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| **ACA-111\_1997SU** | **College Student Success** | **ACA-111** |

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| CIS Course ID | S13509 |
| Effective Term | Summer 1997 |
| End Term |  |

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| Class | 1 | Lab | 0 | Clinical | 0 | Work | 0 | Credit | 1 |

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| This course introduces the college's physical, academic, and social environment and promotes the personal development essential for success. Topics include campus facilities and resources; policies, procedures, and programs; study skills; and life management issues such as health, self-esteem, motivation, goal-setting, diversity, and communication. Upon completion, students should be able to function effectively within the college environment to meet their educational objectives. |

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| State Prerequisites | None |

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| State Corequisites | None |

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| **ACA-122\_2014SU** | **College Transfer Success** | **ACA-122** |

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| CIS Course ID | S24018 |
| Effective Term | Summer 2014 |
| End Term |  |

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| Class | 0 | Lab | 2 | Clinical | 0 | Work | 0 | Credit | 1 |

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| This course provides information and strategies necessary to develop clear academic and professional goals beyond the community college experience. Topics include the CAA, college policies and culture, career exploration, gathering information on senior institutions, strategic planning, critical thinking, and communications skills for a successful academic transition. Upon completion, students should be able to develop an academic plan to transition successfully to senior institutions. |

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| Competencies |
| 1. Develop a strategic plan for completing community college academic goals, including certificates, diplomas, and/or associate degrees. 2. Develop a strategic plan for transferring to a university and preparing for a new career. 3. Identify the rights and responsibilities of transfer students under the Comprehensive Articulation Agreement (CAA), including Universal General Education Transfer Component (UGETC) designated courses, the Transfer Assured Admissions Policy (TAAP), the CAA appeals process, and university tuition surcharge. 4. Evaluate learning strategies, including note-taking, test-taking, information processing, time management, and memorization techniques, and identify strategies for improvement. 5. Identify essential college resources, including financial aid, advising, registration, tutoring, library services, computer labs, and counseling services and recognize the importance of these resources on student success. 6. Identify essential college policies and procedures, including academic integrity such as avoiding plagiarism; calculating a GPA, and maintaining satisfactory academic progress for financial aid eligibility and/or good academic standing. |

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| State Prerequisites | None |

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| State Corequisites | None |

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| **ATR-211\_1997SU** | **Robot Programming** | **ATR-211** |

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| CIS Course ID | S20705 |
| Effective Term | Summer 1997 |
| End Term | Summer 1999 |

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| Class | 2 | Lab | 3 | Clinical | 0 | Work | 0 | Credit | 3 |

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| This course provides the operational characteristics of industrial robots and programming in their respective languages. Topics include robot programming utilizing teach pendants, PLCs, and personal computers; and the interaction of external sensors, machine vision, network systems, and other related devices. Upon completion, students should be able to program and demonstrate the operation of various robots. |

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| State Prerequisites | Take One: CIS-110 or CIS-111 |

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| State Corequisites | None |

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| ATR-112\_2013FA | Intro to Automation | ATR-112 |

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| CIS Course ID | S23467 |
| Effective Term | Fall 2013 |
| End Term |  |

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| Class | 2 | Lab | 3 | Clinical | 0 | Work | 0 | Credit | 3 |

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| This course introduces the basic principles of automated systems and describes the tasks that technicians perform on the job. Topics include the history, development, and current applications of robots and automated systems including their configuration, operation, components, and controls. Upon completion, students should be able to understand the basic concepts of automation and robotic systems. |

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| State Prerequisites | None |

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| State Corequisites | None |

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| **CIS-110\_2006SP** | **Introduction to Computers** | **CIS-110** |

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| CIS Course ID | S21058 |
| Effective Term | Spring 2006 |
| End Term |  |

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| Class | 2 | Lab | 2 | Clinical | 0 | Work | 0 | Credit | 3 |

