

Owensboro Community and Technical College

Approved Discover College Concurrent Enrollment Program Course List 2021-2022

*Courses below are subject to availability and each partner high school, based on **teacher credentials**, a **minimum of 10 students** enrolled in the course meeting **placement guidelines** and upon receipt **of fee**. In order for a course to be offered with our high school partners the course and the instructor **must be approved**.*

**Course number and Title** (Credit Hours) Description

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**ACT 101 Fundamentals of Accounting (3)** Students are introduced to accounting terminology and general theoretical principles. The major focus of the course is on the accounting cycle and the communication of financial information to decision-makers.

Placement Guidelines: Technical

Teacher Requirements: An MBA is required to teach this course.

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**ADX 120/121 Basic Auto Electricity (5)** **ADX 120:** Introduces the student to the principles, theories, and concepts of the automotive electrical system that include the unique diagramming, coding and locating of wiring, and component devices. **ADX 121:** Provides hands-on work designed to allow the student to use the concepts, principles, and theories covered in Basic Auto Electricity, ADX 120, in practical application. Also provides the student a work experience alternating between periods of work off campus and work in a classroom laboratory setting.

Placement Guidelines: Technical

Teacher Requirements: Industry specific training and certifications required.

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**AGR 240 Introduction to Animal Science (3)** Provides a limited overview of the farm species of livestock. Includes the study of major livestock breeds of beef and dairy cattle, sheep, swine, poultry, and horses. Covers management application for livestock production as well as production facilities.

Placement Guidelines: Technical

Teacher Requirements: Industry specific training and certifications required.

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**AGR 250 Introduction to Plants/Crop Production (3)** Familiarizes students with the basic principles and theories involved in field crop production. Provides a limited understanding of how crops are grown as a prelude to growing crops successfully. Covers pest and pesticides as well as plant disease and protection.

Placement Guidelines: Technical

Teacher Requirements: An MBA is required to teach this course.

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**AHS 115 Medical Terminology (3)** A study of anatomical, physiological and pathological terminology with emphasis on work structures and definition of root words, suffixes, and prefixes from Greek and Latin. Additional emphasis is placed on spelling and pronunciation. Primarily designed for individuals preparing for a career in health care. No previous knowledge of Greek or Latin is required.

Placement Guidelines: Technical

Teacher Requirements: Industry specific training and certifications required.

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**AUT 110/111 Brake Systems (5)** **AUT 110:** Involves the operational theory and application of hydraulic and anti-lock brake systems; discusses disc and drum brakes. **AUT 111:** Develop skills in the diagnosis and repair of hydraulic and anti-lock brake systems, covering both disc and drum braking systems. The student may be provided a work experience alternating between periods of work off campus and work in a classroom laboratory setting.

Placement Guidelines: Technical

Teacher Requirements: Industry specific training and certifications required.

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**AUT 160/161 Suspension and Steering (5)** **AUT 160:** Covers automotive suspension system, including diagnosing of suspension problems, identifying components, recognizing tire wear problems, wheel balancing, and using alignment equipment. **AUT 161:** Introduces skills necessary in the diagnosis and repair of automotive suspension systems, wheel alignment and wheel balancing. The student may be provided a work experience alternating between periods of work off campus and in a classroom laboratory setting.

Placement Guidelines: Technical

Teacher Requirements: Industry specific training and certifications required.

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**BAS 120 Personal Finance (3)** Provides information needed to make intelligent choices and to take effective action in the management of personal resources. Applies financial planning, buying, borrowing, saving, budgeting, investing, insurance, and taxes to personal finance.

Placement Guidelines: Technical

Teacher Requirements: An MBA is required to teach this course.

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**BIO 112/113 Introduction to Biology & Lab (4)** **BIO 112:** Basic study of structure, function, and interaction of living organisms including cell theory, genetics, energetics, evolution and ecology. **BIO 113:** Emphasizes basic laboratory studies of structure, function, and interaction of living organisms including cell theory, genetics, energetics, evolution and ecology.

