

FIRE SCIENCE TECHNOLOGY A.A.S.

60 semester credit hours; Curriculum: 0180

The degree is designed to prepare students for a career in the fire service or in the emergency medical system.

Note: Refer to IAI General Education Courses page for guidelines on General Education course selection.

Code	Title	Hours
General Education Requirements		
<i>Area A - Communications</i>		
EGL 101	Composition I	3
Select one of the following:		3
EGL 102	Composition II	
EGL 111	Introduction to Business and Technical Writing (recommended)	
EGL 212	Technical Writing Applications	
SPE 103	Effective Speech	
<i>Area B - Mathematics</i>		
Select one course from Area B (Mathematics) or Area C (Science)		0-3
MAT 114	Applied Mathematics I (recommended)	
<i>Area C - Science</i>		
Select one course from Area B (Mathematics) or Area C (Science)		0-3
<i>Area D - Social and Behavioral Sciences</i>		
Select one course from a social or behavioral science discipline		3
<i>Area E - Humanities/Fine Arts</i>		
Select one course from a humanities or fine arts discipline		3
<i>Area F - Global Studies</i> ¹		
Select one course that satisfies Global Studies requirement		0-3
<i>Area G - U.S. Diversity Studies</i> ²		
Select one course that satisfies U.S Diversity Studies requirement		0-3
Select additional credits from Areas B, C, D, E, F or G if needed to meet 18-credit-hour minimum		0-3
Total Hours		18

¹ Students may take a Global Studies course that satisfies both Area F and another Area requirement.

² Students may take a U.S. Diversity Studies course that satisfies both Area G and another Area requirement.

Code	Title	Hours
Major Requirements		
CHM 101 or FIR 130	Introductory Chemistry Chemistry of Hazardous Materials	3-4
FIR 101	Introduction To Fire Science	3
FIR 121	Fire Fighting Tactics I ¹	3
FIR 131	Hazardous Materials - First Responder	3
FIR 201	Fire Prevention Principles I ¹	3
FIR 205	Building Construction	3
FIR 209	Fire Hydraulics	3
FIR 211	Fire Prevention Principles II	3
FIR 217	Fire Department Administration I ¹	3

Select courses to complete the 60-credit-hour required total from any 14-15 FIR course or FME 107²

Total Hours **42**

¹ Course certified by the Illinois State Fire Marshal.

² A maximum of eight credit hours may be applied from the following electives: FIR 102, FIR 103, FIR 220, FIR 221, FIR 222, FIR 223, FIR 224, and FIR 290.

Program Learning Outcomes

- Describe and explain the history, scope, purpose, and organizational structure of the fire service.
- Identify and compare the primary responsibilities of personnel in the varied roles in the fire service.
- Analyze and revise the process of conducting an incident size-up and performing accurate risk analysis at emergency incidents.
- Evaluate and interpret fire behavior, building construction and fire protection systems as it pertains to fire ignition, growth, and development.
- Analyze, define and revise strategy and tactical decisions-making at emergency incidents.
- Formulate and support after action reports (AAR) to revise strategic and tactical objectives and analyze the corrective actions (lessons learned).
- Define and support the need for cultural and behavioral change within emergency services as they relate to safety, leadership, supervision, accountability, and personal responsibility.
- Explain emergency operations as it pertains to leadership and safety.
- Explain and discuss water flow, friction loss and water appliances, and how they relate to fire hydraulics.
- Analyze and assess the impact of the types of building construction as it relates to fire behavior.
- Describe and explain the methodology for examining a fire scene to determine origin and cause.
- Describe and evaluate the benefits and limitations of fire protection and detection systems in various types of structures.
- Support and justify the role of fire prevention and public education programs as they relate to the national fire problem.
- Describe the fire and life safety inspection practices and explain the inspection procedures.
- Formulate a response to incidents involving hazardous materials.
- Describe, explain, and interpret chemical and physical properties of hazardous materials.
- Discuss and synthesize fire service leadership and management skills.