Fire Technology

Fire Technology

Program Description
This program was established under direction of Solano County fire protection agencies and offers both an intensive training course culminating in a Certificate of Achievement and a well-rounded educational program leading to the Associate in Science Degree. Instructors in this program are experienced members of the fire service field. In addition, a Fire Technology Academy for recently recruited fire service personnel and pre-service students is conducted periodically. The curriculum consists of courses selected from the regular fire technology course offerings.

Certificate of Achievement and Associate in Science Degree
A Certificate of Achievement can be obtained upon completion of the 30-unit major. The Associate in Science Degree can be obtained upon completion of the 30-unit major, general education requirements, and electives. All courses in the major must be completed with a minimum grade of C or a P if the course is taken on a Pass/No Pass basis.

Program Outcomes
Students who complete the Fire Technology Certificate of Achievement/Associate Degree will be able to:
1. Identify minimum qualifications and entry-level skills for fire fighter hiring.
2. Demonstrate knowledge of fire service history, culture, and diversity.
3. Demonstrate the ability to analyze, appraise and evaluate fire and emergency incidents and identify components of emergency management and fire fighter safety.
4. Identify and comprehend laws, regulations, codes, and standards that influence fire department operations, and identify regulatory and advisory organizations that create and mandate them, especially in the areas of fire prevention, building codes and ordinances, and firefighter health and safety.
5. Analyze the causes of fire; determine extinguishing agents and methods; differentiate the stages of the fire and compare methods of heat transfer.
6. Calculate flow requirements for fire apparatus; diagram a pump and pluming schematic for fire apparatus; and apply mathematic formulae to hydraulics problems.
7. Identify and describe common types of building construction and conditions associated with structural collapse and fire fighter safety.
8. Differentiate between fire detection and fire suppression systems; design and diagram a wet and dry fire protection system; and identify alarm system components and their operations.

REQUIRED COURSES .... **Units**
FIRE 050 Principles of Emergency Services 3
FIRE 051 Fire Behavior & Combustion 3
FIRE 053 Fire Prevention Application................................ 3
FIRE 054 Fire Protection Systems 3
FIRE 056 Building Construction as it Relates to
   the Fire Service 3
FIRE 101 Principles of Fire and Emergency Services
   Safety and Survival.. 3
12 Units from Recommended Electives 12
   Required Major Total Units 30

Recommended Electives: (select 12 Units) .... **Units**
FIRE 140 Fire Technology Academy.................................. 24
EMT 112 Emergency Medical Technician (Basic) 7
EMT 128 Emergency Medical Responder.......................... 3
OCED 090 Occupational Work Experience 1-8

Solano General Education.. 21
Electives (as needed to reach 60 units)............................ 9
   Total Degree Units Solano GE.................................. 60

This is a Gainful Employment Program. For additional information, please visit
http://www.solano.edu/gainful_employment/ and select "Fire Technology."

Fire Technology

FIRE 050   Principles of Emergency Services   3.0 Units
Course Advisory: SCC minimum English standard.
Transferable to CSU
Hours: 48-54 lecture.
An overview of fire protection; career opportunities in the fire service and related fields; history of fire service and fire protection; fire organization and management; function of public and private protection services; fire departments as part of local government; fire prevention and investigation; building construction; specific fire protection functions; fire and emergency service apparatus and facilities; and introduction to fire protection systems. This is a Fire Technology core course and must be completed with a minimum grade of C in order to receive an Associate Degree or Certificate of Achievement in Fire Technology.

FIRE 051   Fire Behavior & Combustion   3.0 Units
Course Advisory: SCC minimum English standard.
Transferable to CSU
Hours: 48-54 lecture.
Provides the student with fundamental information and knowledge of the physical and chemical characteristics of matter, fire, hazardous materials, weapons of mass destruction identification and basic extinguishment theory. This is a Fire Technology core course and must be completed with a minimum grade of C in order to receive an Associate Degree or Certificate of Achievement in Fire Technology. Field Trip may be required.

FIRE 053   Fire Prevention Applications   3.0 Units
Course Advisory: SCC minimum English standard.
Transferable to CSU
Hours: 48-54 lecture.
Fundamental information regarding the history and philosophy of fire prevention, organization and operation of a fire prevention bureau. It will also discuss the use of fire codes, identification and correction of fire hazards, and the relationship of fire prevention to fire safety education and detection and suppression systems. This is a Fire Technology core course and must be completed with a minimum grade of C in order to receive an Associate Degree or Certificate of Achievement in Fire Technology.

FIRE 054   Fire Protection Systems   3.0 Units
Course Advisory: SCC minimum English standard.
Transferable to CSU
Hours: 48-54 lecture.
Provides information relating to the features of design and operation of fire detection and alarm systems and heat and smoke control systems. It will discuss special protection and sprinkler systems, water supply for fire protection, and portable fire extinguishers. This is a Fire Technology core course and must be completed with a minimum grade of C in order to receive an Associate Degree or Certificate of Achievement in Fire Technology.

FIRE 056   3.0 Units
Building Construction as it Relates to the Fire Service
Course Advisory: SCC minimum English and Math standards.
Transferable to CSU
Hours: 48-54 lecture.
Intended to provide basic information about how buildings are designed and constructed. Through a basic understanding of building construction, the student will acquire an understanding of how buildings will behave under fire conditions. This course will aid in decision making related to fire prevention and fire control with the goal of successful fire ground operations. This course must be completed with a minimum grade of C in order to receive an Associate Degree or Certificate of Achievement in Fire Technology.

FIRE 101   3.0 Units
Principles of Fire and Emergency Services Safety and Survival
Course Advisory: ENGL 001 and SCC minimum Math standard.
Hours: 48-54 lecture.
Introduction to basic principles and history related to the firefighter life safety initiatives, focusing on the need for cultural and behavior change throughout the emergency services.

FIRE 140   Fire Technology Academy   24.0 Units

Prerequisite: A minimum grade of C in FIRE 050, FIRE 101, EMT 128 and
*   a passing grade on the CPAT or PACK test as evidenced by a certificate*
*   of completion.*
Hours: 224-252 lecture, 480-540 lab.

Containing the contents of FIRE 115, 123, 124, 125, 126, 127, 129, 130, 131, and 83 and Certification of State Fire Marshal courses of I-200, Fire Control I, Fire Control 3B, Water/Swiftwater Rescue Awareness, Confined Space Awareness, Rescue Systems I, Trench Rescue, Low Angle Rescue, American Red Cross EMS First Responder for the Professional, and State Fire Marshal Certified wildland courses of S-190, S-130, S-131, S-134, L-180 and CALFIRE 67 Hour Basic Course. Successful students who maintain at least an 80% score on each unit and subject covered in this course may become eligible for certification by the State Fire Marshal as a Firefighter I pending a required internship with a recognized fire entity. NOTE: Additional fees are associated with this course. Fees may include and are not limited to purchase of uniforms, physical fitness attire, State Fire Marshal certificates, and other related costs. The Solano College Fire Technology Program and its appurtenant Firefighter I Academy is a California State Fire Marshal Accredited Regional Training Program. Field trips may be required. Students will be required to rent, at their cost, all or portions of personal protective equipment (PPE) needed for academy events. If a student is sponsored by a fire department and said department provides the student with necessary PPE, he/she will not be required to rent PPE.