN 2133 Introduction to Project Management and 2.0 GPA or higher and submission of an approved Capstone Learning Project Application by the date listed in the Academic Calendar prior to the semester of intended enrollment. Registered students must be in their final semester of enrollment. Students, with the assistance of a faculty facilitator, choose a project, identify project stakeholders, and develop and execute a formal project plan. Students maintain a journal which documents goals, progress, and barriers encountered. Most projects include an oral and/or written presentation at the conclusion of the semester.

Chemistry

Required placement test scores or successful completion of DRDG 1023 Developmental Reading II and DENG 1053 Developmental English II is a prerequisite for all courses unless otherwise noted.

CHEM 1314 Chemistry I **4 credits 3 class and 2 lab hours** **F**
Prerequisite: DMTH 1083 Intermediate Algebra with a grade of “C” or better or equivalent placement scores.
Corequisite: CHEM 1310 Chemistry I Lab. This is an introductory course in algebra-based chemistry for science majors. Topics that will be covered in this course include scientific measurement, the periodic table, modern atomic theory, nomenclature of chemical compounds, atomic and molecular structure, stoichiometry, chemical bonding, and chemical reactions. The course contains a two-hour laboratory component with hands-on activities and projects to further students’ understanding of scientific knowledge methodology and instruments. This course requires a lab fee.

CHEM 1324 Chemistry II **4 credits, 3 class and 2 lab hours** **S**
Prerequisite: A grade of “C” or better in CHEM 1314, Chemistry I. *Corequisite:* CHEM 1320 Chemistry II Lab. A continuation of CHEM 1314 for science majors, this course includes a more in-depth study of chemical reactions. Course topics include thermodynamics, acids and bases, reduction-oxidation reactions, and mechanisms of chemical reactions. A two-hour laboratory component with hands-on activities and projects is designed to further the student’s understanding of scientific knowledge methodology and instruments. This course requires a lab fee.

Childcare and Early Childhood Development

Required placement test scores or successful completion of DRDG 1023 Developmental Reading and DENG 1053 Developmental English is a prerequisite for all courses unless otherwise noted.

CECD 1003 Foundations of Early Childhood Education, CECD 1013 Child Development, CECD 1023 Preschool Curriculum and Materials, CECD 2983 Practicum I, and CECD 2993 Practicum II provide the core curriculum to prepare students for Child Development Associate (CDA) certification.

CECD 1003 Foundations of Early Childhood Ed **3 credits 3 class hours** **F**
 This course is designed to give the student guidance through the CDA (Child Development Associate) process. Students reflect upon values, beliefs, and attitudes that build relationships with children. Students learn the skills of guiding and caring for children and for creating an emotionally safe and age-appropriate environment, which are conducive to children’s learning. Maintenance of a resource file is required.

CECD 1013 Child Development **3 credits 3 class hours** **F**
 This course is an in-depth study of child development beginning with conception. Students study the developmental stages of children and the techniques, skills, and activities that provide for children’s optimal growth as they develop and strengthen their physical, cognitive, social, and emotional abilities. A research project on children’s special needs is required.

CECD 1023 Preschool Curriculum/Materials **3 credits 3 class hours** **F**
 This course emphasizes the development of activities and materials that promote children’s physical, intellectual, social, and emotional development. Students learn curriculum planning, instructional strategies, guidance techniques, and the control of disruptive behaviors. They gain practical experience in observing and recording behavior and applying their learning to classroom situations.

CECD 1123 Infant and Toddler Curriculum **3 credits 3 class hours** **S**
 This course focuses on planning a developmentally appropriate curriculum for infants and toddlers in group care. Emphasis is placed on the 3 A’s of development in children. Students learn to select and use appropriate individualized teaching strategies and activities to implement with children from birth to three years. Students are given the opportunity to explore different program models by visiting external childcare facilities.

CECD 2983 Practicum I **3 credits** **F/S**
Prerequisites: Permission of instructor. This course is a planned program (240 clock hours) of vocational, exploratory, or general work experience in an approved childcare facility to provide students with new and/or expanded learning opportunities. Students, with faculty supervision and employer cooperation, will follow the guidelines established for CDA certification. Previous work experience in a licensed child care facility may be accepted for credit in lieu of this course.

CECD 2993 Practicum II **3 credits** **F/S**
Prerequisite: Permission of instructor. An extension of CECD 2983 Practicum, the work experience of this course (240 clock hours) may be completed off-site at an approved child care facility with formal observations by college personnel. Students must maintain a portfolio of their experiences and observations. Enrollment in this class requires purchase of a practicum kit.

College Survival

See Developmental Education, page 159

Commercial Driver Training

See Transportation, page 181

Communications and Literature

Required placement test scores or successful completion of DRDG 1023 Developmental Reading II and DENG 1053 Developmental English II is a prerequisite for all courses unless otherwise noted.

ENGL 1113 English Composition I **3 credits** **3 class hours** **F/S**
Prerequisite: DENG 1053 Developmental English II and DRDG 1023 Developmental Reading II with grades of "C" or better or equivalent placement scores. English Comp I gives attention to critical reading and thinking skills applicable to all college courses. The course stresses writing as a process and uses the essay as the vehicle while stressing invention, drafting, revising, and rewriting. This course utilizes computers and requires keyboarding skills of 20 wpm or better. A lab fee is required.

ENGL 1133 Writing for the Workplace **3 credits** **3 class hours** **F/S**
Prerequisite: ENGL English Composition I with a grade of "C" or better. In this workshop / discussion course, we will study professional writing with an emphasis on audience analysis. We will focus on rhetorical strategies for writing letters, memos, reports, summaries, resumes, and oral presentations. We will also focus on developing the collaborative writing abilities so often required of professionals and technical writers at every stage of the writing process: brainstorming, drafting, revising, editing, and proofreading.

ENGL 1123 English Composition II **3 credits** **3 class hours** **F/S**
Prerequisite: ENGL 1113 English Composition I with a grade of "C" or better. English Comp II continues to develop the student's writing skills through practice in different kinds of rhetorical development while emphasizing quality and forms of writing. Students learn both APA and MLA documentation and produce a research paper using MLA documentation. This course utilizes computers and requires keyboarding skills of 20 wpm or better. A lab fee is required.

ENGL 2153 World Literature I **3 credits** **3 class hours** **F**
Prerequisite: ENGL 1123 English Composition II with a grade of "C" or better. In this course, the student reads and analyzes masterpieces of the Ancient World (including works from Mesopotamia and Egypt, India, China, and Greece and Rome) and of the Early Middle Period (including works from the Middle East, India, Asia, and Europe). Students respond to reading selections in writing, through class discussions, and through individual projects.

ENGL 2163 World Literature II 3 credits 3 class hours S

Prerequisite: ENGL 1123 *English Composition II with a grade of "C" or better.* In this course, students read and analyze masterpieces of the Late Middle Period (including works from the Middle East, India, Asia, and Europe) and of the Modern Era (including works from Africa, Southeast Asia, Europe, and the Americas). Students analyze and respond to reading selections in writing, through class discussions, and through individual projects.

ENGL 2183 American Literature Before 1865 3 credits 3 class hours S

Prerequisite: ENGL 1123 *English Composition II with a grade of "C" or better.* This course provides an introduction to significant works in American literature spanning the genres of fiction, drama, poetry, and prose before 1865. Students analyze and respond to reading selections in writing, through class discussions, and through individual projects.

ENGL 2193 American Literature Since 1865 3 credits 3 class hours S

Prerequisite: ENGL 1123 *English Composition II with a grade of "C" or better.* This course provides an introduction to significant works in American literature spanning the genres of fiction, drama, poetry, and prose since 1865. Students analyze and respond to reading selections in writing, through class discussions, and through individual projects.

ENGL 2213 Creative Writing 3 credits 3 class hours F

Prerequisite: ENGL 1123, *English Composition II with a grade of "C" or better.* This course introduces students to the basics of creative writing. Students explore the creative process and apply it to writing poetry, fiction, drama, and nonfiction. The course offers a workshop environment where students have the benefit of peer review and critique.

ENGL 2303 Oral Communication 3 credits 3 class hours F/S

This course investigates the components of oral communication through study and practice in dyadic, small group, and speaker-audience situations.

Computer Applications

Required placement test scores or successful completion of DRDG 1023 Developmental Reading and DENG 1053 Developmental English is a prerequisite for all courses unless otherwise noted.

COMP 1113 Computer Fundamentals 3 credits 3 class hours F/S

Prerequisite: *Keyboarding skills of 20 words per minute or better or concurrent enrollment in DKEY 1101 Computer Keyboarding.* This course is designed to provide students with a fundamental knowledge of computers and applications software. Topics include computer organization, storage media and devices, file processing techniques, computer systems and configurations, computer-based information systems, and computer terminology. Additionally, the course serves as an introduction to the use of computer hardware; to word processing, electronic spreadsheet, and data base management software; and to the Internet. Students may challenge this course through Credit by Examination.

COMP 1213 Database Applications 3 credits 3 class hours F/S

Prerequisite: *COMP 1113 Computer Fundamentals or ISTC 1013 IT Principles and Practices.* This course emphasizes features, functions and terminology of relational database management in support of project development and management. Students will learn database design and data maintenance by using queries, form design, reporting, and macro writing. Students enrolled in the Applications Specialist track of the AAS in Business Technology are required to take the Microsoft® Certification Application Specialist (MCAS) Examination and should purchase a voucher from the MSCC bookstore at the beginning of the semester.

COMP 1313 Spreadsheet Applications **3 credits** **3 class hours** **S**

Prerequisite: COMP 1113 Computer Fundamentals or ISTC 1013 IT Principles and Practices. This course emphasizes features, functions, and terminology of electronic spreadsheets in support of project development and management. Students learn to create, edit and format worksheets, develop and format charts, write macros, and work with formulas and “what if?” conditions. Students enrolled in the Applications Specialist track of the AAS in Business Technology are required to take the Microsoft® Certification Application Specialist (MCAS) Examination and should purchase a voucher from the MSCC bookstore at the beginning of the semester.

COMP 1413 Document Processing **3 credits** **3 class hours** **F/S**

Prerequisites: COMP 1113 Computer Fundamentals or ISTC 1013 IT Principles and Practices and demonstration of minimum keyboarding skills of 20 wpm. This course emphasizes the application of word processing concepts and skills to enter, edit, and format documents. Students will create business letters, memoranda, reports, tables, columns, and merged documents.

COMP 2003 Keyboarding for Professionals **3 credits** **3 class hours** **S**

Prerequisite: COMP 1113 Computer Fundamentals and keyboarding skills of 20 wpm with 90% accuracy or better. This course introduces students to computer keyboarding principles and techniques and provides practical application exercises through Microsoft application software. It is designed to increase both keyboarding speed and accuracy and provide students with a working knowledge of file management, including saving, retrieving, and deleting files, and networking through sending and receiving email attachments. Attention is also given to improving proof-reading skills and effectively following oral and written instructions for document preparation.

COMP 2013 Presentation Applications **3 credits** **3 class hours** **F**

Prerequisite: COMP 1413 Document Processing or COMP 1113 Computer Fundamentals. This course is designed to give students basic knowledge of Computer Based Training software that allows them to create a variety of productions by creating and importing graphics, by importing video, by improving or changing colors and resolutions, and by utilizing different fonts and formats effectively. Students enrolled in the Applications Specialist track of the AAS in Business Technology are required to take the Microsoft® Certification Application Specialist (MCAS) Examination and should purchase a voucher from the MSCC bookstore at the beginning of the semester.

COMP 2503 Advanced Document Processing **3 credits** **3 class hours** **F**

Prerequisite: COMP 1413 Document Processing. This course covers advanced Microsoft Word skills. Individuals learn how to work with larger documents and collaborate with others working on the same document, arrange text and text objects create and modify charts and forms, and customize the Word environment. Students enrolled in the Applications Specialist track of the AAS in Business Technology are required to take the Microsoft® Certification Application Specialist (MCAS) Examination and should purchase a voucher from the MSCC bookstore at the beginning of the semester.

Criminal Justice

Required placement test scores or successful completion of DRDG 1023 Developmental Reading and DENG 1053 Developmental English is a prerequisite for all courses unless otherwise noted.