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| This course introduces computer concepts, including fundamental functions and operations of the computer. Topics include identification of hardware components, basic computer operations, security issues, and use of software applications. Upon completion, students should be able to demonstrate an understanding of the role and function of computers and use the computer to solve problems. |

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| Competencies |
| 1. Identify the basic elements required in a computer system. 2. Produce electronic documents using various software applications. 3. Illustrate the role of the computer for personal and professional uses. |

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| State Prerequisites | None |

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| State Corequisites | None |

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| COM-231\_1997SU | Public Speaking | COM-231 |

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| CIS Course ID | S12601 |
| Effective Term | Summer 1997 |
| End Term |  |

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| Class | 3 | Lab | 0 | Clinical | 0 | Work | 0 | Credit | 3 |

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| This course provides instruction and experience in preparation and delivery of speeches within a public setting and group discussion. Emphasis is placed on research, preparation, delivery, and evaluation of informative, persuasive, and special occasion public speaking. Upon completion, students should be able to prepare and deliver well-organized speeches and participate in group discussion with appropriate audiovisual support. |

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| State Prerequisites | None |

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| State Corequisites | None |

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| DFT-119\_1997SU | Basic CAD | DFT-119 |

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| CIS Course ID | S13624 |
| Effective Term | Summer 1997 |
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| Class | 1 | Lab | 2 | Clinical | 0 | Work | 0 | Credit | 2 |

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| This course introduces computer-aided drafting software for specific technologies to non-drafting majors. Emphasis is placed on understanding the software command structure and drafting standards for specific technical fields. Upon completion, students should be able to create and plot basic drawings. |

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| State Prerequisites | None |

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| State Corequisites | None |

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| ELC-112\_2013FA | DC/AC Electricity | ELC-112 |

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| CIS Course ID | S23481 |
| Effective Term | Fall 2013 |
| End Term |  |

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| Class | 3 | Lab | 6 | Clinical | 0 | Work | 0 | Credit | 5 |

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| This course introduces the fundamental concepts of and computations related to DC/AC electricity. Emphasis is placed on DC/AC circuits, components, operation of test equipment; and other related topics. Upon completion, students should be able to construct, verify, and analyze simple DC/AC circuits. |

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| Competencies |
| ·Student Learning Outcomes 1. Demonstrate safe practices and procedures with tools, materials, and industry accepted test equipment covered in the course. 2. Demonstrate appropriate use of test equipment, evaluate circuit performance and apply appropriate troubleshooting techniques to electrical circuits. 3. Construct and analyze series, parallel and combinations circuits using appropriate components. 4. Use appropriate laws and formulas to perform circuit calculations. 5. Interpret electrical schematics. 6. Describe the characteristics of various power sources. |

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| State Prerequisites | None |

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| State Corequisites | None |

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| ELC-117\_2013FA | Motors and Controls | ELC-117 |

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| CIS Course ID | S23521 |
| Effective Term | Fall 2013 |
| End Term |  |

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| Class | 2 | Lab | 6 | Clinical | 0 | Work | 0 | Credit | 4 |

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| This course introduces the fundamental concepts of motors and motor controls. Topics include ladder diagrams, pilot devices, contactors, motor starters, motors, and other control devices. Upon completion, students should be able to properly select, connect, and troubleshoot motors and control circuits. |

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| Competencies |
| Student Learning Outcomes 1. Demonstrate safe practices and procedures with tools, materials and industry accepted test equipment covered in the course. 2. Demonstrate appropriate use of test equipment, evaluate circuit performance and apply appropriate troubleshooting techniques to control circuits. 3. Interpret and use ladder and wiring diagrams, symbols, and schematics. 4. Demonstrate and describe the use of relays, contactors, motor starters and pilot devices in electrical control circuits. 5. Describe principles and operations related to electrical control circuits. 6. Describe the concepts of rotating electrical machinery. |

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| State Prerequisites | None |

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| State Corequisites | None |

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| ELC-128\_2013FA | Intro to PLC | ELC-128 |

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| CIS Course ID | S23522 |
| Effective Term | Fall 2013 |
| End Term |  |

