

# Fire Service Technology (FST)

---

## Fire Service Technology (FST)

The Fire Service Technology program at Cincinnati State prepares students for entry-level jobs in fire service as a firefighter/emergency medical technician (EMT). This program meets National Fire Protection Association standards and objectives for Firefighter 1 and Firefighter 2, using a combination of classroom education and hands-on training. Performance testing builds student confidence and enables mastery of the skills that are critical to good performance on the fireground and during emergency medical services incidents. Graduates of the program earn an Associate of Applied Science degree.

For hands-on fire training class eligibility, students must:

- Successfully perform and complete the Fire Cadet Fitness Evaluation.
- Complete the State Application for Admission to a Fire Training Course. This application screens for age, criminal convictions, and substance abuse that may disqualify students from state certification. Documentation must be provided on questionable cases.
- Have the Physical Exam Form (for firefighters) completed by a qualified physician.
- Obtain a current CPR card for healthcare providers.
- Complete Emergency Medical Technician Basic Training.
- Present copies of previous certifications held pertaining to fire fighting and emergency medical services.

The program is accredited by The Ohio Department of Public Safety, Department of Emergency Medical Services, P.O. Box 182073, 1970 West Broad Street, Columbus, OH 43218-2073, phone (614) 466-9447.

Graduates who complete an optional set of additional classes may continue their education with seamless transition to the University of Cincinnati to earn a bachelor's degree.

## Fire Service Leadership (FSTL)

The Fire Service Leadership program provides knowledge and skills to certified firefighters who are interested in furthering their careers while earning an Associate of Applied Science degree. Firefighters must have at least five years of experience prior to beginning the second-year curriculum of this program.

The scope of fire service encompasses many community needs and fire service professionals must be prepared to respond to many demands. Leaders in today's fire service must keep up with technologies that influence change within the communities they serve and must be well-informed on topics such as health, nutrition, diversity, standard operating guidelines, emergency medical services, and fire law.

Students must earn grades of C or higher in all Fire Service Leadership program courses.

Applicants must present copies of previous certifications pertaining to fire fighting and emergency medical services.

## Fire Service Certificate (FSTC)

The Fire Service Certificate program provides specific education, training, and skills needed to obtain employment at a fire department. The Emergency Medical Technician course and the Firefighter 1 and 2 courses, included within the certificate, prepare students for the State of Ohio's Certification exams. Successful completion of the state exams is required before certification cards are issued by the State of Ohio.

The Fire Service certificate program offers a fast track to employment in a fire department. All credits earned while completing this certificate count towards completion of the Fire Service Technology associate's degree.

For more information, please contact the Health and Public Safety Division at (513) 569-1670.

## Fire Service Technology (FST)

**Program Prerequisite:** AFM 095 Foundations of Basic Algebra or appropriate placement test score.

Semester 1		Lec	Lab	Credits
FST 100	Fire Cadet Fundamentals ( T)	2	2	3
ENG 101	English Composition 1 ( G)	3	0	3
FST 105	Fire Cadet Physical Preparedness ( T)	1	2	2
FST 123	Principles of Emergency Services ( T)	3	0	3
FYE 1XX First Year Experience Elective ( B)		1	0	1

**Semester 2**

FST 120	Fire Behavior and Combustion ( <b>T</b> )	2	0	2
FST 14X Firefighter Elective ( <b>T</b> )		7	12	11

**Semester 3**

FST 126	Fire Protection Systems ( <b>T</b> )	2	0	2
FST 129	Fire Prevention ( <b>T</b> )	3	0	3
MAT 130	Intermediate Algebra for Statistics ( <b>G</b> )	3	2	4
ENG 10X English Composition Elective ( <b>G</b> )		3	0	3

**Semester 4**

FST 228	Legal Aspects of the Emergency Services ( <b>T</b> )	3	0	3
EMS 110	Emergency Medical Technician Theory and Practice ( <b>T</b> )	5	4	7
XXX XXX Social Science Elective ( <b>G</b> )		3	0	3

**Semester 5**

FST 223	Principles of Fire and Emergency Services Safety and Survival ( <b>T</b> )	2	0	2
FST 226	Building Construction for Fire Protection ( <b>T</b> )	3	0	3
COMM 110	Public Speaking ( <b>B</b> )	3	0	3
FST 294	Internship 1: Fire Service Technology ( <b>T</b> )	1	40	2
XXX XXX Arts/Humanities Elective ( <b>G</b> )		3	0	3

Total Credits:		53	62	63
----------------	--	----	----	----

**Electives****First Year Experience Elective**

FYE 100	College Survival Skills	1
FYE 105	College Success Strategies	2
FYE 110	Community College Experience	3