CJUS 1003 Introduction to Criminal Justice **3 credits** **3 class hours** **F/S**

This course presents the history, development, and philosophy of criminal justice in a democratic society. The constitution, the sources and rationale of the law, and the jurisdictions of local, state, and federal law enforcement agencies and courts are discussed. Students are provided with information about possible career orientations.

CJUS 1023 Investigative Procedures **3 credits** **3 class hours** **F**
Prerequisite: CJUS 1003 Introduction to Criminal Justice. This course provides an in-depth study of the purpose, procedures, and ethics of criminal investigation in relation to such areas as vice, rape, larceny, and burglary. The rules of evidence, search and seizure, and procedures for storing and retrieving evidence are covered. Students will learn effective interrogation techniques and the tools and techniques useful in the effective reconstruction of criminal activity.

CJUS 1033 Criminal Procedures **3 credits** **3 class hours** **S**
Prerequisite: CJUS 1013 Criminal Law. This course provides a review of the various court systems and discusses the principles of constitutional, federal, state, and civil laws as they affect law enforcement. Students are also introduced to the rules governing admissibility of evidence and criminal procedures in various courts.

CJUS 2013 Community Relations in Law Enforcement **3 credits** **3 class hours** **S**
Prerequisite: CJUS 1003 Introduction to Criminal Justice. This course presents the various components of human relations utilized in law enforcement and the way those relationships interact and collide with public expectations and sentiment about law enforcement. The focus of this course is on the dynamic nature of police relationships with citizens, other police officers, and how these relationships are crucial to maintaining professional policing in America.

Developmental Education

CSUR 1101 College Survival Skills **1 credit** **1 class hour** **F/S**
 Designed to assist students in successfully completing their chosen academic programs, this course orients students to the resources available at the College, to goal setting, and to time management skills. Students will also be taught skills to facilitate a smooth transition into college-level work incorporating their individual learning styles. This course also provides a foundation for General Education Outcomes in areas such as communication, critical thinking, and interpersonal skills.

DENG 1033 Developmental English I **3 credits** **3 class hours** **F/S**
Prerequisite: Scores of 14 or below on the ACT, 37 or below on the COMPASS English, or 34 or below on the ASSET English test. This course incorporates a laboratory approach to individualized instruction to meet different students' needs. Course content may include fundamentals of grammar, sentence structure, and paragraph development. A grade of "C" or better is required for successful completion of this course.

DENG 1053 Developmental English II **3 credits** **3 class hours** **F/S**
Prerequisite: Scores of 15 to 18 on the ACT, 38–74 on the COMPASS, or 35–44 on the ASSET English test, or a grade of "C" or better in DENG 1033 Developmental English I. This course is designed to help students develop basic English skills necessary to college-level writing through continued emphasis on grammar and sentence structure plus instruction in the development of clear, concise, well-organized paragraphs and essays that are the building blocks of college essays and reports. Some assignments may be completed outside of class through the use of web-based programs such as Blackboard and PSCIWORDS. DENG 1053 does not satisfy the English requirement for degree and certificate programs. A grade of "C" or better is required for successful completion of this course. This course utilizes computers and carries a laboratory fee.

DKEY 1101 Computer Keyboarding **1 credit** **1 class and 2 lab hours** **F/S**
Prerequisite: None. This course introduces students to computer keyboarding principles and techniques and provides practical application exercises designed to increase both speed and accuracy. Students may exit (test out) upon completion of all weekly assignments, coupled with the ability to type 20 WPM with 90 percent accuracy. College credit is awarded for successful completion, but no certificate or degree requirements are satisfied by this course.

DKEY 1201 Introduction to Computers **1 credit** **3 class hours** **F/S**

Prerequisite: None. This is an introductory course covering basic computer skills. Emphasis will be placed on PC basics, file management, the Internet, email. An introduction to application software will also be presented. Enrollment is on a pass/fail basis. The course does not satisfy any degree or certificate requirements, nor is the grade computed in students' GPA calculations.

DMTH 1063 Pre-Algebra **3 credits** **3 class hours** **F/S**

Prerequisite: Scores of 6–15 on the ACT, 0–59 on the COMPASS Pre-Algebra test, or 0–21 on the ASSET Numerical Skills Test. This course provides reinforcement of basic arithmetic operations on whole numbers, signed numbers, decimals, and fractions. Students will also learn how to solve algebraic equations using the multiplication, division, addition, and subtraction principles. Attention is given to the solution of word problems using graphs, ratios, proportions, and percents. This course does not satisfy the mathematics requirements for any certificate or degree program. A grade of “C” or better is required for successful completion of the course. This course requires a laboratory fee.

DMTH 1073 Elementary Algebra **3 credits** **3 class hours** **F/S**

Prerequisite: Scores of 16–17 on the ACT, 60–100 on the COMPASS Pre-Algebra Test and 22–45 on the COMPASS Algebra Test, or 44–55 on the ASSET Numerical Skills Test and 23–42 on the ASSET Elementary Algebra Test, or grade of “C” or better in DMTH 1063 Pre-Algebra. Course content includes signed numbers, linear equations and inequalities, factoring, laws of exponents, and rational expressions. This course does not satisfy the mathematics requirement for any certificate or degree program. A grade of “C” or better is required for successful completion of the course. This course requires a laboratory fee.

DMTH 1083 Intermediate Algebra **3 credits** **3 class hours** **F/S**

Prerequisite: Scores of 18 on the ACT, 46–65 on the COMPASS Algebra Test, or 43–51 on the ASSET Elementary Algebra Test, or a grade of “C” or better in DMTH 1073 Elementary Algebra. Course content includes performing operations with rational expressions, graphing linear equations, solving systems of equations, performing operations with roots and radicals, and finding solutions to quadratic equations. Word problems are integrated within the various topics. This course satisfies the mathematics requirement for some certificate and degree programs; however, either MATH 1113 College Algebra or MATH 1133 Math for Liberal Arts is the recommended course for students planning to transfer to a baccalaureate program. A grade of “C” or better is required for successful completion of this course. This course requires a laboratory fee.

DRDG 1003 Developmental Reading I **3 credits** **3 class hours** **F/S**

Prerequisite: Scores of 14 or below on the ACT, 60 or below on the COMPASS, or 23 to 34 on the ASSET reading test. This course emphasizes reading comprehension and incorporates a laboratory approach to individualized instruction to meet different student needs. Course content may include improving college vocabulary skills, basic reading skills. A grade of “C” or better is required for successful completion of this course.

DRDG 1023 Developmental Reading II **3 credits** **3 class hours** **F/S**

Prerequisite: Scores of 15–18 on the ACT, 61–80 on the COMPASS, or 35–42 on the ASSET reading test, or a grade of “C” or better in DRDG 1023 Developmental Reading I. This course, designed for students who need additional instruction in comprehension and vocabulary skills, provides individualized instruction for students whose placement test scores indicate a need to strengthen reading skills for college success. Course content focuses on improving comprehension and concentration, developing a college-level vocabulary, and increasing reading speed. This course does not apply toward requirements for degree and certificate programs, but it (or the appropriate placement test score in reading) is required before students can enroll in most college-level courses. A grade of “C” or better is required for successful completion of this course.

DSTU 1102 College Study Skills **2 credits** **2 class hours** **F/S**

This course addresses motivation, time management, notetaking, test-taking skills, and effective interaction with instructors. Students placing in two or more developmental courses must enroll in this course during their first 12 hours of enrollment. College credit is awarded for those who successfully complete the course, but no certificate or degree requirements are satisfied by this course.

Economics

Required placement test scores or successful completion of DRDG 1023 Developmental Reading and DENG 1053 Developmental English is a prerequisite for all courses unless otherwise noted.

ECON 2213 Macroeconomics **3 credits** **3 class hours** **F**
A general introduction to basic concepts in economics, this course includes national income, money and banking, fiscal policy, and economic growth. Emphasis is placed on macroeconomics as applied to the world of today.

ECON 2223 Microeconomics **3 credits** **3 class hours** **S**
This course is a continuation of ECON 2213 Macroeconomics and emphasizes theories of cost, price, and consumer behavior. Attention is given to production, distribution, and consumption of goods and markets of pure and imperfect competition.

Education

Required placement test scores or successful completion of DRDG 1023 Developmental Reading and DENG 1053 Developmental English is a prerequisite for all courses unless otherwise noted.

EDUC 2013 Survey of Early Childhood Ed **3 credits** **3 class hours** **F/S**
Prerequisite: ENGL 1113 English Composition I. An introduction to the multi-disciplinary profession of early childhood education, this course focuses on historical and philosophical foundations, current and legal issues, program models and appropriate instructional strategies. The course meets NAEYC program standards and ADENG State licensure guidelines. Successful completion includes five (5) clock hours of observation of various early childhood educational programs.

EDUC 2023 Introduction to Education **3 credits** **3 class hours** **F/S**
Prerequisite: Successful completion of 30 credit hours. This course provides students with an overview of teaching as a profession and introduces them to the philosophical and historical foundations of the American education system as well as to fundamental student issues related to social, economic, and cultural diversity and to the ethical responsibilities of students and teachers. Students engage in 20 hours of observations of the educational process in elementary, middle school and secondary school settings and begin development of a professional portfolio.

EDUC 2033 Child Growth and Development **3 credits** **3 class hours** **F/S**
Prerequisite: ENGL 1113 English Composition I. This class includes a study of relevant child development data, encompassing development from conception to the middle childhood years. Practical application of theory is provided through a variety of hands-on experiences and observations.

EDUC 2213 Intro to Educational Technology **3 credits** **3 class hours** **S**
Prerequisite: COMP 1113 Computer Fundamentals. This course provides students with an overview of the technology which can enhance teaching and learning. Students learn basic computer skills and the uses of various software applications (word processing, database, spreadsheets, graphics, and multimedia) in the educational setting.

Note: Baccalaureate education degree requirements may differ; so, although all courses in this program transfer, they may not meet specific education degree requirements at every transfer institution. Students are encouraged to consult the MSCC Registrar or the catalog of their transfer institution in advance to determine degree credits.

Emergency Medical Technician

See Medical Programs, page 175

Foreign Languages

Required placement test scores or successful completion of DRDG 1023 Developmental Reading and DENG 1053 Developmental English is a prerequisite for all courses unless otherwise noted.

FREN 1113 French I **3 credits** **3 class hours** **F**

The objective of French I is to introduce the student to the basic language skills in French. Emphasis is given to oral pronunciation, vocabulary development, and grammar used in oral and written communication but also listening, reading, writing, and culture.

FREN 1123 French II **3 credits** **3 class hours** **S**

Prerequisite: FREN 1113. This course builds upon skills introduced in FREN 1113.

SPAN 1113 Spanish I **3 credits** **3 class hours** **F**

This course places emphasis on pronunciation, vocabulary development, and grammar used in oral and written communication.

SPAN 1123 Spanish II **3 credits** **3 class, hours** **S**

Prerequisite: SPAN 1113. This course builds upon skills introduced in SPAN 1113.

Geography

Required placement test scores or successful completion of DRDG 1023 Developmental Reading II and DENG 1053 Development English II is a prerequisite for all courses unless otherwise noted.

GEOG 1133 World Geography **3 credits** **3 class hours** **F/S**

This survey course's content emphasizes the relationship of human beings to their geographic environment. Students study various climatic and geographic regions of the world in relation to their influence on human activity.

Health and Physical Education

Required placement test scores or successful completion of DRDG 1023 Developmental Reading and DENG 1053 Developmental English is a prerequisite for all courses unless otherwise noted.

HPED 1113 Health and Safety **3 credits** **3 class hours** **F/S**

This course is designed to examine contemporary health-related issues for all dimensions of the individual—psychological, physical, social, spiritual, intellectual, and environmental—through focus on health promotion and disease prevention. Emphasis is placed on maintaining or improving quality of life by developing personal and social skills (decision-making, communication, stress management, goal setting) across health education content areas, as well as identifying and accessing appropriate health-related resources.

