

# Fire Science Technology (FST)

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## Courses

### **FST-101. Introduction to Fire Science. 3 Credits.**

LECT 3 hrs

This class is considered to be the foundation course for all students of Fire Science Technology. Students are introduced to the concept of the systems approach to fire protection by presenting the components of modern fire department responsibility including emergency incident management, public education, training, resource management and customer service. Students who have completed their Fire Fighter 1 will receive credit for this course.

### **FST-102. Fire Prevention and Related Codes. 3 Credits.**

LECT 3 hrs

This course provides students with basic knowledge of federal, state and local codes related to building construction, fire and life safety requirements, and other codes. Includes New Jersey state fire safety regulations and related state requirements. National Fire Protection Association (NFPA) and other standards related to fire protection and life safety are examined. Students who have completed their Fire Fighter 1 will receive credit for this course.

### **FST-103. Fire Fighting Tactics and Strategy. 3 Credits.**

LECT 3 hrs

Analysis of the basic rules of fire fighting strategy, defining engine company responsibilities, defining ladder company functions, correlating mutual aid fires and general fire problems. Studies the effective management of suppression forces at various fire situations. Includes consideration of pre-fire planning, problem identification and solution implementation.

### **FST-106. Fire Protection Systems. 3 Credits.**

LECT 3 hrs

A study of the nature of public and private fire protection with an emphasis on analysis of systems of fire detection, fire alarm, fire communications, water distribution networks, fire service, hydraulics and fire suppression.

**Prerequisites:** Permission of department chair.

### **FST-107. Fire Apparatus Specifications, Inspections and Maintenance. 3 Credits.**

LECT 3 hrs

This course covers the principles of care, maintenance and operation of fire apparatus and pumps. Includes pump construction and accessories, pumping techniques, power development and transmission. Also includes driving, troubleshooting and producing effective fire streams.

### **FST-201. Fire Service Management. 3 Credits.**

LECT 3 hrs

This course introduces the student to the principles of personnel management through the use of effective leadership techniques. Topics include overview of the fire service as an organization and the officer's role in it, interpersonal communications, personality typing, skill development, leadership techniques, group dynamics and principles of fire company management.

**Prerequisites:** FST-101 or equivalent.

### **FST-202. Hazardous Materials. 3 Credits.**

LECT 3 hrs

A comprehensive study of the physical, chemical and toxicological characteristics of hazardous materials. This course includes basic methods of recognition and identification based upon the chemical and physical properties of hazardous materials, basic safety procedures when utilizing specific types of protective clothing and equipment, and basic tactical information relating to scene management.

**Prerequisites:** MAT-007 or passing score on the algebra section of the placement test.

### **FST-204. Fire Protection, Building Construction. 3 Credits.**

LECT 3 hrs

This course introduces basic construction principles and the special characteristics of wood and ordinary construction as they concern the fire service. Primary emphasis is on improving the fire officer's ability to ensure firefighter safety by recognizing common causes and indicators of failure and other hazards relating to building construction. Course material enables the fire officer to better predict the overall reaction of a building to fire conditions.

### **FST-205. Fire Investigation. 3 Credits.**

LECT 3 hrs

An in-depth course that defines successful methods for conducting fire investigations. Specific topics include basic chemistry of fire, point of origin, fire cause (both accidental and incendiary), motivation of the fire setter, fire scene investigations, evidence collection, photography, follow-up investigation and court testimony.

### **FST-206. Fire Hydraulics. 3 Credits.**

LECT 3 hrs

This course is a concentrated study in the application of mathematics and physics to the properties of water as used in fire suppression operations. Classic hydraulics formulas are used to solve problems for flow velocity, nozzle reaction, friction loss, water distribution systems, fire flow testing, fire service pumps and fire ground hose evolutions.

**Prerequisites:** MAT-007 or passing score on the algebra section of the placement test.

### **FST-207. Emergency Medical Technician. 6 Credits.**

LECT 4 hrs LAB 4 hrs

This course is designed to prepare the basic Emergency Medical Technician in accordance with the United States Department of Transportation curriculum and the New Jersey Department of Health guidelines. This course covers an introductory survey of emergency medical services including medical, legal/ethical aspects, role of the Emergency Medical Technician, patient assessment, care of wounds and fractures, airway maintenance, medical and environmental emergencies, patient transportation, emergency childbirth and basic extrication. After completion of this course, the student will be eligible to take the National Registry Examination for certification as an Emergency Medical Technician-Basic. Students who are already registered EMT-Basic in New Jersey will be given credit for this course.

**FST-210. Current Issues in Fire Science/ Capstone Experience.**

**3 Credits.**

LECT 3 hrs

A review of the current problems affecting the fire service with particular emphasis on resource allocation, planning and fiscal constraints. The capstone experience requires the student to author and present a scholarly research paper on a topic covered in this course. Students must have completed 40 credit hours in the Fire Science Curriculum or have permission of department chair.

**Prerequisites:** Permission of department chair.