

FIRE SCIENCE TECHNOLOGY

The Fire Science Technology program at Mount Wachusett Community College provides students an opportunity to earn an Associate of Science Degree in Fire Science Technology. During the course of study, students will develop an understanding of the complexities of fire and emergency services.

Notice to applicants who have attended the Massachusetts Firefighting Academy: you may be eligible for articulated credit. The following list details the courses included in the Articulation Agreement between the Massachusetts Firefighting Academy and MWCC's Fire Science Program. Please request a review of your eligibility when you apply to MWCC.

- Career Recruit Training or Call/Volunteer Training Program = FST155 & 159
- Fire Officer I Training = FST160
- 40 hr. Fire Investigation Program = FST163
- 40 hr. Motor Pump Operator = FST162
- Fire Prevention Officer Program = FST157
- Hazardous Materials TECHNICIAN Program = FST154

FIRE SCIENCE TECHNOLOGY DEGREE (FS)

The Fire Science Technology Degree provides relevant coursework in building construction, fire prevention, fire investigation, and more. The Fire Science program accepts certain courses in transfer from the Massachusetts Firefighting Academy. This program is for those working in the field, as well as those seeking careers in fire and emergency services. **MWCC has adopted the Fire and Emergency Services Higher Education (FESHE) Model curriculum. These courses follow the national curriculum recognized by the National Fire Academy.**

Year 1

		Credits
Fall		
ENG 101	College Writing I	3
MAT 126	Topics In Mathematics (or higher)	3
FST 155	Principles Emergency Services	3
FST 157	Fire Prevention	3
FST 159	Fire Behavior and Combustion	3
Spring		
ENG 102	College Writing II	3
FST 153	Fire Protection Systems	3
FST 154	Hazardous Materials Chemistry	3
FST 158	Principles of Firefighter Safety and Survival	3
Social Science Elective ¹		3
Year 2		
Fall		
HCC 111	Emergency Medical Technician I (Evening Only)	4
HCC 112	Emergency Medical Technician II (Evening Only)	4
FST 152	Strategy and Tactics	3
FST 160	Fire and Emergency Services Administration	3
FST 162	Fire Hydraulics and Water Supply	3
Spring		
FST 151	Building Construction	3
FST 161	Legal Aspects of Emergency Services	3
FST 163	Fire Investigation I	3
Liberal Arts and Sciences Elective ²		3-4
Humanities Elective ³		3
Total Credits:		62-63

¹ Social Science Electives: See Elective Courses by Abbreviation (<http://catalog.mwcc.edu/electivecoursesbyabbreviation/>).

² Liberal Arts and Sciences Elective options: EAS 126, BIO 101, BIO 103, EAS 110, PSY or SOC.

³ Humanities Electives: See Elective Courses by Abbreviation. (<http://catalog.mwcc.edu/electivecoursesbyabbreviation/>)

See Fire Science Technology program student learning outcomes and technical standards.

Campus

The Fire Science Technology Degree is a web-based program.

Student Success Tips

Students are strongly advised to sit for the National EMT Certification Exam immediately upon completion of HCC 111 and 112. Almost all Fire Departments require EMT certification.

Transfer Options

For transfer options, please click here (<http://catalog.mwcc.edu/academicresources/#transferinformationtext>). It is recommended that you also consult with your academic advisor.

Special Requirements

Technical standards must be met with or without accommodations.

Career Options/Earning Potential

For career options, please click here (<https://mwcc.lightcastcc.com/programs/fire-science-technology-associate-degree/166957/?region=North%20Central%20MA/Southwest%20NH&radius=>).

PROGRAM STUDENT LEARNING OUTCOMES FOR FS

Upon graduation from this program, students shall have demonstrated the ability to:

- Comprehend an overview of fire and emergency services career opportunities.
- Comprehend theories and fundamentals of how fires start and are controlled.
- Understand the 16 national firefighter life safety initiatives.
- Demonstrate knowledge of the principles of fire prevention.
- Comprehend local, state, and national standards that regulate emergency services.
- Use theory and practice relative to fire hydraulics in relation to fire suppression.
- Articulate fundamentals of the five types of building construction.
- Demonstrate fundamental knowledge of the principles of arson investigation.
- Comprehend the principles of hazardous materials chemistry.
- Understand emergency services ethics and leadership principles.
- Comprehend the features of various fire protection systems.
- Exhibit the use of principles specific to managing a fire or other type of emergency situation.