HPED 1702 Concepts of Physical Activity **2 credits** **2 class hours** **F/S**

Prerequisite: None. Course components include relationships between lifestyles and selected health problems, the knowledge and skill to participate in at least one lifetime physical activity, and the benefits of various physical activities. Students develop a personal health program that targets cardiorespiratory fitness, muscular strength and endurance, and flexibility. This course requires a laboratory fee.

Heavy Truck Diesel Maintenance

Required placement test scores or successful completion of DRDG 1023 Developmental Reading II and DENG 1053 Development English II is a prerequisite for all courses unless otherwise noted.

HTDM 1014 Preventive Maintenance 4 credits 2 class, 5.5 shop hours F

This course provides a fundamental understanding of heavy truck classifications and major components. Students will develop an understanding of the benefits of well-planned preventive maintenance service and of Federal Motor Carrier inspector qualifications, and learn how to prepare the heavy duty truck for cold weather. This course requires the purchase of a tool kit.

HTDM 1024 Electrical Systems I 4 credits 1 class, 7.75 shop hours F

This course covers the fundamentals of general electrical systems. Emphasis will be placed on diagnosis, testing, and repair of the batteries, starting system, charging system, and chassis electrical circuits using proper service manual procedures. Students will gain hands-on experience using digital volt/ohm meters (DVOM) and specialized test equipment used for diagnosing electrical/electronic systems problems.

HTDM 1034 Brake Systems 4 credits 2 class, 5.5 shop hours F

This course focuses on antilock and electronic brake systems. Students will learn the importance of well-functioning brake systems, the operation of the dual-brake circuit, and the requirements of the Federal Motor Vehicle Safety Standard NO. 121.

HTDM 1044 Electrical Systems II 4 credits 2 class, 5.5 shop hours S

Prerequisite: HTDM 1024 Electrical Systems I with a grade of "C" or better. Presenting the fundamentals of electronics and computer systems, this course emphasizes the understanding of an integrated circuit and its application in on-board vehicle electronics. The laboratory portion provides students with trouble shooting skills to learn proficiency in performing tests on key electronic components including diodes and transistors. The student will learn to use PC and OEM software to read, diagnose, and reprogram vehicle electronic systems.

HTDM 1054 Diesel Engines I 4 credits 2 class, 5.5 shop hours S

Prerequisite: HTDM 1024 Electrical Systems I with a grade of "C" or better. This course covers principles and fundamentals of the diesel engine including coolant systems, intake systems, exhaust systems, fuel systems, and engine and brake electronics. The laboratory portion provides hands-on practice with diagnostic and repair skills.

HTDM 1063 HVAC Systems 3 credits 1 class, 5.5 shop hours S

Prerequisite: HTDM 1024 Electrical Systems I with a grade of "C" or better. This course covers the theory and operation of vehicle heating, ventilation, and air conditioning systems. Manual and electronic control systems including blower controls and motors, air distribution and a/c operation are covered as well. Students will perform diagnosis, testing, and repair of the HVAC systems using the proper procedures and equipment and learn about Federal and State laws that pertain to refrigerants used in vehicle a/c systems.

HTDM 1073 Steering and Suspension 3 credits 1 class, 5.5 shop hours Su

Prerequisites: HTDM 1014 Preventive Maintenance. This course will cover the theory and operations of the various types of steering and suspensions used on highway transportation vehicles. The laboratory portion will provide the student with diagnosis, testing, and repair procedures of the various types of steering and suspension system.

HTDM 1084 Powertrain 4 credits 2 class, 5.5 shop hours Su

Prerequisites: HTDM 1014 Preventive Maintenance, HTDM 1024 Electrical Systems I with a grade of "C" or better. This course presents the theory and operation of manual transmissions, automatic transmissions, differentials, power dividers, clutches, and drive shafts. Attention is given to the theory and operation of mechanical, pneumatic, hydraulic, and electronic control devices for powertrain components. Students will perform maintenance, adjustments, disassembly, assembly, and installation of heavy duty clutch assemblies, manual transmissions, automatic transmission, differentials, and power dividers.

HTDM 1094 Diesel Engines II 4 credits 2 class, 5.5 shop hours Su
Prerequisite: HTDM 1054 Diesel Engines with a grade of “C” or better. A continuation of HTDM 1054 Diesel Engines I, this course covers the disassembly procedures, analysis, and rebuild procedures of the diesel engine. Attention will be give to electronic fuel injection as well as the mechanical fuel injection diagnosis and repair procedures.

History

Required placement test scores or successful completion of DRDG 1023 Developmental Reading and DENG 1053 Developmental English is a prerequisite for all courses unless otherwise noted.

HIST 1153 World Civilization I 3 credits 3 class hours F
 With emphasis on development of world civilizations, this course stresses cultural developments, the growth of institutions, and the expansion of world civilization to the early modern period.

HIST 1163 World Civilization II 3 credits 3 class hours S
 With emphasis on development of world civilizations, this course stresses cultural developments, the growth of institutions, and the expansion of world civilization since the early modern period.

HIST 2123 U.S. History Before 1877 3 credits 3 class hours F
 Major topics in this course include discovery and development of America, the Colonial settlement, the Revolutionary War, the new government, the Civil War and Reconstruction. The course emphasizes ideals, attitudes, and values of Americans in development of politics, culture, society, and economics.

HIST 2133 U.S. History After 1877 3 credits 3 class hours S
 A continuation of HIST 2123, this course begins after Reconstruction and ends with the present era. Major topics include industrial growth, the emergence of the U.S. as a world power, the Depression, World War II, and international developments.

HIST 2153 Arkansas History 3 credits 3 class hours S
 This course provides an overview of the political, economical, social, and cultural development of Arkansas beginning with the Indians and ending at present day with a special emphasis on national and regional perspectives of Arkansas.

Humanities

Required placement test scores or successful completion of DRDG 1023 Developmental Reading and DENG 1053 Developmental English is a prerequisite for all courses unless otherwise noted.

LDRS 2443 Leadership 3 credits 3 class hours F
 Students will study leadership theory by using a variety of learning techniques that may include, but not be limited to, the integration of humanities into the study of leadership, discussion, experiential exercises, films, and shared analysis. Students will successfully demonstrate critical thinking skills and understanding of the course material 1) by responding to, analyzing, and evaluating readings, exercise, and films; 2) by developing a personal leadership philosophy, an awareness of the moral and ethical responsibilities of leadership, and an awareness of one’s own ability and style of leadership.

PHIL 2013 Introduction to Philosophy 3 credits 3 class hours F/S
 This course serves as a general introduction to the concepts, terms, and principles of philosophy. The course will emphasize the concepts that humans have wondered about since ancient times and how they have sought to explain them. The philosophical method will be introduced.

Information Systems Technology

Please note that computer software applications courses are no longer listed here. They may be found in the **Computer Applications** section.

Required placement test scores or successful completion of DRDG 1023 Developmental Reading II and DENG 1053 Developmental English II is a prerequisite for all courses unless otherwise noted.

ISTC 1013 IT Principles and Practices 3 credits 3 class hours F/S

Prerequisite: Keyboarding skills of 20 wpm or better or concurrent enrollment in DKEY 1101 Computer Keyboarding. The topics covered in this course include computer hardware and software, file management and backup, Internet and LAN technology, digital media, the computer industry, databases, and information systems analysis and design.

ISTC 1023 IT Essentials I: PC Hardware/Software 3 credits 2 class, 2 lab hours S

Corequisite: ISTC 1013 IT Principles and Practices. This course presents an in-depth exposure to computer hardware and operating systems. Students learn the functionality of hardware and software components as well as suggested best practices in maintenance, and safety issues. Through hands on activities and labs, students learn how to assemble and configure a computer, install operating systems and software, and troubleshoot hardware and software problems. In addition, an introduction to networking is included. This course helps students prepare for CompTIA's A+ certification. This course requires a lab fee.

ISTC 1033 IT Essentials II: Network Operating Systems Software 3 credits 2 class, 2 lab hours F

Prerequisite: ISTC 1023 IT Essentials I. This course is an intensive introduction to multi-user, multi-tasking network operating systems. Characteristics of the Linux, Windows 2000, NT, and XP network operating systems will be discussed. Students will explore a variety of topics including installation procedures, security issues, back up procedures and remote access. This course requires a lab fee.

ISTC 1043 A+ Certification Prep Course 3 credits 2 class, 2 lab hours S

Prerequisite: ISTC 1023 IT Essentials I. This course provides a review of the core elements found on the A+ Certification Exam through discussion, computer-based testing, hands-on review, and textbook references.

ISTC 1053 Introduction to Web Page Design 3 credits 3 class hours F/S

Prerequisite: COMP 1113 Computer Fundamentals. This course is designed to teach the fundamentals of Extensible Hypertext (XHTML) and Hypertext Markup Language (HTML) and other aspects of Web authoring to prepare students for Certified Internet Webmaster certification. Students will learn HTML/XHTML and will create Web pages using XHTML/HTML tags to format text, hyperlinks, tables, graphics, and forms. Students will also work with Cascading Style sheets and study the basics of Dynamic HTML (DHTML) and how XHTML relates to the Extensible Markup Language (XML).

ISTC 1313 Internet Business Fundamentals (CIW) 3 credits 3 class hours S

Prerequisite: COMP 1113 Computer Fundamentals. Part of the Certified Internet Webmaster curriculum, this course teaches students how to access business information and resources on the Internet using a Web browser as a general purpose Internet application. Students will gain experience configuring both Mozilla Firefox and Microsoft Internet Explorer, along with other web browsers, to access rich multimedia data and objects, including Real Player, Shockwave, Flash, and QuickTime content. Students will also use a variety of Web-based search engines to conduct advanced searches and learn the basics of electronic commerce and security issues.

ISTC 1323 CIW Networking Foundations 3 credits 3 class hours F/S

Pre or Corequisites: ISTC 1053 *Introduction to Web Page Design* and ISTC 1313 *Internet Business Fundamentals*. Part of the Certified Internet Webmaster course sequence, this course is designed to teach students fundamental networking concepts and practices. Topics include network architecture and standards, networking protocols, TCP/IP, Internet servers, server-side scripting and database connectivity, and security. This course requires a testing fee for CIW students, who take the CIW Foundations Exam as the final exam at the end of the course. **NOTE:** This course must either be taken with the suggested corequisites, or it must be taken after them since the CIW Foundations certification exam encompasses all three courses.

ISTC 1513 Cisco Network Fundamentals (Cisco® CCNA I) 3 credits 2 class, 2 lab hours F/S

Corequisite: ISTC 1013 *IT Principles and Practices*. **Cisco Network Fundamentals** is the first of the four courses leading to the Cisco Certified Network Associate (CCNA) designation. CCNA 1 introduces Cisco Networking Academy Program students to the networking field. The course focuses on network terminology and protocols, local-area networks (LANs), wide-area networks (WANs), Open System Interconnection (OSI) models, cabling, cabling tools, routers, router programming, Ethernet, Internet Protocol (IP) addressing, and network standards. In addition, instruction and training are provided in the proper care, maintenance, and use of networking software, tools, and equipment. This course requires a lab fee.

ISTC 1523 Routing Protocols and Concepts (Cisco® CCNA II) 3 credits 2 class, 2 lab hours F/S

Prerequisite: ISTC 1513 *Cisco Network Fundamentals*. Routing Protocols and Concepts is the second of four CCNA courses leading to the Cisco Certified Network Associate (CCNA) designation. CCNA 2 focuses on initial router configuration, Cisco IOS Software management, routing protocol configuration, TCP/IP, and access control lists (ACLs). Students will develop skills on how to configure a router, managing Cisco IOS Software, configuring routing protocol on routers, and set access lists to control access to routers. This course requires a lab fee.

ISTC 2123 Digital Graphics for the Web 3 credits 3 class hours S

Prerequisite: COMP 1113 *Computer Fundamentals*. Formerly Advanced CBT Multimedia, this course presents the concepts of color correcting, retouching and colorizing graphics, photos and images used for web design, digital photography, and animation using Adobe Photoshop. This course requires a lab fee.

ISTC 2143 JavaScript 3 credits 3 class hours F

Prerequisite: ISTC 1053 *Introduction to Web Page Design*. This course teaches the basic concepts of JavaScript programming within HTML/XHTML web pages. Students will learn to design client-side, platform-independent solutions using the most popular applications of Javascript.