**Firefighter Elective**

FST 141 & FST 142	Firefighter 1 and Firefighter 2	11
FST 145	Career Firefighter 1 and 2	11

**English Composition Elective**

ENG 102	English Composition 2: Contemporary Issues	3
ENG 103	English Composition 2: Topics in Literature	3
ENG 104	English Composition 2: Technical Communication	3
ENG 105	English Composition 2: Business Communication	3

**Social Science Elective**

PSY 110	Introduction to Psychology	3
SOC 105	Introduction to Sociology	3

**Arts/Humanities Elective**

CULT 105	Issues in Human Diversity	3
PHI 110	Ethics	3

## Fire Service Leadership (FSTL)

**Program Prerequisites:** AFM 092 Introductory Algebra or appropriate placement test score, and a minimum of five years of experience as a firefighter.

<b>Semester 1</b>		<b>Lec</b>	<b>Lab</b>	<b>Credits</b>
FST 123	Principles of Emergency Services ( <b>T</b> )	3	0	3
FST 161	Fire Officer 1 ( <b>T</b> )	4	0	4
ENG 101	English Composition 1 ( <b>G</b> )	3	0	3
FYE 1XX First Year Experience Elective ( <b>B</b> )		1	0	1
<b>Semester 2</b>				
FST 120	Fire Behavior and Combustion ( <b>T</b> )	2	0	2
FST 1XX Firefighter Elective ( <b>B</b> )		7	12	11
<b>Semester 3</b>				
FST 129	Fire Prevention ( <b>T</b> )	3	0	3
FST 126	Fire Protection Systems ( <b>T</b> )	2	0	2
ENG 10X English Composition Elective ( <b>G</b> )		3	0	3
MAT 115	Pre-Statistics ( <b>G</b> )	2	2	3
<b>Semester 4</b>				
FST 228	Legal Aspects of the Emergency Services ( <b>T</b> )	3	0	3
FST 162	Fire Officer 2 ( <b>T</b> )	4	0	4
SPN 100	Spanish for the Professions ( <b>T</b> )	2	0	2
XXX XXX Social Science Elective ( <b>G</b> )		3	0	3
<b>Semester 5</b>				
FST 223	Principles of Fire and Emergency Services Safety and Survival ( <b>T</b> )	2	0	2
FST 226	Building Construction for Fire Protection ( <b>T</b> )	3	0	3
COMM 110	Public Speaking ( <b>B</b> )	3	0	3
FST 265	Fire Service Instructor ( <b>T</b> )	2	3	3
XXX XXX Arts/Humanities Elective ( <b>G</b> )		3	0	3
<b>Total Credits:</b>		<b>55</b>	<b>17</b>	<b>61</b>

## Electives

### First Year Experience Elective

FYE 100	College Survival Skills	1
FYE 105	College Success Strategies	2
FYE 110	Community College Experience	3

### Firefighter Elective

FST 141 & FST 142	Firefighter 1 and Firefighter 2	11
FST 145	Career Firefighter 1 and 2	11

### English Composition Elective

ENG 102	English Composition 2: Contemporary Issues	3
ENG 103	English Composition 2: Writing about Literature	3
ENG 104	English Composition 2: Technical Communication	3

ENG 105	English Composition 2: Business Communication	3
<b>Social Science Elective</b>		
PSY 110	Introduction to Psychology	3
SOC 105	Introduction to Sociology	3
<b>Arts/Humanities Elective</b>		
CULT 105	Issues in Human Diversity	3
PHI 110	Ethics	3

## Fire Service Certificate (FSTC)

<b>Semester 1</b>		<b>Lec</b>	<b>Lab</b>	<b>Credits</b>
FST 100	Fire Cadet Fundamentals ( T)	2	2	3
FST 105	Fire Cadet Physical Preparedness ( T)	1	2	2
EMS 110	Emergency Medical Technician Theory and Practice ( T)	5	4	7
FST 123	Principles of Emergency Services ( T)	3	0	3
<b>Semester 2</b>				
FST 120	Fire Behavior and Combustion ( T)	2	0	2
FST 129	Fire Prevention ( T)	3	0	3
FST 14X Firefighter Elective (T)				11
Total Credits:		16	8	31

## Electives

### Firefighter Elective

Select one of the following:	10
FST 145 Career Firefighter 1 and 2	
FST 141 & FST 142 Firefighter 1 and Firefighter 2	

## Faculty

### Program Chair/Advisor

Professor William Mehbod, BS, EMT-P  
william.mehbod@cincinnatiastate.edu

## Courses

### FST 100 Fire Cadet Fundamentals

**3 Credits. 2 Lecture Hours. 2 Lab Hours.**

A course on preparing for public service as a firefighter. Topics include: drill and ceremony, critical thinking, public and personal safety, self-reflection and discipline, radio communication including MAYDAY, drivers' education, and CPR for healthcare providers.