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| Class | 2 | Lab | 3 | Clinical | 0 | Work | 0 | Credit | 3 |

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| This course introduces the programmable logic controller (PLC) and its associated applications. Topics include ladder logic diagrams, input/output modules, power supplies, surge protection, selection/installation of controllers, and interfacing of controllers with equipment. Upon completion, students should be able to understand basic PLC systems and create simple programs. |

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| Competencies |
| Student Learning Outcomes 1. Identify and demonstrate safe practices and procedures with tools, materials and industry accepted test equipment covered in the course. 2. List and describe the hardware components used in PLC systems. 3. Utilize numbering systems as applied to PLCs. 4. Demonstrate and describe the use of various PLC instruction sets. 5. Create various simple PLC programs using the appropriate instruction set. 6. Apply appropriate troubleshooting methods to PLCs. |

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| State Prerequisites | None |

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| State Corequisites | None |

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| ELC-213\_2007FA | Instrumentation | ELC-213 |

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| CIS Course ID | S21598 |
| Effective Term | Fall 2007 |
| End Term |  |

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| Class | 3 | Lab | 2 | Clinical | 0 | Work | 0 | Credit | 4 |

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| This course covers the fundamentals of instrumentation used in industry. Emphasis is placed on electric, electronic, and other instruments. Upon completion, students should be able to install, maintain, and calibrate instrumentation. |

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| State Prerequisites | None |

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| State Corequisites | None |

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| ELC-228\_2007FA | PLC Applications | ELC-228 |

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| CIS Course ID | S21601 |
| Effective Term | Fall 2007 |
| End Term |  |

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| Class | 2 | Lab | 6 | Clinical | 0 | Work | 0 | Credit | 4 |

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| This course covers programming and applications of programmable logic controllers. Emphasis is placed on programming techniques, networking, specialty I/O modules, and system troubleshooting. Upon completion, students should be able to specify, implement, and maintain complex PLC controlled systems. |

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| State Prerequisites | None |

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| State Corequisites | None |

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| ENG-111\_2020FA | Writing and Inquiry | ENG-111 |

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| CIS Course ID | S25433 |
| Effective Term | Fall 2020 |
| End Term |  |

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| Class | 3 | Lab | 0 | Clinical | 0 | Work | 0 | Credit | 3 |

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| This course is designed to develop the ability to produce clear writing in a variety of genres and formats using a recursive process. Emphasis includes inquiry, analysis, effective use of rhetorical strategies, thesis development, audience awareness, and revision. Upon completion, students should be able to produce unified, coherent, well-developed essays using standard written English. |

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| Competencies |
| Student Learning Outcomes 1. Demonstrate writing as a recursive process. 2. Demonstrate writing and inquiry in context using different rhetorical strategies to reflect, analyze, explain, and persuade in a variety of genres and formats. 3. Students will reflect upon and explain their writing strategies.  4. Demonstrate the critical use and examination of printed, digital, and visual materials. 5. Locate, evaluate, and incorporate relevant sources with proper documentation. 6. Compose texts incorporating rhetorically effective and conventional use of language. 7. Collaborate actively in a writing community. |

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| State Prerequisites | Take One Set: Set 1: DRE-097 Set 2: ENG-002 Set 3: BSP-4002 |

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| State Corequisites | Take ENG-011 |

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| HUM-115\_2020FA | Critical Thinking | HUM-115 |

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| CIS Course ID | S25444 |
| Effective Term | Fall 2020 |
| End Term |  |

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| Class | 3 | Lab | 0 | Clinical | 0 | Work | 0 | Credit | 3 |

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| This course introduces the use of critical thinking skills in the context of human conflict. Emphasis is placed on evaluating information, problem solving, approaching cross-cultural perspectives, and resolving controversies and dilemmas. Upon completion, students should be able to demonstrate orally and in writing the use of critical thinking skills in the analysis of appropriate texts. |