Placement Guidelines: Technical

Teacher Requirements: Masters degree plus 18 hours in the discipline area required.

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**BIO 135 Basic Anatomy and Physiology with Laboratory (4):** Presents the fundamental structure of the human body and the physiological mechanisms involved in normal functioning are presented through lecture and student participation in laboratory activities.

Placement Guidelines: Dual Credit – General Education

Teacher Requirements: Masters degree plus 18 hours in the discipline area required.

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**CAR 140 Surveying & Foundations (3):** Enables the student to become familiar with construction surveying methods, site layout procedures and materials used in the construction of foundation systems as well as discussion on the use of the builders level, transit and laser levels. Covers the characteristics of concrete, excavation procedures, forming methods and material estimating. Co-req: CAR 141

Placement Guidelines: Technical

Teacher Requirements: Industry specific training and certifications required.

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**CAR 141 Surveying & Foundations-Lab (2):** Familiarizes the student with construction surveying methods, site layout procedures and materials used in the construction of foundation systems as well as the application of the builders level, transit and laser levels. Covers the application of concrete procedures, excavation procedures, forming methods and material estimating. Co-req: CAR 140

Placement Guidelines: Technical

Teacher Requirements: Industry specific training and certifications required.

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**CAR 190 Light Frame Construction I (3):** Emphasizes methods of floor, wall and stair framing, layout and construction. Provides discussion of industry safety standards and building codes.

Placement Guidelines: Technical

Teacher Requirements: Industry specific training and certifications required.

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**CAR 191 Light Frame Const. I-Lab (2):** Permits the student to practice floor, wall, and stair framing layout and construction techniques including the implementation of building codes and industry safety standards during lab or job-site practice. Co-requisite: CAR 190.

Placement Guidelines: Technical

Teacher Requirements: Industry specific training and certifications required.

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**CAR 196 Light Frame Construction II (3):** Covers basic roof design and combination roof designs used in the construction industry including the layout and installation practices that will be used to fabricate and install ceiling and roof framing systems. Provides discussion of job-site safety practice, scaffold and ladder safety that deals with roof construction, and building code requirements for roof construction and material estimating.

Placement Guidelines: Technical

Teacher Requirements: Industry specific training and certifications required.

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**CAR 197 Light Frame Const. II-Lab (2):** Covers basic roof design and construction methods used in the construction industry including layout, cut and install ceiling joists, rafters, and roof decking materials. Includes layout and installation practices for roof truss systems, jobsite safety practice, scaffold and ladder safety that deals with roof construction and building code requirements for roof construction and material estimating. Co-requisite: CAR 196.

Placement Guidelines: Technical

Teacher Requirements: Industry specific training and certifications required.

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**CAR 200 Light Frame Construction III (3):** Presents the concepts of interior and exterior finish materials and methods of installation.

Placement Guidelines: Technical

Teacher Requirements: Industry specific training and certifications required.

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**247 CAR 201 Light Frame Const. III-Lab (2):** Provides an opportunity for students to perform basic applications of the concepts of interior and exterior finish methods for light frame construction. Co-requisite: CAR 200.

Placement Guidelines: Technical

Teacher Requirements: Industry specific training and certifications required.

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**CAR 240 Light Frame Construction IV (3):** Covers the concepts that support the planning, construction and installation methods for kitchen and bath cabinetry and countertops. Provides discussion of special finish trim techniques including finish stair construction and specialty millwork.

Placement Guidelines: Technical

Teacher Requirements: Industry specific training and certifications required.

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**CAR 241 Light Frame Const. IV-Lab (2):** Allows the student to practice the concepts that support the planning, construction and installation methods for kitchen and bath cabinetry and countertops including special finish trim techniques of finish stair construction and specialty millwork. Co-requisite: CAR 240.