Prerequisites: AFL 085 and AFM 092, or appropriate placement scores. Students must pass a physical agility test

Instructor Consent Required

### FST 103 Evolution of the Fire Service

**2 Credits. 2 Lecture Hours. 0 Lab Hour.**

A course on the growth of the fire service from its creation through the 21st century. Topics include: changes in suppression methods, building codes, and rescue techniques; administrative philosophies; and personnel behaviors.

Prerequisites: None

**FST 105 Fire Cadet Physical Preparedness****2 Credits. 1 Lecture Hour. 2 Lab Hours.**

A course on preparing fire cadets for the rigors of fire training. Topics include: physical preparedness, and balanced physical conditioning that incorporates all basic factors of fitness.

Prerequisites: AFL 085 and AFM 092, or appropriate placement test scores

Instructor Consent Required

**FST 107 Home Safety****1 Credit. 1 Lecture Hour. 0 Lab Hour.**

A course on identifying common hazards that place individuals and families at risk for injury and/or crisis. Topics include: home, fire, and child safety; health hazards; severe weather safety; and driving and water safety.

Prerequisites: None

**FST 108 Emotional Preparedness for Public Safety Professionals****2 Credits. 2 Lecture Hours. 0 Lab Hour.**

A course on dealing with emotions and stresses that result from caring for the sick, injured, and dying. Topics include: concepts and techniques from the fields of sociology, philosophy, religion, and health education.

Prerequisites: AFL 085 and AFM 092, or appropriate placement test scores

**FST 110 Portable Fire Extinguishers****1 Credit. 1 Lecture Hour. 0 Lab Hour.**

A course on fundamentals of fire and fire extinguishing. Topics include: elements that support a fire, and using equipment to efficiently extinguish Class A, B, and C type fires.

Prerequisites: None

**FST 116 Fire Apparatus and Equipment Maintenance****3 Credits. 2 Lecture Hours. 2 Lab Hours.**

A course on operating, maintaining, and repairing internal combustion engines. Topics include: small gas power engines used in the fire service, daily inspections of fire apparatus and equipment, and pre- and post-run inspections of vehicles.

Prerequisites: AFL 085 and AFM 092, or appropriate placement test scores

**FST 120 Fire Behavior and Combustion****2 Credits. 2 Lecture Hours. 0 Lab Hour.**

A course on theories and fundamentals of how and why fires start and spread, and how fires are controlled. Topics include: the chemistry of fire, combustion and heat transfer, stages of fire growth, toxic gases and smoke, and extinguishing agents.

Prerequisites: AFL 085 and AFM 092, or appropriate placement test scores

**FST 121 Fire Investigation 1****3 Credits. 3 Lecture Hours. 0 Lab Hour.**

A course on fundamentals of proper fire scene interpretations. Topics include: recognizing origin location and cause, preserving evidence and documentation, scene security, motives of the fire setter, and types of fire causes.

Prerequisites: None

**FST 123 Principles of Emergency Services****3 Credits. 3 Lecture Hours. 0 Lab Hour.**

A course on fire protection as an industry. Topics include: philosophy and history of fire services, fire departments as part of local government, protection systems, regulations and laws, and introductory fire ground strategy and tactics.

Prerequisites: AFL 085 and AFM 092, or appropriate placement test scores

**FST 124 Fire and Emergency Services Administration****2 Credits. 2 Lecture Hours. 0 Lab Hour.**

A course on organization and management of a fire department. Topics include: the relationship of government agencies to the fire service, fire and emergency services, and ethics and leadership from the perspective of the company officer.

Prerequisites: FST 123

**FST 126 Fire Protection Systems****2 Credits. 2 Lecture Hours. 0 Lab Hour.**

A course on design and operation of fire alarm systems. Topics include: water-based fire suppression systems, special hazard fire suppression systems, water supply for fire protection, and portable fire extinguishers.

Prerequisites: AFL 085 and AFM 092, or appropriate placement test scores

**FST 129 Fire Prevention****3 Credits. 3 Lecture Hours. 0 Lab Hour.**

A course on fundamental concepts of fire prevention. Topics include: history, philosophy, organization, and operation of a fire prevention bureau; use and application of codes and standards; plan review; fire inspections; fire and life safety education; and fire investigation.