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| State Prerequisites | Take one set: Set 1: DRE-098 Set 2: ENG-002 Set 3: BSP-4002  Set 4: ENG-111 |

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| State Corequisites | None |

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| HYD-110\_2013FA | Hydraulics/Pneumatics I | HYD-110 |

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| CIS Course ID | S23526 |
| Effective Term | Fall 2013 |
| End Term |  |

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| Class | 2 | Lab | 3 | Clinical | 0 | Work | 0 | Credit | 3 |

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| This course introduces the basic components and functions of hydraulic and pneumatic systems. Topics include standard symbols, pumps, control valves, control assemblies, actuators, FRL, maintenance procedures, and switching and control devices. Upon completion, students should be able to understand the operation of a fluid power system, including design, application, and troubleshooting. |

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| Competencies |
| Student Learning Outcomes 1. Identify and demonstrate safe practices and procedures with tools, materials and industry accepted test equipment covered in the course. 2. Demonstrate appropriate use of test equipment, evaluate circuit performance and apply appropriate troubleshooting techniques to fluid power systems. 3. Identify components of fluid power systems using symbols and schematics. 4. Assemble a fluid power system. 5. Calculate and demonstrate the basic physics of fluid mechanics. |

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| State Prerequisites | None |

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| State Corequisites | None |

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| ISC-112\_2013FA | Industrial Safety | ISC-112 |

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| CIS Course ID | S23527 |
| Effective Term | Fall 2013 |
| End Term |  |

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| Class | 2 | Lab | 0 | Clinical | 0 | Work | 0 | Credit | 2 |

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| This course introduces the principles of industrial safety. Emphasis is placed on industrial safety and OSHA regulations. Upon completion, students should be able to demonstrate knowledge of a safe working environment and OSHA compliance. |

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| Competencies |
| Student Learning Outcomes 1. Describe and identify safety practices required to perform various job-related activities. 2. Describe the application of OSHA procedures and requirements for compliance. |

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| State Prerequisites | None |

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| State Corequisites | None |

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| MAT-121\_2020FA | Algebra/Trigonometry I | MAT-121 |

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| CIS Course ID | S25429 |
| Effective Term | Fall 2020 |
| End Term |  |

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| Class | 2 | Lab | 2 | Clinical | 0 | Work | 0 | Credit | 3 |

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| This course provides an integrated approach to technology and the skills required to manipulate, display, and interpret mathematical functions and formulas used in problem solving. Topics include the properties of plane and solid geometry, area and volume, and basic proportion applications; simplification, evaluation, and solving of algebraic equations and inequalities and radical functions; complex numbers; right triangle trigonometry; and systems of equations. Upon completion, students will be able to demonstrate the ability to use mathematics and technology for problem-solving, analyzing and communicating results. |

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| Competencies |
| ·Student Learning Outcomes 1. Use geometric principles to solve industrial application problems involving perimeter, area, and volume. 2. Employ basic algebraic operations to simplify, evaluate, and solve proportions, radical and other algebraic functions, equations, and inequalities. 3. Perform basic algebraic operations involving complex numbers. 4. Solve applied problems using trigonometric principles involving right triangles. 5. Solve applied problems using systems of equations involving two and three variables. 6. Use technology to solve practical problems and communicate results. |

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| State Prerequisites | Take One Set: Set 1: DMA-010, DMA-020, DMA-030, DMA-040, DMA-050 Set 2: DMA-025, DMA-040, DMA-050 Set 3: DMA-025, DMA-045 Set 4: DMA-010, DMA-020, DMA-030, DMA-045 Set 5: MAT-003  Set 6: BSP-4003 |

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| State Corequisites | Take MAT-021 |

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| MEC-111\_2005SP | Machine Processes I | MEC-111 |

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| CIS Course ID | S20654 |
| Effective Term | Spring 2005 |
| End Term |  |

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| Class | 1 | Lab | 4 | Clinical | 0 | Work | 0 | Credit | 3 |

