TECHNOLOGY-RELATED COURSES (TECH)

TECH 080 F Federal Aviation Administration Drone Pilot Test Preparation 1 Unit

18 hours lecture per term. This course reviews and prepares students to take the Federal Aviation Administration's initial aeronautical knowledge test, and help complete FAA Form 8710-13 for a remote pilot certificate, through lecture, discussion and individual flying of drones. This course will help guide students on basic aeronautics and operations as they pertain to drone piloting.

TECH 081 F Technical Mathematics I 3 Units

54 hours lecture per term. This course covers the use of elementary algebra, geometry, and right triangle trigonometry in the solution of practical problems related to trade and technical areas. This course emphasizes the use of electronic calculators to do the computation. (Degree Credit)

TECH 082 F Technical Mathematics II 3 Units

Prerequisite(s): TECH 081 F with a grade of C or better.

54 hours lecture per term. This course covers the study of more advanced algebra, trigonometry, and elementary statistics in the solution of technical problems. This course does not transfer to CSU. (Degree Credit)

TECH 088 F Technical Science 3 Units

54 hours lecture per term. This is a course in the fundamental principles of physics, mechanics, heat, light, and strength of materials as applied to practical shop problems. (Degree Credit)

TECH 095 F FPV Drone Piloting 1 Unit

9 hours lecture and 27 hours lab per term. This course will introduce first person view (FPV) drone piloting skills with hands-on flying and lecture. The course will also introduce students to basic maintenance and repair of small quad copter drones used in FPV. Piloting skills for cinematic, freestyle, and racing of FPV aerial quads will be taught and developed throughout this course. (Degree Credit)

TECH 108 F Manufacturing Processes 3 Units

54 hours lecture per term. This course is a general overview course which gives an insight into manufacturing processes and develops an appreciation of the latest manufacturing techniques, materials, as well as skills used in the metal, plastic, and other manufacturing industries. This course also reviews engineering materials and manufacturing processes from the viewpoint of the manufacturer and designer perspective. (CSU) (Degree Credit)

TECH 127 F Industrial Safety 2 Units

36 hours lecture per term. This course will cover the basics of safety as it applies to all majors in Technology Education and Engineering. It will include scope, history, objectives, responsibility, and organization of safety as it relates to common industrial equipment and processes. Various OSHA standards and regulations will be covered including general industry regulations such as 29 CFR 1910.(CSU) (Degree Credit)

TECH 131 F Basic Electricity and Basic Electronics 2 Units

18 hours lecture and 54 hours lab per term. This course provides the student with introductory knowledge of electricity and electronics to prepare for further studies in entertainment technology. This course involves lecture, discussion, and project-based learning projects. This course is required of all Theme Park Technician Certificate students. (CSU) (Degree Credit)

TECH 132 F Basics of Electric Motor Controls 2 Units

Prerequisite(s): TECH 131 F with a grade of C or better.

18 hours lecture and 54 hours lab per term. This course provides the student with introductory knowledge of electric motor controls and systems to prepare for further studies in entertainment technology. This course involves lecture, discussion, and project-based learning projects. This course is required of all Theme Park Technician Certificate students. (CSU) (Degree Credit)

TECH 135 F Introduction to Programmable Logic Controllers 2 Units

Prerequisite(s): TECH 131 F with a grade of C or better.

18 hours lecture and 54 hours lab per term. This course introduces the technical theater student to PLC technology utilized in the entertainment industry in both theater and theme parks. This career technical education course involves lecture, discussion, and project-based learning and is required of all Theme Park Technician Certificate students. (CSU) (Degree Credit)

TECH 136 F Computer Integrated Manufacturing and Advanced PLC 3 Units

Prerequisite(s): TECH 135 F, with a grade of C or better.

36 hours lecture and 54 hours lab per term. This course explores advanced technologies in programmable logic controllers for the entertainment industry with focus on theater show control systems and system integration, set up and troubleshooting. This career technical education course involves, lecture, discussion, and project based learning and is required of all theme park technician certificate students. (CSU) (Degree Credit)

TECH 137 F Electronic Instrumentation and Networking 2 Units

Prerequisite(s): TECH 131 F and TECH 136 F, with a grade of C or better.