ISTC 2173 Flash for the Web 3 credits 3 class hours F

Pre-requisite: ISTC 1053 *Introduction to Web Page Design*. This course presents basic to advanced features of Adobe Flash, a vector graphics program that supports object interaction, layering, shape tweened animation, and motion tweened animation. Students will learn how to create animations, import artwork, manipulate text, and publish a Flash movie. This course requires a lab fee.

ISTC 2183 Advanced Web Site Design 3 credits 3 class hours S

Prerequisite: ISTC 2266 *CIW Site Design*. This course presents basic to advanced features of Adobe Fireworks, a vector graphics program for creating dynamic and interactive content for the web. Students will create vector graphics, transform vector images and effects; import and modify bitmap images; merge text with graphics; optimize photographic images and graphics; and create hotspots and rollovers. Ultimately, the student will create a complete web site using Dreamweaver and Fireworks. Good typography and layout skills will be stressed. This course requires a lab fee.

- ISTC 2266 CIW Site Design and Methodology 6 credits 6 class hours F**
Prerequisite: ISTC 1323 Networking Foundations. Using theory, design principles, and application, this course teaches students to construct and manage web sites in preparation for Certified Internet Webmaster certification. Topics include design concepts, site development and management, basic technology concepts, HTM, HTML/XHTML editing programs, graphics software, JavaScript fundamentals, Dynamic HTML, XML, HTTP Servers, downloadables and plug-ins, Java Applets, databases, and standards organizations. This course requires a lab fee and a testing fee for the CIW Design certification exam.
- ISTC 2283 Dynamic Server Pages 3 credits 3 class hours S**
Prerequisite: ISTC 1053 Introduction to Web Page Design. Students will learn to design and deploy data-driven Web-based applications using one or several current technologies.
- ISTC 2323 CIW E-Commerce 3 credits 3 class hours S**
Prerequisite: ISTC 2266 CIW Site Design and Methodology. Part of the Certified Internet Webmaster course sequence, this course presents the basics of conducting business online and the technological issues associated with constructing an electronic-commerce Web site. Students will learn how to implement a genuine transaction-enabled Web site, including various strategies and solutions available for the administration of E-commerce sites and the integration of data into existing business infrastructure. Other topics include similarities and differences between traditional and electronic commerce, the role each participant plays, the technologies used to place orders and process payments, and the legal and security issues. This course requires a lab fee and a testing fee for the CIW E-commerce certification exam, which serves as the final exam.
- ISTC 2333 Introduction to E-Learning Design 3 credits, 3 class hours S**
Prerequisite: ISTC 2266 CIW Site Design and Methodology. E-learning is the unifying term to describe the fields of online learning, web-based training, and technology-delivered instruction. In this course, students will use various technologies to design short tutorials for web delivery. Using several different technologies, students will construct tutorials and/or instructional web-based presentations.
- ISTC 2563 LAN Switching and Wireless (Cisco® CCNA 3) 3 credits 2 class, 2 lab hours F/S**
Prerequisite: ISTC 1523 Routing Protocols and Concepts. LAN Switching and Wireless is the third of four courses leading to the Cisco Certified Network Associate (CCNA) designation. The course focuses on command-line interface configuration of switches, Ethernet switching, Virtual LANs (VLANs), Spanning Tree Protocol (STP), and VLAN Trunking Protocol (VTP). Particular emphasis is given to students being able to demonstrate the ability to apply learning from CCNA 1 and 2 to a network and to be able to explain how/ why a particular strategy is employed. This course requires a lab fee.
- ISTC 2573 Accessing the WAN (Cisco® CCNA 4) 3 credits 2 class, 2 lab hours F/S**
Prerequisite: ISTC 2563 LAN Switching and Wireless. Accessing the WAN is the last of four courses leading to Cisco Certified Network Associate (CCNA) designation. The course focuses on advanced IP addressing techniques (Network Address Translation [NAT], Port Address Translation [PAT], and DHCP), WAN technology and terminology, PPP, ISDN, DDR, Frame Relay, network management, and introduction to optical networking. Emphasis is given to students being able to demonstrate the ability to apply knowledge from CCNA 1-CCNA 3 to a network and to be able to explain how and why a particular strategy is employed. Students will also be prepared to take the CCNA Exam. This course requires a lab fee.
- ISTC 2613 Fundamentals of UNIX 3 credits 3 class hours S**
Prerequisite: ISTC 1013 IT Principles and Practices. This course introduces the basic concepts of UNIX fundamentals administration and certification and provides an in-depth discussion of powerful UNIX command-line utilities and the graphical Common Desktop Environment.

ISTC 2623 UNIX System Administration I 3 credits 3 class hours F/S

Prerequisites: ISTC 2613 *Fundamentals of UNIX*. UNIX System Administration I training provide students with the knowledge and skills to perform essential system administration task in the Solaris Operating System, including standalone installation, file system management, backup procedures, process control, user administration, and device management. There are six main topics covered: System Access & Security, Process & Print Management, Device & Disk Management, file System Management, Boot Management, and Software Installation & Management.

ISTC 2633 UNIX System Administration II 3 credits 3 class hours F/S

Prerequisites: ISTC 2623 *UNIX System Administration I*. This course provides students with the skills necessary to administer Sun systems running Solaris in a network environment. Students will learn how to maintain Sun systems, configure and troubleshoot the Network Files System (NFS) and configure the Network Information Service (NISTC) environment. Students will also learn how to install software for a server, how to add devices, how to configure the client server environment, and how to add terminals.

ISTC 2724 Building Scalable Internetworks (Cisco® CCNP 1)**4 credits 2 class, 4 lab hours F/S**

Prerequisite: CCNA Certification or completion of CCNA Academy Program. Building Scalable Internetworks is the first of four courses leading to the Cisco Certified Network Professional (CCNP) designation. CCNP 1 introduces Cisco Networking Academy Program students to scaling IP networks. Students learn to use VLSM, private addressing, and NAT optimize IP address utilization. The majority of the course content related to learning how to implement the RIPv2, EIGRP, OSPF, IS-IS, and BGP routing protocols. In addition, the course details the important techniques used for route filtering and route redistribution. This course requires a lab fee.

ISTC 2734 Building Cisco Multilayer Switched Networks (Cisco® CCNP 2)**4 credits 2 class, 4 lab hours F/S**

Prerequisite: ISTC 2724 *Building Scalable Internetworks*. Building Cisco Multilayer Switched Networks is the second of four courses leading to the Cisco Certified Network Professional (CCNP) designation. CCNP 2 introduces student to the implementation of Cisco routers in WAN applications. The course focuses on the selection and implementation of the appropriate Cisco IOS services required to build intranet remote access links. Students will develop skills with the specific Accessing the WAN of analog dialup, ISDN BRI and PRI, Frame Relay, broadband, and VPN. This hands-on, lab-oriented course stresses the design, implementation, operation, and level 1 troubleshooting of common WAN connectivity options. This course requires a lab fee.

ISTC 2754 Implementing Secure Converged Wide Area Networks (Cisco® CCNP 3)**4 credits 2 class, 4 lab hours F/S**

Prerequisite: ISTC 2734 *Building Cisco Multilayer Switched Networks*. Implementing Secure Converged Wide Area Networks is the third of four courses leading to the Cisco Certified Network Professional (CCNP) designation. CCNP 3 introduces students to the deployment of the state-of-the-art campus LANs. The course focuses on the selection and implementation of the appropriate Cisco IOS services to build reliable scalable multilayer-switched LANs. Students will develop skills with VLANs, VTP, STP, inter-VLAN routing, multilayer switching, redundancy, Cisco AVVID solutions, QoS issues, campus LAN security, and emerging transparent LAN services. This hands-on, lab-oriented course stresses the design, implementation, operation, and troubleshooting of switched and routed environments. This course requires a lab fee.

ISTC 2774 Optimizing Converged Cisco Networks (Cisco® VII CCNP 4)**4 credits 2 class, 4 lab hours F/S**

Prerequisite: ISTC 2754 *Implementing Secure Converged Wide Area Networks*. Optimizing Converged Cisco Networks is the last of four courses leading to the Cisco Certified Network Professional (CCNP) certification. Students must have a working knowledge of scalable networks, remote access networks, and

multilayer switched networks prior to enrolling. CCNP 4 focuses on troubleshooting network problems, including documenting and baselining a network, troubleshooting methodologies and tools, and Layers 1 to 7 troubleshooting. This course requires a lab fee.

ISTC 2983 Internship

3 credits

F/S

Prerequisite: 2.0 GPA or higher and submission of an approved Internship Project Application by the date listed in the Academic Calendar prior to the semester of intended enrollment. Registered students must be in their final semester of enrollment. A faculty member serves as facilitator to help students develop a formal internship plan which documents learning objectives and course expectations. Internship objectives vary by degree program option, but all require students to apply general education and technical knowledge and skills in an actual work environment. Students must adhere to the policies and procedures of the industry or business in which they are placed, as well as to those of the College. Students are expected to provide a written and oral presentation at the conclusion of the course. The MSCC faculty facilitator assigns the final course grade based upon the student's timeliness in meeting internship objectives, his/her application of technical skills, the demonstration of general education outcomes defined for program graduates, and on feedback from the business/industry site supervisor.

Internship assignments will be made within the first two weeks of the semester, with actual work time requiring a minimum of 60 hours spanning 9 to 10 weeks. Students should not begin an internship experience prior to receiving the necessary prior approvals from the project facilitator and appropriate dean. Successful completion of this course requires a grade of C or better.

ISTC 2993 Capstone Learning Experience

3 credits

F/S

Prerequisite: 2.0 GPA or higher and submission of an approved Capstone Learning Project Application by the date listed in the Academic Calendar prior to the semester of intended enrollment. Registered students must be in their final semester of enrollment. Students, with the assistance of a faculty facilitator, choose a project, identify project stakeholders, and develop and execute a formal project plan. Students maintain a journal which documents goals, progress, and barriers encountered. Capstone project assignments will be made within the first two weeks of the semester, with actual work time spanning 9 to 10 weeks. Most projects include an oral and/or written presentation at the conclusion of the semester. The MSCC faculty facilitator assigns the final course grade based upon the student's timeliness in meeting internship objectives, his/her application of technical skills, the demonstration of general education outcomes defined for program graduates, and on feedback from the project stakeholders.

Literature

See Communications and Literature, page 156

Machining

Required placement test scores or successful completion of DRDG 1023 Developmental Reading and DENG 1053 Developmental English is a prerequisite for all courses unless otherwise noted. Certificate of Proficiency students without COMPASS scores may substitute the following: Key Train Level 4 or WorkKeys Level 3 in Reading for Information (RI), Applied Mathematics (AM) and Locating Information (LI. Manufacturing classes minimize the lecture component to engage students in intensive hands-on learning activities relating theory to practical hands-on applications involving skills development, critical thinking, and application of theory.

MACH 1003 Introduction to Blueprint Reading

3 credit

4 class hours

F

Prerequisite: MANF 1012 Shop Essentials or 75% or better on Shop Essentials Assessment. This course introduces the careful interpretation, use, and analysis of numbers and drawings used to create and maintain efficient manufacturing processes. Students will solve fraction and decimal problems, perform metric and inch conversions, apply blueprint information to machining tasks, and perform measuring techniques for machining tasks using the scale, calipers and micrometer. Students must demonstrate competency in core course objectives through practical applications. This course requires a lab fee.

MACH 1023 Introduction to Metallurgy **3 credits** **4 class hours** **F**
Prerequisites: MACH 1003 Introduction to Blueprint Reading or 75% or better on Blueprint Reading assessment. This course introduces the appropriate use of metals and composite materials used in manufacturing, including how to evaluate their properties and how manufacturing changes those properties. Students must demonstrate competency in core course objectives through practical applications. This course requires a lab fee.

MACH 1063 Inspection & Testing **3 credits** **4 class hours** **S**
Prerequisites: MACH 1023 Introduction to Metallurgy or 75% or better on Machine Attendant Module 1 assessment. This course introduces the fundamental methods and instruments used to effectively inspect parts in the shop. Students will use the caliper, micrometer, and CMM to perform calibration and more advanced inspection methods. Students must demonstrate competency in core course objectives through practical applications. This course requires a lab fee.

