Engineering Technology

ET 100 Computer Aided Drafting and Design

3.0 units

Acceptable for credit: Transfer to UC, CSU

An introduction to computer-aided drafting and design (CADD) which covers operation of a computer graphics terminal (specifically AutoCAD) to create, modify, delete, transfer, and plot graphic files used to produce complete engineering drawings. (Fall, Spring) (Letter Grade or Pass/No Pass)

ET 104 Introduction to Robotics and Mechatronics

3.0 units

Acceptable for credit: Transfer CSU

An introduction to robotic control applications. Basic electronics including digital, analog, and microcontroller devices, sensors and transducers, and actuators will be emphasized for automation control. Topics include Basic, Assembly and C language programming for robotic control; interfacing of indicators, switches, sensors and transducers; controlling motion and motors; monitoring and measurement of rotation; measuring light, temperature and conductance; application of navigation and measurement techniques; remote control applications; mechanical systems; and the control of frequency and sound. This course is not open to students who are enrolled in or have received credit for CEL 104 or EL 104. (Fall, Spring) (Letter Grade Only)

ET 117 Print Reading and Interpretation

3.0 units

Acceptable for credit: Transfer CSU

An introductory class where students will learn to read engineering drawings, evaluate print specifications, recognize orthographic views and visualize the actual objects or projects shown in the illustration. This course is not open to students who are enrolled in or have received credit for, AB 330, AT 330, ET 330, MT 330, or AT/AB/MT 117. (Fall, Spring) (Letter Grade or Pass/No Pass)

ET 128 Intro to Renewable Energy

3.0 units

Acceptable for credit: Transfer CSU

Prerequisite: CEL 104 - Introduction to Robotics and Mechatronics ; or EL 104 or ET 104

A study of the principles behind energy generation and conversion that can be applied to modern electrical, mechanical, and chemical devices that use or produce power. Special emphasis will be given to the study of electricity as a renewable energy source. This course is not open to students who are enrolled in or have received credit for EL 128 or CEL 128. (Letter Grade Only)

ET 131 Programmable Logic Controllers and Control Design

3.0 units

Acceptable for credit: Transfer CSU

Prerequisite: EL 125 - Digital Devices and Circuits

A study of the purpose and operating features of a programmable logic controller (PLC). Topics include PLC terminology, architecture, input/output modules, memory, commands for internal relays, on/off timers, up/down counters, use of subroutines, program control, and math instructions. Relay schematics, ladder logic diagrams, and programming of logic controllers are emphasized. Sensing devices and time-driven process sequences will be studied and integrated into control systems. This course is not open to students who are enrolled in or have received credit for CEL 131 or EL 131. (Letter Grade Only)

ET 133 Mechatronic Systems 1

3.0 units

Acceptable for credit: Transfer CSU

Prerequisite: CEL 104 - Introduction to Robotics and Mechatronics or EL 104 or ET 104

This is a hands-on mechatronic systems course that focuses on the electro-mechanical concepts (mechanics, electronic, and programming) of automated systems. Emphasis is placed on how industrial grade sensors and transducers function and upon how they are interfaced into control systems. Study topics include: transducers and sensors for light, heat, motion, pressure, and position control; switching devices; input and output signal conditioning; continuous, closed-loop, and proportional integral derivative process control; and safety. This course is not open to students who have received credit for or are enrolled in CEL 133 or EL 133. (Letter Grade Only)

ET 139 Electrical Power, Motors, and Controls

3.0 units

Acceptable for credit: Transfer CSU

Prerequisite: EL 122 - Electronic Devices and Circuits ; and EL 125 - Digital Devices and Circuits

A study of electronics, signal communication and power technology that support efficient manufacturing processes for various industries. Topics include motors, their drives and controls, power electronics, PLCs, and communications networks used to monitor industrial processes. This course is not open to students who are enrolled in or have received credit for CEL 139 or EL 139. (Letter Grade Only)

ET 140 Engineering Drawing

3.0 units

Acceptable for credit: Transfer CSU

Prerequisite: ET 100 - Computer Aided Drafting and Design

The principles and application of engineering drawing, including orthographic projections, freehand sketching, pictorial drawings, engineering lettering, dimensioning, sections, auxiliary, surface finish, standard and geometric tolerancing, threads, and fasteners are the core of this course. A computer aided drafting system (CAD) will be used extensively by the student to complete the requirements of this course. (Fall) (Letter Grade Only)