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| This course introduces shop safety, hand tools, machine processes, measuring instruments, and the operation of machine shop equipment. Topics include use and care of tools, safety, measuring tools, and the basic setup and operation of common machine tools. Upon completion, students should be able to manufacture simple parts to specified tolerance. |

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| State Prerequisites | None |

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| State Corequisites | None |

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| PHY-131\_2014FA | Physics-Mechanics | PHY-131 |

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| CIS Course ID | S23976 |
| Effective Term | Fall 2014 |
| End Term |  |

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| Class | 3 | Lab | 2 | Clinical | 0 | Work | 0 | Credit | 4 |

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| This algebra/trigonometry-based course introduces fundamental physical concepts as applied to engineering technology fields. Topics include systems of units, problem-solving methods, graphical analysis, vectors, motion, forces, Newton's laws of motion, work, energy, power, momentum, and properties of matter. Upon completion, students should be able to apply the principles studied to applications in engineering technology fields. |

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| State Prerequisites | Take One: MAT-121 or MAT-171 |

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| State Corequisites | None |

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| PSY-150\_1997SU | General Psychology | PSY-150 |

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| CIS Course ID | S10777 |
| Effective Term | Summer 1997 |
| End Term |  |

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| Class | 3 | Lab | 0 | Clinical | 0 | Work | 0 | Credit | 3 |

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| This course provides an overview of the scientific study of human behavior. Topics include history, methodology, biopsychology, sensation, perception, learning, motivation, cognition, abnormal behavior, personality theory, social psychology, and other relevant topics. Upon completion, students should be able to demonstrate a basic knowledge of the science of psychology. |

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| State Prerequisites | None |

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| State Corequisites | None |

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| MNT-110\_2013FA | Intro to Maint Procedures | MNT-110 |

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| CIS Course ID | S23528 |
| Effective Term | Fall 2013 |
| End Term |  |

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| Class | 1 | Lab | 3 | Clinical | 0 | Work | 0 | Credit | 2 |

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| This course covers basic maintenance fundamentals for power transmission equipment. Topics include equipment inspection, lubrication, alignment, and other scheduled maintenance procedures. Upon completion, students should be able to demonstrate knowledge of accepted maintenance procedures and practices according to current industry standards. |

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| Competencies |
| Student Learning Outcomes 1. Identify and demonstrate safe practices and procedures with tools, materials and industry accepted test equipment covered in the course. 2. Identify and demonstrate use of hand tools. 3. Identify grades of bolts and fasteners and demonstrate proper tightening techniques 4. Describe the operation of and assemble mechanical power transmissions and systems. 5. Identify bearings, seals, gaskets, and packing material and demonstrate appropriate assembly techniques. 6. Perform preventative and predictive maintenance and mechanical troubleshooting. |

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| State Prerequisites | None |

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| State Corequisites | None |

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| SOC-210\_1997SU | Introduction to Sociology | SOC-210 |

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| CIS Course ID | S11919 |
| Effective Term | Summer 1997 |
| End Term |  |

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| Class | 3 | Lab | 0 | Clinical | 0 | Work | 0 | Credit | 3 |

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| This course introduces the scientific study of human society, culture, and social interactions. Topics include socialization, research methods, diversity and inequality, cooperation and conflict, social change, social institutions, and organizations. Upon completion, students should be able to demonstrate knowledge of sociological concepts as they apply to the interplay among individuals, groups, and societies. |

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| State Prerequisites | None |

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| State Corequisites | None |

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| WLD-112\_1997SU | Basic Welding Processes | WLD-112 |

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| CIS Course ID | S10926 |
| Effective Term | Summer 1997 |
| End Term |  |

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| Class | 1 | Lab | 3 | Clinical | 0 | Work | 0 | Credit | 2 |

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| This course introduces basic welding and cutting. Emphasis is placed on beads applied with gases, mild steel fillers, and electrodes and the capillary action of solder. Upon completion, students should be able to set up welding and oxy-fuel equipment and perform welding, brazing, and soldering processes. |

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| State Prerequisites | None |

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| State Corequisites | None |