MACH 1083 Introduction to Manual Machining **3 credits** **4 class hours** **S**
Prerequisites: MACH 1063 Inspection & Testing or 75% or better on Inspection & Testing assessment. This course introduces students to the care and operation of basic machine tools measuring instruments, and shop safety procedures. Students learn the use of hand tools, drills and lathe cutting tools; use tapers; and study the methods of machining them. Shop projects are designed to provide practice in turning, knurling, threading, and other operations on the lathe, in setting up and using a vertical milling machine and milling cutters, and in drilling procedures. Students must demonstrate competency in core course objectives through practical applications. This course requires a lab fee.

MACH 1103 Intro CNC Machining **3 credits** **4 class hours** **S**
Prerequisite: MACH1083 Machining Fundamentals or 75% or better on equivalent assessment. This course introduces two and three axis programming applications in Computer Numerical Control machining. Students learn the terminology of coordinates, cutter paths, angle cutting, and linear and circular interpolation. Students learn how to design a part, write a CNC program to produce the part, how complete a machine setup to run a part, and how to manufacture a part using both a CNC Mill and Lathe. The safe operation of industrial machines, tools and equipment is emphasized. Students must demonstrate competency in core course objectives through practical applications.

MACH 1123 Statistics for Machining I **3 credits** **4 class hours** **F**
Prerequisites: MACH-1103 Introduction to CNC Machining or 75% or better on Machine Attendant assessment. This course introduces the concepts of statistics and algebra as they apply to shop drawings with special attention to the properties of lines and angles, various types of triangles, as well as basic circle and polygon geometry. Students must demonstrate competency in core course objectives through practical applications. This course requires a lab fee.

MACH 1143 Intermediate Blueprint Reading **3 credits** **4 class hours** **F**
Prerequisites: MACH 1123 Statistics for Machining I or 75% or better on Statistics for Machining I assessment. This course provides an overview of common features found in prints and describes how to properly inspect them. Students will identify shop terminology that commonly appears in prints, learn the relationship between prints and inspection, and identify information in a print relating to section views, including angled features, common types of hole features, radiuses, surface finishes, and common methods for threads. Students must demonstrate competency in core course objectives through practical applications. This course requires a lab fee.

MACH 1163 CNC Safety and Proper Functions **3 credits** **4 class hours** **F**
Prerequisites: MACH 1143 Advanced Blueprint Reading or 75% or better on CNC Safety & Proper Functions assessment. This course introduces the principles of basic machine guarding, to the components and roles of typical jigs and fixtures, and to hazardous machine components, pinch points, motions, and actions. Students will learn how to identify the safety hazards associated with cutting operations, handling cutting tools, changing tools and the precautions to avoid injury. Students must demonstrate competency in core course objectives through practical applications. This course requires a lab fee.

MACH 1183 Metalworking Theory I **3 credits** **4 class hours** **S**
Prerequisites: MACH 1163 CNC Safety & Proper Functions or 75% or better on Metalworking Theory I assessment. This course introduces traditional machining processes such as metal cutting and grinding, as well as various nontraditional methods of machining. Topics include the fundamentals of chip creation; the main types of sawing, saw blade types and materials; the common components and operations of the screw machine; and common screw machine designs. Students must demonstrate competency in core course objectives through practical applications. This course requires a lab fee.

Manufacturing

Required placement test scores or successful completion of DRDG 1023 Developmental Reading and DENG 1053 Developmental English is a prerequisite for all courses unless otherwise noted. Certificate of Proficiency students without COMPASS scores may substitute the following: Key Train Level 4 or Workkeys Level 3 in Reading for Information (RI), and Locating Information (LI). Manufacturing classes minimize the lecture component to engage students in intensive hands-on learning activities relating theory to practical hands-on applications involving skills development, critical thinking, and application of theory.

MANF 1012 Shop Essentials I **2 credits** **3 class hours** **F/S**
Prerequisite: DMTH 1073 Elementary Algebra with a grade of "C" or better or equivalent COMPASS placement scores or Key Train Level 4 WorkKeys Level 3 in Applied Mathematics. This course introduces the student to basic safety, math, measurements, and basic blueprint reading common to various industrial trades such as machining, welding, and multi-skilled maintenance. Students must complete six lab exercises where they demonstrate competency in core course objectives through practical applications. This course requires a lab fee.

MANF 1023 Design for Manufacturing **3 credits** **4 class hours** **F**
This course expands on the introductory manufacturing course and introduces students to basic design concepts, computer skills, and drawing skills used in product and process design within the field of manufacturing. Additionally, the course helps students develop a number of interpersonal skills and competencies necessary for a sustained career in manufacturing.

MANF 1033 Manufacturing Production Processes **3 credits** **4 class hours** **F**
This course provides students with hands-on learning experiences with the basic tools, equipment, and operations of manufacturing industries. Emphasis is given to the relationship between a manufacturing need, a design, materials, and processes, as well as to the tools and equipment to execute the product. During this course, students utilize many of the basic manufacturing processes to produce primary and secondary materials for manufacturing.

MANF 1043 Manufacturing Power & Equipment Systems **3 credits** **4 class hours** **S**
This course introduces students to manufacturing power systems and to the use of the advanced tools of manufacturing production. Students plan, design, implement, use, and troubleshoot manufacturing power systems, equipment systems, and control systems.

MANF 1053 Manufacturing Materials **3 credits** **4 class hours** **S**
This course introduces students to manufacturing materials, materials testing, and materials science. Students engage in primary and secondary processing and manufacturing projects and conduct experiments on various manufacturing materials.

MANF 1073 Manufacturing Equipment Maintenance & Operation **3 credits** **4 class hours** **S**
Prerequisite: MANF 1043 Manufacturing Power & Equipment Systems. This course provides students with a comprehensive knowledge of manufacturing equipment safety, maintenance and operations procedures, control systems, as well as teamwork, ethics, and leadership abilities expected in the field.

MANF 1083 Manufacturing, Engineering, Design & Problem Solving**3 credits 4 class hours S**

Prerequisite: MANF 1023 *Design for Manufacturing*. This course repeats previous safety training and introduces new concepts related to engineering and design and problem solving within the context of previous learning. Students solve a given manufacturing challenge that requires the use of advanced manufacturing technology systems, design skills, communication skills, and a thorough understanding of manufacturing materials, processes, and techniques.

MANF 1303 Industrial Safety**3 credits 4 class hours S/F**

Prerequisite: None. This course covers all of the typical topics required by OSHA for the OSHA 10 Hour Industrial Safety Card. Students must successfully complete six lab exercises where they demonstrate competency in core course objectives through practical applications. This course requires a lab fee.

MANF 2012 Basic Hydraulics & Pneumatics**2 credits 3 class hours F**

Prerequisites: DMTH 1083 *Intermediate Algebra with a grade of "C" or better or equivalent placement scores*. This course introduces the student to fluid power principles and components and presents basic circuit design through the use of symbols and schematic diagrams to build a foundation for career work in fluid power technology. The safe operation of fluid power machines, tools and equipment is emphasized. Students must complete six lab exercises where they demonstrate competency in core course objectives through practical applications. This course requires a lab fee.

MANF 2023 Mechanical Drives & Bearings**3 credits 4 class hours S**

Prerequisites: DMTH 1083 *Intermediate Algebra*. This course focuses on the practical use of machines and mechanical components by manufacturing maintenance mechanics and technicians. Topics include power belting, pulleys and drive arrangements, chain drives, shafting; dynamic shaft seals, disc and shoe brakes, sliding, ball, and roller bearings, lubricants, couplings, clutches, gear drives, speed reducers, and conveyor drive systems. The safe operation of industrial machines, tools and equipment is emphasized.

MANF 2033 Applied Electricity & Electronics**3 credits 4 class hours S**

Prerequisite: DMTH 1083 *Intermediate Algebra with a grade of "C" or better or equivalent placement score*. This course introduces the student to electrical laws and theories pertaining to DC and AC circuits which apply to a broad range of manufacturing disciplines. Emphasis is given to the use of standard electrical tests, electrical equipment, and troubleshooting procedures. Students must complete six lab exercises where they demonstrate competency in core course objectives through practical applications. This course requires a lab fee.

MANF 2044 Programmable Logic Controllers**4 credits 5 class hours S**

Prerequisite: MANF 2033 *Applied Electricity and Electronics*. This course introduces students to entry-level to intermediate-level PLC programming and applications. Students will learn to identify components of a PLC system, do a simple setup and configuration of a PLC, understand and make minor modifications to a PLC program, design and build a process control system using a PLC to control the process, and design a simple automated process. Students must complete six lab exercises where they demonstrate competency in core course objectives through practical applications. This course requires a lab fee.

MANF 2053 Blueprint Reading & GD&T**3 credits 4 class hours (tba)**

Prerequisite: MANF 1023 *Design for Manufacturing*. This course presents the basic skills of blueprint reading, fraction/decimal/metric and inch conversions, the use of measuring devices, and the basic upper and lower control limits of geometric dimensioning as they apply to machining tasks. Upon completion the student will have the ability to interpret drawings and use the basic instruments to determine acceptance criteria specified on parts drawings.

MANF 2103 Process Controls for Integrated Systems 3 credits 4 class hours (tba)

Prerequisites: DMTH 1083 *Intermediate Algebra* and MANF 1043 *Manufacturing Power and Equipment Systems*. This course presents the application of electrical motor and mechanical devices in industrial control circuits with emphasis given to the principles of electrical safety, calculations and diagrams; power generating equipment, electro-mechanical control devices, preventive maintenance and systematic troubleshooting of electrical circuits. Students will be involved in completing a team project where acquired skills will be utilized.

MANF 2113 Advanced Programmable Logic Controllers 3 credits 4 class hours (tba)

Prerequisite: MANF 2043 *Programmable Logic Controllers*. This course emphasizes programmable logic controllers and the local area network as they apply to the field of industrial controls. Students learn the principles and applications of control systems in achieving automation within a production system. Systems included in the course are stepper motors, programmable logic controllers, microprocessor, computers and feedback systems. The safe operation of industrial PLCs, testing equipment, and hand tools is emphasized.

MANF 2133 Technical Graphics & CAD Fundamentals 3 credits 4 class hours (tba)

Prerequisite: MANF 1023 *Design for Manufacturing*. This course introduces students to the detailing skills commonly used by drafting technicians and to the features and basic usage of computer-aided design (CAD) software systems. Areas of study include lettering, sketching, proper use of equipment, and geometric constructions with emphasis on orthographic drawings that are dimensioned and noted to ANSI standards.

MANF 2143 Computer Aided Drafting and Design 3 credits 4 class hours (tba)

Prerequisite: MANF 2133 *Technical Graphics & CAD Fundamentals*. This course continues the study and application of Computer Aided Design (CAD) application software for mechanical drawing. Topics include CAD concepts, drawing standards, drawing with precision, editing, view control, measurement, text and annotations, dimensioning, drawing layout and plotting. Emphasis is placed on the application of standards to graphical communications and the development of hands-on skills. Safety procedures and practices are emphasized.

MANF 2213 Lean Manufacturing 3 credits 4 class hours (tbd)

Prerequisite: None. This course teaches students the key components of a quality organization, the relationship between processes and products through different roles in a manufacturing company and describes the basic principles of lean manufacturing, SPC, 5S, cellular manufacturing, including the characteristics of cells and pull systems and compares them to traditional manufacturing approaches. Students must successfully demonstrate competency in core course objectives through practical applications. This course requires a lab fee.

MANF 2983 Internship 3 credits F/S

Prerequisite: 2.0 GPA or higher and approval of an Internship Project Application submitted by the date listed in the Academic Calendar prior to the semester of intended enrollment. Registered students must be in their final semester of enrollment. A faculty member serves as facilitator to help students develop a formal internship plan which documents learning objectives and course expectations. Internship objectives vary by degree program option, but all require students to apply general education and technical knowledge and skills in an actual work environment. Students must adhere to the policies and procedures of the industry or business in which they are placed, as well as to those of the College. Students are expected to provide a written and oral presentation at the conclusion of the course. The MSCC faculty facilitator assigns the final course grade based upon the student's timeliness in meeting internship objectives, his/her application of technical skills, the demonstration of general education outcomes defined for program graduates, and on feedback from the business/industry site supervisor. Internship assignments will be made within the first two weeks of the semester, with actual work time requiring a minimum of 60 hours spanning 9 to 10 weeks. Students should not begin an internship experience prior to receiving the necessary prior approvals from the project facilitator and appropriate dean. Successful completion of this course requires a grade of C or better.