ET 145 Advanced Engineering Drawing

3.0 units

Acceptable for credit: Transfer CSU

Prerequisite: ET 140 - Engineering Drawing

Use of advanced technical drawing techniques on a CADD system to solve design component problems requiring details and assemblies. The course covers freehand sketching to develop ideas, fabrication and working drawings dimensioned

to ANSI standards, including tolerances, title blocks, change orders, symbols and notes. Use of handbooks, ordinances, codes, selection of hardware and materials will be incorporated in each student's individual project. (Fall, Spring) (Letter Grade or Pass/No Pass)

ET 160 Digital Tools in Architecture

3.0 units

Acceptable for credit: Transfer CSU
Advisories: ARCH 111 - Architectural Graphics & Design I
Introduces computer design and presentation skills for architecture students. Topics include image editing, page layout and 3D modeling. This course is not open to students who are enrolled in or have received credit for Architecture 160. (Letter Grade or Pass/No Pass)

ET 162 Fluid Power and Control

2.0 units

Acceptable for credit: Transfer CSU
An introduction to the generation, control and basic applications of hydraulics and pneumatics force and motion systems. Topics include safety, properties of and forces in liquids, pumps, motors, valves, reservoirs, strainers, filers, accumulators, basic diagramming, system design and troubleshooting. This course is not open to students who are enrolled in or have received credit for CEL 162 or EL 162. (Letter Grade Only)

ET 189 Independent Projects in Engineering Technology

1.0 - 3.0 units

Acceptable for credit: Transfer CSU
Courses for students capable of independent work who demonstrate the need or desire for additional study beyond the regular curriculum. Enrollment allows students to pursue activities such as directed field experience, search or development of skills and competencies under faculty advisement and supervision. Independent Projects may be earned in most disciplines. Students wishing to enroll in Independent Projects should contact the appropriate instructor identified in the class schedule. If the project proposed is acceptable to that instructor, a contract will be issued no later than the end of the second week of the semester. Units are awarded depending upon satisfying performance and the amount of time committed by the students to the course. Allowable units vary according to discipline, and are based on the following formula: 1 unit - 48 hours per semester 2 units - 96 hours per semester 3 units - 144 hours per semester (Letter Grade or Pass/No Pass)

ET 370 SkillsUSA

3.0 units

Acceptable for credit: D - Credit - Degree Applicable
Repeatable: 3.00
SkillsUSA is a partnership of students, teachers and industry working together to ensure America has a skilled workforce. This SkillsUSA course prepares students for employment and inter-collegiate competition in Career Technical Education. Students will learn to plan projects, work in teams, solicit community support and develop a range of skills valued by employers. Students registered for this class may not register for AB 370, ARCH 370, AT 370, EL 370, MT 370 or WLDT 370 during the same semester. Participation in the SkillsUSA competition is required. This course may be repeated up to three times for credit with different competitions. (Letter Grade or Pass/No Pass)

ET 389 Independent Projects

0.0 units

Acceptable for credit: D - Credit - Degree Applicable
Acceptable for credit: CSU, UC-Determined after admission
Courses for students capable of independent work who demonstrate the need or desire for additional study beyond the regular curriculum. Enrollment allows students to pursue activities such as directed field experience, research, or development of skills and competencies under faculty advisement and supervision. Independent projects may be earned in most disciplines. Students wishing to enroll in Independent Projects should contact the appropriate instructor identified in the class schedule. If the project proposed is acceptable to that instructor, a contract will be developed. All contracts for these classes must be completed and submitted to the Records Office no later than the end of the second week of the semester. Students may enroll for any combination (unit value) of Independent Projects 189 and/or 389 for a total of four semesters in a specific discipline. Units are awarded depending upon satisfactory performance and the amount of time committed by the student to the course. Allowable units vary according to discipline, and are based on the following formula: 1 unit - 48 hours per semester 2 units - 96 hours per semester 3 units - 144 hours per semester (Letter Grade or Pass/No Pass)