Prerequisites: AFL 085 and AFM 092, or appropriate placement test scores

**FST 130 Volunteer Firefighter**

**1 Credit. 0 Lecture Hour. 3 Lab Hours.**

A course on fundamentals for the volunteer firefighter, using the Ohio Department of Public Safety objectives for volunteer firefighter certification. Topics include: safety, fire behavior, personal protective equipment, ventilation, tools, ground ladders, water supply, and overhaul.

Prerequisites: AFL 085 and AFM 092, or appropriate placement test scores

**FST 133 Firefighter 1 Transition**

**4 Credits. 3 Lecture Hours. 3 Lab Hours.**

A course for volunteer firefighters seeking the Firefighter 1 level, using the Ohio Department of Public Safety objectives for volunteer-to-Firefighter 1 certification. Topics include: safety, hoses and streams, fire extinguishers, ladders, ropes, ventilation, forcible entry, and live fire training.

Prerequisites: FST 130

**FST 136 Emergency Vehicle Operator**

**2 Credits. 1 Lecture Hour. 2 Lab Hours.**

A course on safe driving practices while responding in emergency vehicles. Topics include: techniques for safe operation, post-collision analysis, and unsafe practices during emergency response. Students must have a valid driver's license.

Prerequisites: AFL 085 and AFM 092, or appropriate placement test scores

Instructor Consent Required

**FST 141 Firefighter 1**

**7 Credits. 4 Lecture Hours. 6 Lab Hours.**

A course covering NFPA 1001 Firefighter 1 objectives. Topics include: ladders, personal protection clothing, SCBA, fire extinguishers, search and rescue, ropes and knots, and hoses and nozzles. Students must successfully complete a state test to obtain Ohio Firefighter certification. PROBOARD accreditation is available for interested students.

Prerequisites: FST 100

**FST 142 Firefighter 2**

**4 Credits. 3 Lecture Hours. 3 Lab Hours.**

A continuation of FST 141, covering NFPA 1001 Firefighter 2 objectives. Topics include: fire streams and foam, auto extrication, fire control, fire protection systems, and pre-incident surveys. Students must successfully complete a state test to obtain Ohio Firefighter certification. PROBOARD accreditation is available for interested students.

Prerequisites: FST 141

**FST 145 Career Firefighter 1 & 2**

**11 Credits. 7 Lecture Hours. 12 Lab Hours.**

A course covering NFPA 1001 Firefighter 1 and 2 objectives. Topics include ladders, personal protective clothing and equipment, fire extinguishers, search and rescue, fire streams, foam, fire control and auto extraction. PROBOARD accreditation is available for interested students. Students must pass the state test before Firefighter certification is awarded.

Prerequisites: FST 100

**FST 153 Fire Service Technology Blueprint Reading**

**3 Credits. 3 Lecture Hours. 0 Lab Hour.**

A course on reading computer-generated drawings used in fire services. Topics include: interpreting architectural and civil engineering symbols and abbreviations; and understanding civil, architectural, electrical, mechanical, and fire protection drawings.

Prerequisites: AFL 085 and AFM 092, or appropriate placement test scores

**FST 158 Fire Alarm Basics**

**2 Credits. 2 Lecture Hours. 0 Lab Hour.**

A course on fundamentals of fire alarm systems. Topics include: system components, operation and application of systems, building codes, and regulatory standards.

Prerequisites: AFL 085 and AFM 092, or appropriate placement test scores

**FST 161 Fire Officer 1**

**4 Credits. 4 Lecture Hours. 0 Lab Hour.**

A course on preparing for the role of company officer, using NFPA 1021 Fire Officers Professional Qualifications Level 1 objectives. Topics include: human resource management, community and government relations, inspections, investigations, emergency service delivery, and safety. This course is delivered in an online format.

Prerequisites: FST 142

**FST 162 Fire Officer 2**

**4 Credits. 4 Lecture Hours. 0 Lab Hour.**

A continuation of FST 161, using standards defined for NFPA 1021 Fire Officers Professional Qualifications Level 2. This course is delivered in an online format.

Prerequisites: FST 161

**FST 163 Fire Officer 3****4 Credits. 4 Lecture Hours. 0 Lab Hour.**

A continuation of FST 162, using standards defined for NFPA 1021 Fire Officers Professional Qualifications Level 3. This course is delivered in an online format.

Prerequisites: FST 162

**FST 164 Occupational Health and Safety for Emergency Services****2 Credits. 2 Lecture Hours. 0 Lab Hour.**

A course on basic concepts of occupational health and safety related to emergency service organizations. Topics include: risk and hazard evaluation, and control procedures.