MANF 2993 Capstone Learning Experience 3 credits F/S

Prerequisite: 2.0 GPA or higher and approval of a Capstone Learning Project Application submitted by the date listed in the Academic Calendar prior to the semester of intended enrollment. Registered students must be in their final semester of enrollment. Students, with the assistance of a faculty facilitator, choose a project, identify project stakeholders, and develop and execute a formal project plan. Students maintain a journal which documents goals, progress, and barriers encountered. Capstone project assignments will be made within the first two weeks of the semester, with actual work time spanning 9 to 10 weeks. Most projects include an oral and/or written presentation at the conclusion of the semester. The MSCC faculty facilitator assigns the final course grade based upon the student's timeliness in meeting internship objectives, his/her application of technical skills, the demonstration of general education outcomes defined for program graduates, and on feedback from the project stakeholders.

Mathematics

Required placement scores or successful completion of DRNG 1023 are prerequisites for the following classes.

MATH 1113 College Algebra 3 credits 3 class hours F/S

Prerequisite: DMTH 1083 Intermediate Algebra with a grade of "C" or better or ACT math score of 19 or equivalent COMPASS or ASSET score. Course content includes functions; higher-degree, rational, logarithmic, and exponential equations; systems of equations, matrices, and graphs. Word problems are integrated within various topics. This course incorporates the use of a graphing calculator.

MATH 1133 Math for Liberal Arts 3 credits 3 class hours S

Prerequisite: DMTH 1083 Intermediate Algebra with a grade of "C" or better or ACT math score of 19 or equivalent COMPASS or ASSET score. This course is designed for the Liberal Arts majors. Topics include reasoning, set theory, logic, functions and linear programming, counting methods and probability theory, statistics, graph theory and mathematical modeling. Real-word problems are integrated within various topics. This course incorporates the use of a graphing calculator.

MATH 2113 Math for Teachers I 3 credits 3 class hours F

Prerequisite: MATH 1113 College Algebra with a grade of "C" or better. Course content includes logic and mathematical reasoning, problem-solving, sets, functions, and number theory. Emphasis is placed on instructional methodology to support student learning.

MATH 2115 Calculus I 5 credits 5 class hours S

Prerequisite: Completion of Pre-calculus with a grade of "C" or better in high school or successful completion of trigonometry in high school and of MATH 1113 College Algebra with a grade of "C" or better and, or ACT math score of 24 or better. Course content includes limits, derivatives, implicit differentiation, definite and indefinite integrals, substitution, and applications of the derivative and integral. This course incorporates the use of a graphing calculator.

MATH 2123 Math for Teachers II 3 credits 3 class hours S

Prerequisite: Completion of MATH 2113 Math for Teachers I with a grade of "C" or better. A continuation of MATH 2113, course content includes exponents, decimals, probability, statistics, geometry, measurement, and applications of mathematics. Emphasis is placed on instructional methodology to support student learning. This course uses a geometry software package and requires a lab fee.

MATH 2124 Calculus II 4 credits 4 class hours S

Prerequisite: A grade of C or better in MATH 2115 Calculus I or its equivalent. A continuation of MATH 2115, this course is intended for students who wish to major in mathematics, a natural science, engineering and related technology, or in secondary mathematics education. Course content includes integration with

several techniques; applications of integration; sequences and infinite series; and applying calculus concepts to polar coordinates, parametric equations, and vectors. This course incorporates the use of a graphing calculator and data analysis software.

MATH 2303 Statistical Methods for Business **3 credits** **3 class hours** **S**
Prerequisite: MATH 1113 College Algebra with a grade of "C" or better. Course content includes probability, binomial and normal distributions, averages, variations, sampling, estimation, hypothesis testing, and regression analysis. Emphasis is placed on methods of collecting, organizing, and analyzing data. Business applications are integrated in various topics. This course incorporates the use of a graphing calculator.

MATH 2343 Business Calculus **3 credits** **3 class hours** **F**
Prerequisite: MATH 1113 College Algebra with a grade of "C" or better. This course is intended for Associate of Arts students planning to enter a baccalaureate program in business. Content includes a review of major functions and their applications, graphing, continuity, limits, derivatives, applications of the derivative for optimization and curve sketching, indefinite and definite integrals, applications of the definite integral for real-world problems, and topics from probability. This course incorporates the use of a graphing calculator.

Medical Programs

Required placement test scores or successful completion of DRDG 1023 Developmental Reading and DENG 1053 Developmental English is a prerequisite for all courses unless otherwise noted.

CNAS 1014 Certified Nursing Assistant **4 credits** **3 class 3 lab hours** **F/S/Su**
 This course presents the classroom and clinical instruction approved by the State of Arkansas for individuals to become Long Term Care Certified Nursing Assistants. The first several weeks will focus on classroom and lab training including communication skills, infection prevention and control, safety/emergency procedures/residents' rights, personal care, basic nursing skills, and basic restorative services. The final weeks will allow the students to practice their classroom and lab skills under instructor supervision in long-term care facilities. **Students must make a minimum course grade of 70% to be eligible to take the state certification exam.** Students enrolling in this course are required to pay a lab fee, to purchase student liability insurance and to pay a fee for their state certification exam.

EMER 1007 Emergency Medical Technician-Basic (EMT-B) **7 credits, 4 class hours, 4 lab hours, 120 field/clinical hours** **S**
Prerequisite: Students must be 18 or older and hold high school diploma or GED to enroll. Students without a science background are strongly encouraged to enroll in MEDP 1043 Anatomy & Physiology or BIOL 1214 prior to taking EMER 1007. This 1 course sequentially presents knowledge and skills required by the U.S. Department of Transportation (U.S. D.O.T.) to become a certified EMT. Course content follows the EMT-Basic National Standard Curriculum as set forth by U.S. D.O.T. The student will develop EMT-B skills and competencies that will enable successful program completers to take the National Registry examination for EMT-B certification. Students must meet all requirements as set forth by the Arkansas Department of Health Guidelines including, but not limited to, a practicum in a hospital emergency room, a practicum as an ambulance third rider, and special auto extrication training. **Students must make a minimum course grade of 70% to be eligible to take the National Registry examination.** Students enrolling in this course are required to pay a lab fee and to purchase student liability insurance and to pay for a criminal records background check. Licensure may be denied to applicants who have been convicted of certain designated crimes.

MDAS 1003 Medical Assisting - Administrative Procedures **3 credits** **3 class hours** **F**
 This course is designed to acquaint the student with the administrative requirements of the medical facility. The course will provide instruction in the following: medical office software program, medical receptionist skills, HIPAA Regulations, human relations, bookkeeping methods, and management techniques.

- MDAS 1033 Medical Law and Ethics** **3 credits** **3 class hours** **F**
 This course is designed to give Medical Assisting students and other healthcare practitioner's knowledge of law and ethics as they pertain to medicine. The course will provide a thorough understanding of medical assistants' medico-legal responsibilities and relationships with physicians/employers and patients. Emphasis will be placed on the practical application of the principles of medical law and ethics.
- MDAS 2013 Medical Office Medications** **3 credits** **3 class hours** **S**
Corequisite: MDAS 2043 Medical Assisting Laboratory Procedures. This course provides Medical Assisting students with a basic understanding of drug therapy, including the legal, technical, ethical and moral aspects of handling and administering medications. Students will practice administration of oral parenteral medication. Nutritional supplements and diet supplementations related to therapy as prescribed by the physician will be covered. Intermediate algebra level is needed in the calculation of drug dosages.
- MDAS 1073 Medical Assisting - Clinical Procedures** **3 credits** **3 class hours** **F**
Prerequisite: MDAS 1003 Medical Assisting Administrative Procedures. This course presents the duties and responsibilities expected in the clinical area of a medical facility. Students will be instructed in the following: assisting the doctor, assessing vital signs, sterilization procedures, minor surgery, medical specialties, physiotherapy and diet therapy.
- MDAS 1093 Basic Electrocardiography** **3 credits** **3 class hours** **F/S**
Prerequisite: MEDP 1043 Anatomy & Physiology. Students will gain hands-on experience using an electrocardiograph machine after learning the circulatory, conduction and mechanical systems of the heart, Einthoven's Triangle, cardiac depolarization, repolarization and terminology. Drugs and their effect on the heart will be discussed. The student will learn to measure the cardiac complex, recognize and eliminate artifacts on a graph and identify basic arrhythmias of the heart as recorded on the EKG. Holter Monitoring and the principles of stress testing will also be presented.
- MDAS 2004 Medical Billing & Encoding** **4 credits** **4 class hours** **F/S**
Prerequisite: MEDP 1113 Medical Terminology. This course presents the fundamentals of medical office insurance diagnosis and procedure coding as well as skills required to produce insurance forms in a timely manner to third party payers. Students will learn to reconcile payments and rejections, process inquiry forms and understand the Diagnostic Related Groupings and how they relate to inpatient regulations. Using computer-based assignments, students apply their knowledge in medical terminology, insurance coding and billing and word processing skills by executing accurate claim submissions for reimbursement, utilizing a billing software program.
- MDAS 1053 Basic X-ray and Spirometry** **3 credits** **3 class hours** **F/S**
Prerequisite: MEDP 1043 Anatomy and Physiology. This course focuses on the medical assistant's role in preparation of the patient for the diagnostic procedures of radiography and spirometry. Emphasis is given to basic radiological positioning and techniques. This course will include discussion of equipment, as well as safety precautions and protection.
- MDAS 2043 Medical Assisting - Laboratory Procedures** **3 credits** **3 class hours** **F/S**
Prerequisite: MDAS 1003 Medical Assisting Administrative Procedures. This course provides medical assisting students practical experience in the collection and handling of various specimens and in the performance and interpretation of tests done in the physician's office. Tests include Gram staining, initial culture taking, basic microbe identification, routine urinalysis, hematology, and other basic lab tests. Emphasis will be placed on patient contact orientation, contamination of specimens, patient education prior to testing, and explanation of results.

- MDAS 2981 Medical Assisting Seminar** 1 credit 1 class hour S
Corequisite: MDAS 2996 *Medical Assisting Externship I*. This course reviews the entire Medical Assisting program. Emphasis is placed on general topics, administrative and clinical duties, human relations and professionalism. Recognition of the importance of employability skills after graduation is included.
- MDAS 2996 Medical Assisting Externship** 6 credits 180 clinical hours S
Prerequisite: Completion of all coursework except MDAS 2981 *Medical Assisting Seminar* with a grade of B or better and permission of the Program Chair. This course covers a review and rotation sequence of practical experience in offices of qualified physicians and/or accredited hospitals and clinics. Skills acquired during prior coursework will be applied during the externship under the supervision of College faculty and clinical staff. In addition to medical office practice, human relation skills will be stressed in the course work. Students will have to complete 180 clinical hours, as well as take the National Certification Exam.
- MEDP 1013 Introduction to Medical Professions I** 3 credits 3 class hours F
Available only to high school students enrolled in the Technical Center, this survey course introduces students to a variety of health care careers and helps them learn the basic information about outstanding medical history and events, health care systems, human growth and development, nutrition and health, processes of disease, and medical ethics. Emphasis is given to the development of basic competencies in medical math, medical terminology, communication, and the skills and competencies associated with basic information and personal qualities needed for employment.
- MEDP 1033 Medical Terminology** 3 credits 3 class hours F
Prerequisite: Successful completion of *English Composition I* or equivalent placement test scores. This course is designed to develop the ability to recognize, understand and use medical terminology. It is intended for persons studying in the health occupations fields—students who plan to be nurses, paramedics, surgical technologists, medical secretaries, medical records transcriptionists, laboratory technicians, medical assistants, etc.—and for graduates presently working in the paramedical fields who need to review or increase their vocabularies.
- MEDP 1043 Anatomy and Physiology** 3 credits 3 class hours F
This course, a foundation for understanding the principles of maintaining positive health and understanding deviations from the normal, includes anatomy and physiology of the human body in all its systems. MEDP 1043 does not transfer.
- MEDP 1044 Anatomy and Physiology** 4 credits 4 class hours F
This course for Technical Center students only is a foundation for understanding the principles of maintaining positive health and understanding deviations from the normal, includes anatomy and physiology of the human body in all its systems. MEDP 1044 does not transfer.
- MEDP 1073 Pharmacology** 3 credits 3 class hours S
Prerequisites: MEDP 1033 *Medical Terminology* and MEDP 1043 *Anatomy and Physiology*. Drawing upon core concepts of anatomy, physiology, and pathology, this course provides an introduction to major drug classifications, usage, delivery, administration, interactions, and contraindications. An introduction to dosage conversions and equivalents is included, along with commonly used pharmaceutical abbreviations.
- MEDP 1083 Medical Procedures** 3 credits 3 class hours S
Available only to high school students enrolled in the Technical Center, this course allows students to develop specific skills needed in the health professions. Emphasis is given to the development of competencies related to the following areas: safety, infection control, vital signs, CPR and first aid, medical math, abbreviations, and charting.