18 hours lecture and 54 hours lab per term. This entertainment industry technology course explores process control, measurements, and data transmission. It includes hands-on project work, troubleshooting, and applied theme park and entertainment workplace situations. This course is required of all Theme Park Technician students. (CSU) (Degree Credit)

TECH 138 F Electronic Instrumentation and Networking II 2 Units

Prerequisite(s): TECH 137 F with a grade of C or better

Advisory: TECH 131 F

18 hours lecture and 54 hours lab per term. This capstone course builds on the knowledge acquired in TECH 137 F to develop advanced competencies in electronic show control, instrumentation, networking for the entertainment industry and theme parks. This course is required of Theme Park CTE certificate students. (CSU) (Degree Credit)

TECH 140 F Basic Drone Maintenance and Repair 3 Units

36 hours lecture and 54 hours lab per term. This course provides the student with introductory knowledge of maintenance and repair of small uncrewed aerial vehicles (sUAVs) and prepares them for further studies and/or employment. The course involves, lecture, discussion, and project-based learning projects. (Degree Credit) (CSU)

TECH 150 F Basic Drone Piloting 2 Units

36 hours lecture and 9 hours lab per term. This course will train students on the principles, guidelines and regulations regarding effective piloting of unmanned aerial vehicles. Safety and ethics associated with drone flight as well as the law will also be stressed. (Degree Credit) (CSU)

TECH 151 F Applied Drone Piloting 3 Units
36 hours lecture and 54 hours lab per term. In this course, students will learn the basics of piloting an unmanned aerial system, or drone, and how it can be applied in their preferred career (Administration of Justice, Construction, Cinematography, Environmental Science, Geography, Journalism, Photography, Physical Education, Real Estate, Welding, and many others). Students will gain industry-specific experience with UAS. (CSU) (Degree Credit)

TECH 155 F Applied Drone Lab 2 Units
Advisory: CIS 201 F or ENGR 105 F or TECH 131 F.
18 hours lecture and 54 hours lab per term. In this course, students will learn the basics of unmanned systems and how they work. Students will create a functioning aerial, terrestrial or submersible system. (Degree Credit) (CSU)

TECH 158 F Advanced Drone Piloting Skills 2 Units
Prerequisite(s): TECH 150 F or TECH 151 F, with a grade of C or better.
18 hours lecture and 54 hours lab per term. In this course, students will learn advanced drone piloting techniques including multiple drone operations, field operations, night flying, first person view (FPV) piloting, and others. (CSU) (Degree Credit)

TECH 159 F Counter Drone Operations 2 Units
36 hours lecture per term. In this course, students will learn the principles and techniques regarding counter drone operations for identification and security. Regulations and laws regarding drone operations will be covered. (CSU) (Degree Credit)

TECH 160 F Infrared Thermography 2 Units
Advisory: TECH 150 F.
36 hours lecture per term. This course focuses on how thermography is used for a variety of conditions including monitoring/predictive maintenance and identification. Students will learn how to collect, interpret and analyze infrared data by using a drone and aerial imaging. (CSU) (Degree Credit)

TECH 165 F Aerial Mapping and Photogrammetry 3 Units
45 hours lecture and 27 hours lab per term. This course introduces students to the skills in data acquisition, data processing techniques for mapping and by using Pix4D. Students will learn principles of Unmanned Aerial System (UAS) and how to use them to acquire data, create mapping images, point clouds, overlays, and 3D meshes. (CSU) (Degree Credit)

TECH 199 F Technology and Engineering: Independent Study I 1-3 Units
54-162 hours lab per term. This course is designed for advanced students who wish to increase their knowledge of technical areas through individual study. Independent lab research problems with staff supervision may be approved. Projects with written reports or outside reading with written reports may be required. (CSU) (UC review required.) (Degree Credit)

TECH 260 F Multispectral and Hyperspectral Sensing with Drones 3 Units
45 hours lecture and 27 hours lab per term. This course will teach students how to capture and gain experience in the proper use of multispectral and hyperspectral imaging methods of remote imaging for various applications including agriculture, inspection, surveying, and many others. (Degree Credit) (CSU)

TECH 295 F Internship in Technology I 2-4 Units
18 hours lecture and 54-162 hours of supervised employment, paid or unpaid internship per term. This course offers career development opportunities for students and industry professional who need to strengthen or broaden their skills to retain their current position or wish to advance in their current careers. Students obtain vocational learning opportunities through employment/internships in the tech field. This course may be taken four times for credit. (Degree Credit) (CSU)

TECH 296 F Internship in Technology II 2-4 Units
Prerequisite(s): TECH 295 F with a grade of C or better.
18 hours lecture and 60-180 hours supervised unpaid internship or 75-225 hours paid internship per term. This course will further prepare students for the next level of career exploration. Topics will include networking, interviewing skills, and clarifying employer/client expectations. (Degree Credit) (CSU)

TECH 299 F Technology and Engineering Independent Study II 1-3 Units
54-162 hours lab per term. This course is designed for advanced students who wish to increase their knowledge of technical areas through individual study. Independent lab research problems with staff supervision may be approved. Project with written report or outside reading with written report is required. (CSU) (UC review required.) (Degree Credit)