Placement Guidelines: Technical

Teacher Requirements: Industry specific training and certifications required.

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**CIT 111 Computer Hardware and Software (4)** Presents a practical view of computer hardware and client operating systems. Cover computer hardware components; troubleshooting, repair, and maintenance; operating system interfaces and management tools; networking components; computer security; and operation procedures.

Prerequisite: CIT105 or Consent of Instructor. Prerequisite or Co-requisite: MAT065

Placement Guidelines: Technical

Teacher Requirements: Industry specific training and certifications required.

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**CIT 120 Computational Thinking (3)** Promotes understanding of computer programming and logic by teaching students to “think like a computer”. Cover skills needed to develop and design language-independent solutions to solve computer-related problems. Covers development and design basics including use of variables, control and data structures, and principles of command-line and object-oriented languages.

Prerequisite: Digital Literacy or Consent of Instructor Prerequisite or Co-requisite: MAT 126 or Consent of Instructor

Placement Guidelines: Technical

Teacher Requirements: Industry specific training and certifications required.

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**CIT 149 Java I (3)** Introduces students to fundamental programming concepts using the Java programming language. Includes data types, control structures, simple data structures, error-handling, object-oriented programming, graphical user interfaces, and modular programming.

Prerequisite: CIT 120 or Consent of Instructor

Placement Guidelines: Technical

Teacher Requirements: Industry specific training and certifications required.

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**CIT 155 Web Page Development (3)** Introduces web page design through the use of HTML and CSS. Uses text and/or web editors to create web documents with various formats and page layouts, multimedia, tables and forms. Emphasizes W3C web design and accessibility standards.

Prerequisite: CIT 105 or Consent of Instructor

Placement Guidelines: Technical

Teacher Requirements: Industry specific training and certifications required.

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**CIT 157 Website Design & Production (3)** Introduces web site production processes with particular emphasis on design involving layout, navigation, interactivity, and using web production and software.

Prerequisite: CIT 105 or Consent of Instructor

Placement Guidelines: Technical

Teacher Requirements: Industry specific training and certifications required.

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**CIT 160 Introduction to Networking Concepts (4)** Introduces technical level concepts of non-vendor specific networking including technologies, media, topologies, devices, management tools, and security. Provides the basics of how to manage, maintain, troubleshoot, install, operate, and configure basic network infrastructure.

Prerequisite or Co-Requisite: CIT 111 AND MAT 065 or Consent of Instructor

Placement Guidelines: Technical

Teacher Requirements: Industry specific training and certifications required

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**CIT 232 Help Desk Operations (3)** Introduces a variety of tools and techniques to provide user support in help desk operations. Explores helpdesk concepts, customer service skills, troubleshooting problems, writing for end users, help desk operations and software, needs analysis, facilities management, and other topics related to end user support.

Prerequisite: CIT111 or Consent of Instructor.

Placement Guidelines: Technical

Teacher Requirements: Industry specific training and certifications required.

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**CIT 260 Network Hardware Installation (3)** and Troubleshooting Provides students with the knowledge and skills necessary to design, install, configure, and troubleshoot cabling systems and equipment used to connect a local area network.

Prerequisite: CIT 160 or Consent of Instructor

Placement Guidelines: Technical

Teacher Requirements: Industry specific training and certifications required.

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**CLA 131 Medical Terminology from Greek and Latin (3)** Latin and Greek roots, prefixes, and suffixes as found in medical terminology. Primarily for pre-medical, pre-dental, pre-nursing, and pre-veterinary students, but others will be admitted for help in vocabulary building.

Placement Guidelines: Technical

Teacher Requirements: Industry specific training and certifications required.

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**CMM 110 Fundamentals of Machining Tool A (3)** Fundamentals of Machine Tools-A provides the basic principles needed for a solid foundation in machine tool technology. Areas and machines covered shop safety, bench work, drill press, power saw, measurement, and mills.