MEDP 1113 Introduction to Medical Professions II **3 credits** **3 class hours** **S**
Prerequisite: MEDP 1013 *Introduction to Medical Professions I*. Available only to high school students enrolled in the Technical Center, this course is designed as an extension to the Introduction to Medical Professions core course. The course provides students with a general overview of the more crucial content areas of the Medical Professions Education program core courses. Areas covered are: medical terminology, medical math, human growth and development, processes of disease, and employability skills needed within the health care field.

MEDP 1113 Medical Transcription I **3 credits** **1 class, 4 lab hours** **S**
Prerequisite: MEDP 1073 *Pharmacology*. This course provides an overview to the professional medical transcription environment and an introduction to various forms and techniques which are used in health care reports. Emphasis is placed on the development of accuracy, speed, and medical knowledge for the transcription of letters, chart notes, history and physical examination reports, consultations, emergency room reports, and discharge summaries. The use of reference materials, editing and proofreading techniques, and a review of grammar and punctuation is also included.

MEDP 1123 Medical Transcription II **3 credits** **1 class, 4 lab hours** **S**
Prerequisite: MEDP 1113 *Medical Transcription I*. This course continues skills building begun in the prior course and emphasizes the transcription of original medical dictation, while incorporating advanced proofreading skills as well as increasing accuracy and speed in production.

PHLB 1016 Principles and Practice of Phlebotomy **6 credits**
Corequisites: MEDP 1033 *Medical Terminology* and MEDP 1043 *Anatomy & Physiology*. This course addresses the history of phlebotomy and procedural methods dealing with patients and hands on practice in the lab performing skin puncture and venipuncture, complications in blood collection procedures and specimen collections and transportation.

PHLB 1021 Phlebotomy Clinical Practice Seminar **1 credit**
Prerequisite: PHLB 1016 *Principles and Practice of Phlebotomy*. This course is an in-depth study and review of material covered PHLB 1016 and is designed to prepare students for the national certification exam. Students will select and present case studies. Recognition of the importance of employability skills after graduation is also included.

PHLB 1022 Phlebotomy Clinical Practice – Externship **2 credits**
Prerequisite: PHLB 1021 *Phlebotomy Clinical Practice Seminar*. This course is designed for the student to begin to use and apply concepts and technical skills learned in PHLB 1016 and PHLB 1011. It is a planned, unpaid and supervised externship in a healthcare organization with a preceptor.

Music

Required placement test scores or successful completion of DRDG 1023 Developmental Reading and DENG 1053 Developmental English is a prerequisite for all courses unless otherwise noted.

MUSC 1103 Music Appreciation **3 credits** **3 class hours** **F/S**
 Designed for the student who has little or no formal music training or experience, this course appeals to all students who are interested in acquiring an understanding and appreciation of the relationships between music and culture as well as of the development of society. Students learn to appreciate music through an introduction to the major composers and to analyze the relationships between music and culture.

MUSC 1101 Jazz Ensemble **1 credit** **2 class hours** **F/S**
 Students participate in a performing ensemble designed to study a wide variety of jazz music including swing, progressive, modern and rock styles. One or more performances/tours are scheduled each semester for which additional practice times may be required. *Enrollment is by audition and instructor approval only.* The course may be repeated for up to three credits.

MUSC 1111 Vocal Music **1 credit** **2 class hours** **F/S**

This course is designed to provide a comprehensive choral music education for experienced singers. Membership is by audition, and is comprised of students from various disciplines. The choir performs music from various style periods and genres several times throughout the year. The course may be repeated for up to three credits.

Philosophy

See Humanities, page 164

Phlebotomy

See Medical Programs, page 175

Physical Science

Required placement test scores or successful completion of DRDG 1023 Developmental Reading II and DENG 1053 Developmental English II is a prerequisite for all courses unless otherwise noted.

PSCI 1214 Physical Science **4 credits** **3 class, 2 lab hours** **F/S**

Prerequisite: DMTH 1083 Intermediate Algebra with a grade of “C” or better or appropriate placement test score. *Corequisite:* PSCI 1210 Physical Science Lab. This course is a “survey of science” which introduces students to the basic concepts and key ideas in Physics, Chemistry, and Geology. Topics covered in this course include measurements, precision and accuracy, principles and patterns of motion, heat and temperature, wave motion and sound, electricity and magnetism, atomic structure, elements and the periodic table, compounds and chemical change, chemical formulas and equation, the universe and the solar system, earth in space, the atmosphere and weather. This course requires a lab fee.

PSCI 1224 Earth Science **4 credits** **3 class, 2 lab hours** **F/S**

Prerequisite: DMTH 1083 Intermediate Algebra with a grade of “C” or better or appropriate placement test score. *Corequisite:* PSCI 1220 Earth Science Lab. This course is designed for non-science majors to foster understanding of basic geologic principles. Course content includes the scientific method; earth structure and processes; tectonics, earthquakes, volcanism, glacial formation; weathering, and erosion; atmosphere, climate, and weather; rocks, minerals, and fossils; and the oceans. This course requires a lab fee.

PSCI 1254 Physics I **4 credits** **3 class, 2 lab hours** **F**

Prerequisite: Grade of C or better in DMTH 1083 Intermediate Algebra or appropriate placement test scores. *Corequisite:* PSCI 1250 Physics Lab. This algebra-based college level physics course introduces the basic concepts of mechanics, including force and torque; one- and two-dimensional motion; linear and rotational motion; work, energy, and power; simple machines; fluids; and heat. Although this course is designed for both science and non-science majors, it is not recommended for physics or engineering majors. This course requires a lab fee.

Political Science

Required placement test scores or successful completion of DRDG 1023 Developmental Reading II and DENG 1053 Developmental English II is a prerequisite for all courses unless otherwise noted.

POLS 1143 American Government **3 credits** **3 class hours** **F/S**

Through the study of the framework of the U.S. Constitution, this course presents a study of basic principles of American government with emphasis placed on the organization, processes, and functions of the national government.

Psychology

Required placement test scores or successful completion of DRDG 1023 Developmental Reading II and DENG 1053 Developmental English II is a prerequisite for all courses unless otherwise noted.

PSYC 1403 Introduction to Psychology **3 credits** **3 class hours** **F/S**

Designed to introduce the basic concepts of psychology and applications of principles and theories as they relate to daily living and human behavior, this course includes biological, environmental, and hereditary influences on behavior; theories of personality, learning, and cognition; assessment of personality and intellectual ability; and causes of and treatments for psychological problems.

PSYC 2413 Human Development **3 credits** **3 class hours** **S**

Prerequisite: PSYC 1403 Intro to Psychology. This course in developmental psychology focuses on the way human beings change during the life cycle and emphasizes cognitive, social, physical, and emotional processes in infancy, early and middle childhood, adolescence, and adulthood.

Renewable Energy Technology

Required placement test scores or successful completion of DRDG 1023 Developmental Reading II and DENG 1053 Developmental English II is a prerequisite for all courses unless otherwise noted.

ENER 1013 Introduction to Renewable Energy **3 credits** **4 class hours** **F**

This course provides students with an overview of renewable energies, including biomass, geothermal, wind power, solar power, tidal power, nuclear power, fuel cells, and hydropower. Students will explore principles and concepts of energy consumption, production, and conversion as well as apply current and emerging renewable energy technologies (RET) through the completion of experiments and design projects. Topics include energy production, costs, consumption, conversion, and assessments as well as the social and cultural impact of renewable energies.

ENER 1033 Biofuels **3 credits** **4 class hours** **F**

This course provides students with a historical perspective and investigations into early applications of biofuels like biodiesel, ethanol, methanol, methane, and hydrogen. Emphasis is placed on the study of biochemical methods involved in the generation of ethanol, and other biofuels from feedstocks, animal fats, waste vegetable oil, and other waste products. Students will investigate the potential of different raw materials and plants as fuel sources, examine the process through which plant matter is converted into fuel, examine the environmental and social consequences of using various biofuels, and explore emerging and future alternative energy fuels derived from biomass like grass, wheat straw, fungi, and algae.

ENER 2003 Biomass and Feedstocks **3 credits** **4 class** **S**

Prerequisite: BIOL 1124 Plant Biology. The course includes a detailed study of the form, structure, function, and reproduction of plants and the production, handling, and maintenance of biomass in the alternative fuels industry. Emphasis is placed on the study of types of biomass annual crops, forestry byproducts, organic waste, landfill gas, etc.) economic costs, sustainability, waste products, and employment issues. Students will investigate photosynthesis, generate biomass gases, convert energy and mass from one form to another, examine the conditions that produce the highest conversion yields, discover the most efficient manners of producing biodiesel, and identify and conduct experiments with other potential catalysts.

ENER 2023 Technical Thinking & Problem Solving **3 credits** **4 class hours** **S**

Prerequisite: None. This course introduces the process of technical thinking and guides students to make appropriate, informed and effective decisions in a technical setting by developing their problem solving and troubleshooting abilities and analytical skills. Emphasis is placed on the completion of projects, activities, case studies, field assignments, and presentations by technicians from renewable energy industries.

ENER 2043 Bioprocess Practices **3 credits** **4 class hours** **S**
This course involves in-depth examination of the methods utilized in the production of biofuel throughout the plant manufacturing process. The laboratory provides a hands-on experience of producing and testing biofuel.

ENER 2983 Internship **3 credits** **S**
Prerequisite: 2.0 GPA or higher and approval of an approved Internship Project Application submitted by the date listed in the Academic Calendar prior to the semester of intended enrollment. Registered students must be in their final semester of enrollment. A faculty member serves as facilitator to help students develop a formal internship plan which documents learning objectives and course expectations. Internship objectives vary by degree program option, but all require students to apply general education and technical knowledge and skills in an actual work environment. Students must adhere to the policies and procedures of the industry or business in which they are placed, as well as to those of the College. Students are expected to provide a written and oral presentation at the conclusion of the course. The MSCC faculty facilitator assigns the final course grade based upon the student's timeliness in meeting internship objectives, his/her application of technical skills, the demonstration of general education outcomes defined for program graduates, and on feedback from the business/industry site supervisor. Internship assignments will be made within the first two weeks of the semester, with actual work time requiring a minimum of 60 hours spanning 9 to 10 weeks. Students should not begin an internship experience prior to receiving the necessary prior approvals from the project facilitator and appropriate dean. Successful completion of this course requires a grade of C or better.

ENER 2993 Capstone Learning Experience **3 credits** **S**
Prerequisite: 2.0 GPA or higher and approval of an approved Capstone Learning Project Application submitted by the date listed in the Academic Calendar prior to the semester of intended enrollment. Registered students must be in their final semester of enrollment. Students, with the assistance of a faculty facilitator, choose a project, identify project stakeholders, and develop and execute a formal project plan. Students maintain a journal which documents goals, progress, and barriers encountered. Capstone project assignments will be made within the first two weeks of the semester, with actual work time spanning 9 to 10 weeks. Most projects include an oral and/or written presentation at the conclusion of the semester. The MSCC faculty facilitator assigns the final course grade based upon the student's timeliness in meeting internship objectives, his/her application of technical skills, the demonstration of general education outcomes defined for program graduates, and on feedback from the project stakeholders.

