

# FIRE SCIENCE TECHNOLOGY CERTIFICATE

30 Semester Credit Hours; Curriculum: 0181

This program provides students seeking a career in the fire service with high level of understanding of the technical aspects of firefighting and fire service management. The program will also prepare fire personnel to become future fire officers by increasing their understanding of fire science technology.

Code	Title	Hours
<b>Courses for a Certificate</b>		
FIR 101	Introduction To Fire Science	3
FIR 121	Fire Fighting Tactics I	3
FIR 131	Hazardous Materials - First Responder	3
FIR 201	Fire Prevention Principles I	3
FIR 205	Building Construction	3
FIR 209	Fire Hydraulics	3
FIR 211	Fire Prevention Principles II	3
FIR 217	Fire Department Administration I	3
Select courses to total a minimum of six credit hours from the following electives:		6
FIR 102	Firefighter II / Basic Firefighter Part I	
FIR 103	Firefighter II / Basic Firefighter, Part II	
FIR 220	Emergency Medical Technician <sup>1</sup>	
FIR 221	Emergency Medical Technician-Paramedic I	
FIR 222	Emergency Medical Technician-Paramedic II	
FIR 223	Emergency Medical Technician-Paramedic III	
FIR 224	Emergency Medical Technician-Paramedic IV	
FIR 290	Topics in Fire Science Technology	
FME 107	Blueprint Reading for Building Trades	
<b>Total Hours</b>		<b>30</b>

<sup>1</sup> Students who successfully complete FIR 220 are eligible for Emergency Medical Technician - Basic Certificate.

## Program Learning Outcomes

1. Discuss the history, scope, purpose, and organizational structure of the fire service.
2. Identify the primary responsibilities of personnel in the varied roles in the fire service.
3. Discuss and explain the process of conducting a complete incident size-up and performing accurate risk analysis at various emergencies incidents.
4. Discuss and explain fire behavior as it pertains to fire ignition, growth and development.
5. Analyze strategy and tactical operations of emergency incidents, discuss decision-making and incident outcomes.
6. Evaluate after action reports (AAR) to revise strategic and tactical objectives. Analyze the corrective actions (lessons learned).
7. Discuss the impact of management, emergency operations and work force objectives as they apply to incidents.
8. Identify and explain the 16 life safety initiatives as identified in the FESHE Associate Core Curriculum.

9. Define and describe the need for cultural and behavioral change within emergency services as they relate to safety, leadership, supervision, accountability and personal responsibility.
10. Explain emergency operations as it pertains to leadership and safety.
11. Explain and discuss water flow, friction loss and water appliances, and how they relate to fire hydraulics.
12. Describe the impact of the types of building construction as it relates to fire behavior.
13. Describe and explain the methodology for examining a fire scene to determine origin and cause.
14. Describe and evaluate the benefits and limitations of fire protection and detection systems in various types of structures.
15. Evaluate and discuss the role of fire prevention and public education programs as they relate to the national fire problem.
16. Describe the fire and life safety inspection practices and explain the inspection procedures.
17. Demonstrate the utilization of guidebooks, SDS, and other reference materials to determine an initial course of action for an incident involving hazardous materials.