Placement Guidelines: Technical

Teacher Requirements: Industry specific training and certifications required.

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**CMM 112 Fundamentals of Machine Tool B (4)** Provides the basic principles needed for a solid foundation in machine and technology. Areas and machine covered include shop safety, bench work, drill press, power saw, measurement and mills.

Prerequisite: CMM 110 with a grade of C or greater or Consent of Instructor

Placement Guidelines: Technical

Teacher Requirements: Industry specific training and certifications required.

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**CMM 120 Applied Machining I (3)** Consists of intermediate level skills using machining machines and surface grinders. It will include the selection of grinding wheels.

Prerequisite: (CMM 110 and CMM 112) or (CMM114) with a grade of C or greater or Consent of Instructor

Placement Guidelines: Technical

Teacher Requirements: Industry specific training and certifications required.

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**CMM 122 Applied Machining II (3)** Carries the student to higher levels in the operation of machine tools. Prerequisite: CMM 120 with a grade of C or greater or Consent of Instructor

Placement Guidelines: Technical

Teacher Requirements: Industry specific training and certifications required.

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**CMM 130 Manual Programming (3)** Introduces the student to CNC codes and programming, setup and operation of CNC machine tools.

Placement Guidelines: Technical

Teacher Requirements: Industry specific training and certifications required.

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**CMM 132 CAD/CAM/CNC (3)** Introduces the student to CAD/CAM/CNC systems which includes CAM software.

Placement Guidelines: Technical

Teacher Requirements: Industry specific training and certifications required.

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**CMM 134 Manual Programming (CAD/CAM/CNC) (6)** Introduces the student to CAD/CAM/CNC systems, CNC format, the Cartesian Coordinate System, CNC codes and programming, set-up and operation of CNC machine tool.

Pre-requisite: CMM 110 and CMM 112 or CMM 114

Placement Guidelines: Technical

Teacher Requirements: Industry specific training and certifications required.

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**COM 181 Basic Public Speaking (3)** Gives platform experience in the fundamentals of effective speaking.

Placement Guidelines: Dual Credit – General Education

Teacher Requirements: Masters degree plus 18 hours in the discipline area required.

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**CPR 100** CPR for Healthcare Professionals Cardiopulmonary resuscitation (Adult/Infant/Child) is a course designed to teach current emergency techniques relative to cardiac and/or respiratory arrest, as put forth by the American Heart Association, National Safety Council or American Red Cross. The American Heart Association, National Safety Council or American Red Cross standardized course qualifies a student for certification of cardiopulmonary resuscitation.

Placement Guidelines: Technical

Teacher Requirements: Industry specific training and certifications required

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**EDU 201 Introduction to American Education (3)** Presents an introduction to teaching including teaching as a profession, major education philosophies, social reform, trends and issues in education, curriculum and instruction.

Prerequisite: ENG101. Students may enroll in both ENG101 and EDU201 concurrently to receive credit; Dual Credit-General Education

Teacher Requirements: Masters degree plus 18 hours in the discipline area required.

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**EET 254 Electrical Construction (3)** This course involves the study of materials and procedures and expands the knowledge and skills needed to work in commercial and industrial construction, wiring

Co-Requisite: EET 255

Placement Guidelines: Technical

Teacher Requirements: Industry specific training and certifications required.

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**EET 255 Electrical Construction Lab (4)** Designed to give hands-on experience with electrical materials and equipment in commercial and industrial construction wiring.

Co-Requisite: EET 254

Placement Guidelines: Technical

Teacher Requirements: Industry specific training and certifications required.

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**ELT 110 Circuits I (5)** Introduces application of basic DC and AC circuits, including circuit analysis techniques with discussion of introductory magnetism and transformer principles. Emphasizes design, construction, and troubleshooting of simple DC and AC circuits in laboratory exercises.

Placement Guidelines: Technical

Teacher Requirements: Industry specific training and certifications required.