TECHNICAL STANDARDS FOR FS

Students entering this program must be able to demonstrate the ability to:

- Communicate and assimilate information either in spoken, printed, signed, or computer voice format.
- Gather, analyze, and draw conclusions from data.
- Those aspiring to become firefighters should familiarize themselves with the Commonwealth of Massachusetts Medical & Fitness Standards found at mass.gov

FST 151. Building Construction. 3 Credits.

This course provides the components of building construction related to firefighter and life safety. The elements of construction and design of structures are shown to be key factors when inspecting buildings, preplanning fire operations, and operating at emergencies. Prerequisite: FST 155 or permission of division dean.

FST 152. Strategy and Tactics. 3 Credits.

This course provides the principles of fire ground control through utilization of personnel, equipment, and extinguishing agents. Prerequisite: FST 159.

FST 153. Fire Protection Systems. 3 Credits.

This course provides information relating to the features of design and operation of fire alarm systems, water-based fire suppression systems, special hazard fire suppression systems, water supply for fire protection and portable fire extinguishers. Prerequisites: ENG 098, FYE 101, RDG 098, or placement.

FST 154. Hazardous Materials Chemistry. 3 Credits.

This course provides basic chemistry relating to the categories of hazardous materials including recognition, identification, reactivity, and health hazards encountered by emergency services. This course may have multiple required VR in person scheduled experiences. Prerequisites: ENG 098, FYE 101, RDG 098, or placement.

FST 155. Principles Emergency Services. 3 Credits.

This course provides an overview to fire protection and emergency services; career opportunities in fire protection and related fields; culture and history of emergency services; fire loss analysis; organization and function of public and private fire protection services; fire departments as part of local government; laws and regulations affecting the fire service; fire service nomenclature; specific fire protection functions; basic fire chemistry and physics; introduction to fire protection systems; introduction to fire strategy and tactics; life safety initiatives. This course may have multiple required VR in person scheduled experiences. Prerequisites: ENG 098, FYE 101, RDG 098, or placement.

FST 157. Fire Prevention. 3 Credits.

This course provides fundamental knowledge relating to the field of fire prevention. Topics include history and philosophy of fire prevention; organization and operation of a fire prevention bureau; use and application of codes and standards; plans review; fire inspections; fire and life safety education; and fire investigation. Prerequisites: ENG 098, FYE 101, RDG 098, or placement.

FST 158. Principles of Firefighter Safety and Survival. 3 Credits.

This course introduces the basic principles and history related to the national firefighter life safety initiatives, focusing on the need for cultural and behavior change throughout the emergency services. This course may have multiple required VR in person scheduled experiences. Prerequisites: ENG 098, FYE 101, RDG 098, or placement.

FST 159. Fire Behavior and Combustion. 3 Credits.

This course explores the theories and fundamentals of how and why fires start, spread, and are controlled. Prerequisites: ENG 098, FYE 101, RDG 098, or placement.

FST 160. Fire and Emergency Services Administration. 3 Credits.

This course introduces the student to the organization and management of a fire and emergency services department and the relationship of government agencies to the fire service. Emphasis is placed on fire and emergency service, ethics, and leadership from the perspective of the company officer. Prerequisite: FST 155.

FST 161. Legal Aspects of Emergency Services. 3 Credits.

The course will address the Federal, State, and local laws that regulate emergency services and include a review of national standards, regulations, and consensus standards. Prerequisites: ENG 098, FYE 101, RDG 098, or placement.

FST 162. Fire Hydraulics and Water Supply. 3 Credits.

This course provides a foundation of theoretical knowledge in order to understand the principles of the use of water in fire protection and to apply hydraulic principles to analyze and to solve water supply problems. Prerequisites: FST 155, MAT 092 or MAT 096, or placement.

FST 163. Fire Investigation I. 3 Credits.

This course is intended to provide the student with the fundamentals and technical knowledge needed for proper fire scene interpretations, including recognizing and conducting origin and cause, preservation of evidence and documentation, scene security, motives of the firesetter, and types of fire causes. Prerequisites: FST 151, FST 155, FST 159, or permission of division dean.