Sociology

Required placement test scores or successful completion of DRDG 1023 Developmental Reading II and DENG 1053 Developmental English II is a prerequisite for all courses unless otherwise noted.

SOCI 1303 Introduction to Sociology **3 credits** **3 class hours** **F/S**
This introductory course provides an overview of the field of sociology and covers methods of sociological research, the organization of social life, social inequality, and social institutions. Specific topics include culture, socialization, social interaction, social structure, groups and organizations. Attention is also given to social stratification by age, gender, and ethnicity and to the social institutions of family, religion, government, economy, health, and education.

Transportation, Distribution, & Logistics

Required placement test scores or successful completion of DRDG 1023 Developmental Reading II and DENG 1053 Developmental English II is a prerequisite for all courses unless otherwise noted.

CDLT 1003 Commercial Vehicle Driving **3 credits** **F/S**
Prerequisites: Must pass CDL physical and drug screen. The objective of this course is to provide the individual with the basic knowledge and skills in preparation for an entry-level position as a commercial driver. This 160-hour course consists of both classroom and behind-the-wheel training conducted by RoadMaster, Inc., at the MSCC Commercial Driving Facility. New classes start weekly, contact RoadMaster directly at (870) 400-4090.

TRAN 1003 Introduction to Transportation, Distribution and Logistics**3 credits 4 class hours F**

This course provides students with an introduction to the complexities of the transportation, distribution, and logistics industries, including the history and development of transit, the relationships between the various modes of transportation (land, air, space, rail, water, and pipeline), the economy, society, and the environment. Students will complete numerous practical applications and simulations using technologies and systems common to the TDL industries.

TRAN 1013 Fundamentals of Transportation Operations 3 credits 4 class hours F

This course introduces students to a variety of strategic and operational issues that arise when operating transportation systems. Topics include including: infrastructure planning, technological innovation, surveying and mapping, (including GIS and GPS technology), route and system planning, environmental and safety compliance, forecasting, and transportation management and regulation. Students will also explore technological systems and apparatus (i.e., GPS, RFID, etc.) used to control and monitor rail, air, land, water, space, and pipeline transport systems.

TRAN 1043 Warehouse and Distribution Center Operations**3 credits 4 class hours F**

This course provides students with an introduction to the basic operations of warehouses and distribution centers, particularly emphasizing the differing characteristics and roles that each play in the success of the TDL system. Operating functions such as storage and location processes, stock movement and placement systems, processes for bringing products into an operation, dissemination products, and properly recording those processes will be emphasized. Students will demonstrate competencies related to warehouse and distribution operations by completing hands-on experiences in a warehouse/distribution center simulation area and by using various associated technologies.

TRAN 1063 Introduction to Logistics Operations 3 credits 4 class hours S

Prerequisite: TRAN 1013 Fundamentals of Transportation Operations, TRAN 1043 Warehouse and Distribution Center Operations. This course covers product support logistics, product development, creation, distribution, and “after market” logistics. Students will examine methods used to streamline and control the flow of humans and cargo through the value adding process and complete activities involved in moving products, services and information from point of origin to point of use. Additional study will focus on logistical and strategic considerations affecting operating costs and customer service, layout and product flow options that affect productivity and handling costs, traffic management, carrier operations, and warehousing.

TRAN 1083 Inventory and Asset Control 3 credits 4 class hours S

Prerequisite: TRAN 1013 Fundamentals of Transportation Operations, TRAN 1043 Warehouse and Distribution Center Operations. This course introduces inventory controls through activities and lessons related to finished goods inventory systems, work-in-progress inventory systems, and hybrids. Students will explore concepts related to customer service, efficiency, and inventory investment and control. Students will also learn techniques for analyzing, troubleshooting, repairing ineffective inventory systems, and practice using the specific processes for counting, receiving, putaway, checking methods, order picking, returns, scrap reporting and other activities common in the field.

TRAN 1093 Current Technology in Transportation, Distribution, & Logistics**3 credits 4 class hours S**

Prerequisite: TRAN 1043 Warehouse & Distribution Center Operations. This course provides students with opportunities to explore, apply, and solve warehouse and distribution problems using automated systems and technology. Topics include automated storage and retrieval systems, sortation systems, industrial and palletizing robots, automated identity and tracking systems, GIS and GPS technology, space optimization systems, radio data terminals, and other related technologies. Students will apply learning through case-studies and simulations and complete site visits of companies using these systems in order to see their practical use in the field.

TRAN 2003 Automated ID Technology Applications in TDL**3 credits 4 class hours F**

Prerequisite: TRAN 1093 *Current Technology in Transportation, Distribution, & Logistics*. This course addresses how Radio Frequency Identification (RFID) and barcode technology impact supply chain management systems and logistics applications. Students will be able to identify and categorize RFID and barcode system components with respect to industry standards, discuss their suitability for various industries and applications, and relate them to business needs of various industries.

TRAN 2023 GPS and GIS Technology Applications in Transportation, Distribution & Logistics**3 credits 4 class hours S**

Prerequisite: TRAN 1093 *Current Technology in Transportation, Distribution, and Logistics*. This course presents tracking and mapping capabilities made possible by the development and deployment of a Geosynchronous Positioned Satellite System and its combination with highly accurate and reliable Geographic Information Systems. Students will use GIS/GPS software to explore how these systems provide significant capability to navigate, pinpoint, observe, and systematically react and respond to events which might impact the logistics flow around the world.

TRAN 2043 International Operations**3 credits 4 class hours TBD**

Prerequisite: TRAN 1063 *Introduction to Logistics Operations*. This course provides students with an overview of the global logistics management and the importance and diversity of logistics activities conducted in support of international operations. Students will explore the logistics function, the international transportation system, import-export mechanics, and other key issues within the context of international sourcing and shipment management.

TRAN 2053 Warehouse Automation Systems**3 credits 4 class hours F/S**

Prerequisite: TRAN 1043 *Warehousing and Distribution Center Operations*, TRAN 1093 *Current Technology in Transportation, Distribution, and Logistics*. This course provides an overview of the effective utilization of automation/robotics technology in a warehouse or distribution center operation. Students will study the decision making process for determining levels of automation and will evaluate the various alternatives to chose the most appropriate for a given set of business objectives. Case studies are used to reinforce learning.

TRAN 2073 Risk Prevention and Safety Management 3 credits 4 class hours TBD

Prerequisite: TRAN 1013 *Fundamentals of Transportation Operations*, TRAN 1043 *Warehousing and Distribution Center Operations*. This course provides students an understanding of ways workplace safety can be managed to eliminate or reduce the risk of loss or damage to a customer's property during the transportation and logistics phase. Emphasis is given to how accidents affect profitability through both increased operating expenses and government mandated rules as well as how they affect the retention and acquisition of clients.

TRAN 2093 Customer Service Excellence in Transportation, Distribution, and Logistics**3 credits 4 class hours F**

Prerequisite: TRAN 1013 *Fundamentals of Transportation Operations*, TRAN 1043 *Warehousing and Distribution Center Operations*. This course focuses on building support systems that insure that customer expectations are adequately met. Topics include the identification of customer groups and their expectations, the provision of "user-friendly access to services, and the efficient resolution of customer complaints. Attention is given to technological tools for order entry, transaction tracking, delivery tracking, and customer behavior analysis as means for improving business operations and customer attitudes.

TRAN 2983 Internship 3 credits S

Prerequisite: 2.0 GPA or higher and approval of an approved Internship Project Application submitted by the date listed in the Academic Calendar prior to the semester of intended enrollment. Registered students must be in their final semester of enrollment. A faculty member serves as facilitator to help students develop a formal internship plan which documents learning objectives and course expectations. Internship objectives vary by degree program option, but all require students to apply general education and technical knowledge and skills in an actual work environment. Students must adhere to the policies and procedures of the industry or business in which they are placed, as well as to those of the College. Students are expected to provide a written and oral presentation at the conclusion of the course. The MSCC faculty facilitator assigns the final course grade based upon the student's timeliness in meeting internship objectives, his/her application of technical skills, the demonstration of general education outcomes defined for program graduates, and on feedback from the business/industry site supervisor. Internship assignments will be made within the first two weeks of the semester, with actual work time requiring a minimum of 60 hours spanning 9 to 10 weeks. Students should not begin an internship experience prior to receiving the necessary prior approvals from the project facilitator and appropriate dean. Successful completion of this course requires a grade of C or better.

TRAN 2993 Capstone Learning Experience 3 credits S

Prerequisite: 2.0 GPA or higher and approval of an approved Capstone Learning Project Application submitted by the date listed in the Academic Calendar prior to the semester of intended enrollment. Registered students must be in their final semester of enrollment. Students, with the assistance of a faculty facilitator, choose a project, identify project stakeholders, and develop and execute a formal project plan. Students maintain a journal which documents goals, progress, and barriers encountered. Capstone project assignments will be made within the first two weeks of the semester, with actual work time spanning 9 to 10 weeks. Most projects include an oral and/or written presentation at the conclusion of the semester. The MSCC faculty facilitator assigns the final course grade based upon the student's timeliness in meeting internship objectives, his/her application of technical skills, the demonstration of general education outcomes defined for program graduates, and on feedback from the project stakeholders.

Welding

Required placement test scores or successful completion of DRDG 1023 Developmental Reading and DENG 1053 Developmental English is a prerequisite for all courses unless otherwise noted. Certificate of Proficiency students without COMPASS scores may substitute the following: Key Train Level 4 or Workkeys Level 3 in Reading for Information (RI), and Locating Information (LI) or WorkKeys Manufacturing classes minimize the lecture component to engage students in intensive hands-on learning activities relating theory to practical hands-on applications involving skills development, critical thinking, and application of theory.

WELD 1002 Bench Work 2 credits 4 class hours F

Prerequisites: None. This course introduces bench work as part of a multi-skilled technical training program designed to enable students to master skills across a broad range of manufacturing disciplines. Students will learn about the identification of various tools, equipment and hardware and receive hands-on training in how to use these tools in performing repair operations in a typical industrial maintenance shop environment. Students will also receive hands-on instruction in the identification and use of threaded and non-threaded fasteners. The student will be introduced to the process of developing standard mechanical drawings to fabricate, weld and repair parts, as well as, reading blueprints with special references to welding applications.

WELD 1103 Introduction to Welding 3 credits 4 class hours F

Prerequisites: None. Designed for beginning welders in the manufacturing production and maintenance industry, this course provides basic skills and fundamental knowledge in oxy-acetylene welding, cutting and brazing, Shielded Metal Arc welding, Gas Metal Arc welding and Gas Tungsten Arc welding. Safety procedures and practices are emphasized.

WELD 1123 Intermediate Welding: SMAW 3 credits 6 class hours S

Prerequisites: WELD 1103 Introduction to Welding or proof of introductory level experience and pass an introductory welding skills test. This course introduces the student to arc welding terminology, processes, power sources, and equipment and provides is a comprehensive, hands-on training course in shielded metal arc welding techniques and problem solving.

WELD 1133 Advanced Welding I: GMAW 3 credits 6 class hours F/S

Prerequisites: WELD 1123 Intermediate Welding: SMAW. This course is a comprehensive, hands-on training program in Gas Metal Arc Welding commonly referred to as MIG welding. Students will learn applications and advantages of gas metal arc welding, be able to identify the variables involved in the GMAW process, and explain the uses for equipment and supplies required for GMAW applications.

WELD 1143 Advanced Welding II: Specialty Welding 3 credits 6 class hours F/S

Prerequisites: WELD 1133 Advanced Welding I: GMAW. This course provides comprehensive, hands-on training in DC and AC Gas Tungsten Arc Welding, commonly referred to as TIG welding. Students will learn applications and advantages of gas tungsten arc welding by being able to identify the variables involved in the GTAW process and explain the uses for equipment and supplies required for GTAW applications.