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**ENG 101 Writing I (3)** Focuses on academic writing. Provides instruction in drafting and revising essays that express ideas in standard English, including reading critically, thinking logically, responding to texts, addressing specific audiences, researching and documenting sources. Includes review of grammar, mechanics, and usage.

Placement Guidelines: Dual Credit – General Education

*ENG 100 Placement NOT offered in high schools*

Teacher Requirements: Masters degree plus 18 hours in the discipline area required.

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**ENG 102 Writing II (3)** Emphasizes argumentative writing. Provides further instruction in drafting and systematically revising essays that express ideas in Standard English. Includes continued instruction and practice in reading critically, thinking logically, responding to texts, addressing specific audiences, and researching and documenting credible academic sources.

Prerequisite: ENG101

Teacher Requirements: Masters degree plus 18 hours in the discipline area required.

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**HIS 108 History of the United States Through 1865 (3)** Examines key political, economic, and social topics that have significantly influenced the American experience from the pre-colonial period through the Civil War era.

Teacher Requirements: Masters degree plus 18 hours in the discipline area required.

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**HIS 109 History of the United States Since 1865 (3)** Examines key political, economic, and social topics that have significantly influenced the American experience from Reconstruction through the contemporary era.

Teacher Requirements: Masters degree plus 18 hours in the discipline area required.

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**IEC 101 Orientation to Early Childhood Education (3)** Introduces information related to designing appropriate environments and curricula for infants, toddlers, and preschoolers. Explores the historical and current influences on early childhood education. Includes 20 hours of required field experience, which may be waived by the IECE program coordinator for students concurrently enrolled in IEC 190 or IEC 291.

Placement Guidelines: Technical

Teacher Requirements: Industry specific training and certifications required.

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**IMT 150/151 Maintaining Industrial Equipment I (5)** **IMT150:** Introduces students to maintenance techniques and procedures used to maintain industrial equipment. **IMT151:** Provides the student with lab experience in the maintenance of industrial equipment.

Placement Guidelines: Technical

Teacher Requirements: Industry specific training and certifications required.

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**MAT 126 Technical Algebra and Trigonometry (3)** Examines mathematical concepts from algebra and trigonometry. Includes vectors, phasor algebra, variation, trigonometric functions, coordinate systems, system of linear equations, quadratic, rational, exponential and logarithmic equations.

Placement Guidelines: Dual Credit – General Education

**MAT 126S (1 - 2)** *Corequisite Remediation for Technical Algebra and Trigonometry Provides supplementary instruction for students who do not meet college readiness standards in MAT 126. Covers content necessary for student success in MAT 126. Corequisite: MAT 126.*

Teacher Requirements: Masters degree plus 18 hours in the discipline area required.

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**MAT 150 College Algebra (3)** Includes selected topics in algebra and analytic geometry.

Placement Guidelines: Dual Credit - General Education

*MAT 100 placement NOT offered in high schools*

Teacher Requirements: Masters degree plus 18 hours in the discipline area required.

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**MAT 155 Trigonometry (3):** Includes the trigonometric functions, identities, multiple analytic formulas, laws of sines and cosines, graphs of trigonometric functions in rectangular and polar coordinates, and solving trigonometric equations. Emphasizes applications in each topic. (Students may not receive credit for both MAT155 and any other trigonometry or pre-calculus course.)

Pre-requisite: 1. Math ACT score of 22 or above, 2. Math ACT score of 19-21 with concurrent MAT150, 3. Successful completion of Intermediate Algebra, MAT 126, or equivalent, or 4. Placement exam recommendation.

Teacher Requirements: Masters degree plus 18 hours in the discipline area required.

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**MAT 175 Calculus I (5)** Examines one-variable calculus including limits, differential and integration of algebraic, trigonometric, exponential, hyperbolic and inverse trigonometric functions with applications.

Placement Guidelines: Dual Credit – General Education

Teacher Requirements: Masters degree plus 18 hours in the discipline area required.

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**MUS 100 Introduction to Music (3)** Introduces the elements of music as they apply to the listening experience. Emphasizes the development of an awareness and understanding of musical styles from the Middle Ages to the present. Designed for the non-music major with no prior knowledge of music and is not intended to fulfill a program course requirement for music majors.

Placement Guidelines: Dual Credit – General Education

Teacher Requirements: Masters degree plus 18 hours in the discipline area required.

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**MUS 222 History and Sociology of Rock Music (3)** Provides a listening survey course with a chronological approach, covering the years 1950-present. Emphasizes both the music and the sociological climate reflected and advocated by the music.

Placement Guidelines: Dual Credit – General Education

Teacher Requirements: Masters degree plus 18 hours in the discipline area required.

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**NAA 100 Nursing Assistant Skills I (3)** Provides knowledge and skills for nurse aides to assume the role and responsibility required in a long term care setting. The focus is on communication, infection control, safety, resident/patient rights, and basic nursing skills.

Placement Guidelines: Technical

Teacher Requirements: Industry specific training and certifications required.

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**PHY 171 Applied Physics (4):** Surveys mechanics, heat, sound, electricity, magnetism, light, and modern physics as applied to practical systems.

Placement Guidelines: Dual Credit – General Education

Teacher Requirements: Masters degree plus 18 hours in the discipline area required.

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**PHY 201 College Physics (4)** Focuses on the mechanics of matter as governed by Newton's Laws; by the conservation laws of energy, momentum, and angular momentum; and thermal processes using algebra and basic trigonometry. Companion lecture to PHY 202. Credit is not given to students who have completed PHY231.

Placement Guidelines: Dual Credit – General Education

Teacher Requirements: Masters degree plus 18 hours in the discipline area required.

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**PHY 202 College Physics I Lab (1)** Enhances concepts introduced in PHY201 through experiments in classical mechanics and thermal physics.

Co-Requisite: PHY201

Teacher Requirements: Masters degree plus 18 hours in the discipline area required.

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**PHY 203 College Physics II (4)** Focuses on electromagnetic phenomena, circuits, optics and an introduction to modern physics using algebra and basic trigonometry. Companion lecture to PHY204. Laboratory. Credit is not given to students who have already completed PHY232.

Prerequisite: PHY201 or equivalent.

Teacher Requirements: Masters degree plus 18 hours in the discipline area required.

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**PHY 204 College Physics II Lab (1)** Enhances the concepts introduced in PHY203 through experiments in electricity, magnetism, and optics.

Co-requisite: PHY203 or equivalent.

Teacher Requirements: Masters degree plus 18 hours in the discipline area required.

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**SFA 100 (1)** Safety and First Aid Safety and First Aid is a course designed to teach current strategies relative to designated emergency situations as put forth by the National Safety Council or American Red Cross. The National Safety Council or American Red Cross standardized course qualifies a student for certification in safety and first aid.

Placement Guidelines: Technical

Teacher Requirements: Industry specific training and certifications required.

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**WLD 100/101 Oxy-Fuel Systems (4)** **WLD100:** A working knowledge of oxy-fuel identification, set-up, inspection, and maintenance; consumable identification, selection and care; principles of operation; and effects of variables for manual

and mechanized oxy-fuel cutting, welding, brazing principles and practices, and metallurgy. Shop safety and equipment use are also covered. **WLD101**: Manipulative skills necessary to weld and cut plate and pipe in all positions, as well as brazing, braze welding, and gouging.

Co-Requisite: WLD100 and WLD101 must be taken concurrently.

Placement Guidelines: Technical

Teacher Requirements: Industry specific training and certifications required.

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**WLD 151 and 152 Basic Welding A/B (2/3)** An introduction to common cutting and welding processes used in industry. Theory, setup, operation, and related safety are applied.

Placement Guidelines: Technical

Teacher Requirements: Industry specific training and certifications required.

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