Prerequisites: AFL 085 and AFM 092, or appropriate placement test scores

**FST 198 First Year Special Topics in Fire Service Technology****1-9 Credits. 0 Lecture Hour. 0 Lab Hour.**

A course on selected topics related to Fire Service Technology, which gives students opportunities to study information not currently covered in other courses. Grades issued are A, B, C, D, or F.

Prerequisites: None

**FST 199 First Year Independent Project in Fire Service Technology****1-9 Credits. 0 Lecture Hour. 0 Lab Hour.**

A project related to Fire Service Technology that is completed by one or more students to meet specific educational goals. Projects must have prior approval and supervision by Fire Service Technology faculty. Grades issued are Satisfactory or Unsatisfactory.

Prerequisites: Vary by section

**FST 210 Crew Resource Management****2 Credits. 2 Lecture Hours. 0 Lab Hour.**

A course on effects of human error during fire ground operations, using concepts from commercial aviation that apply to fire services. Topics include: communication, teamwork, situational awareness, critical decision making, and decreasing injuries and deaths during firefighting. This course is delivered in an online format.

Prerequisites: FST 142 or FST 145

**FST 218 Wildfire Behavior and Suppression****3 Credits. 2 Lecture Hours. 2 Lab Hours.**

A course on knowledge and skills needed to extinguish wildfires. Topics include: factors affecting the start and spread of wildfires, and recognizing potentially hazardous situations.

Prerequisites: FST 100

**FST 222 Fire Investigation 2****3 Credits. 3 Lecture Hours. 0 Lab Hour.**

A continuation of FST 121. Topics include: rules and laws, fire scene analysis, fire behavior, evidence preservation, documentation, case preparation, and courtroom testimony.

Prerequisites: FST 121

**FST 223 Principles of Fire and Emergency Services Safety and Survival****2 Credits. 2 Lecture Hours. 0 Lab Hour.**

A course on the history and basic principles of the national firefighter life safety initiatives, focusing on the need for cultural change throughout the emergency services.

Prerequisites: FST 142 or FST 145

**FST 225 Fire Protection Hydraulics and Water Supply****2 Credits. 2 Lecture Hours. 0 Lab Hour.**

A course on understanding principles of water for fire protection, and understanding principles of hydraulics used to analyze and overcome challenges of applying sufficient water for fire suppression.

Prerequisites: FST 142

**FST 226 Building Construction for Fire Protection****3 Credits. 3 Lecture Hours. 0 Lab Hour.**

A course on building construction in relation to firefighting and life safety. Topics include: elements of construction and design, building inspection factors, pre-planning fire operations, and safe operations during emergencies.

Prerequisites: FST 141

**FST 228 Legal Aspects of the Emergency Services****3 Credits. 3 Lecture Hours. 0 Lab Hour.**

A course on legal issues related to emergency services. Topics include: the American legal system; recent court decisions, events, and statutes; Americans with Disabilities Act; Family Medical Leave Act; Fair Labor Standards Act; and HIPAA.

Prerequisites: FST 100

**FST 229 Strategies and Tactics for Fire Suppression**

**2 Credits. 2 Lecture Hours. 0 Lab Hour.**

A course on principles of fire ground control using personnel, equipment, pre-incident planning, and extinguishing agents.

Prerequisites: FST 142

**FST 236 Fire Apparatus Operator**

**3 Credits. 2 Lecture Hours. 2 Lab Hours.**

A course on theory and operation of engines and pumpers used in firefighting. Topics include: equipment operation; troubleshooting; and demonstration and practice of fire ground water flow scenarios.

Prerequisites: FST 142 or FST 145

**FST 258 Rapid Assistance and Self-Rescue Operations**

**2 Credits. 1 Lecture Hour. 3 Lab Hours.**

A course on saving your own life or saving lives of other firefighters. Topics include: MAYDAY, fire ground safety, communications, self awareness, rapid entry team preparedness, and survival techniques.

Prerequisites: FST 142

**FST 265 Fire Service Instructor**

**3 Credits. 2 Lecture Hours. 3 Lab Hours.**

A course on techniques for teaching adult learners knowledge and skills required for the Fire Services field, using NFPA 1041 Instructor 1 and 2 objectives. Topics include: domains of learning, learning outcomes and objectives, classroom preparedness, student safety, and legal obligations. Students must have five years experience as a firefighter.

Prerequisites: FST 142 and Instructor consent

Instructor Consent Required

**FST 268 Fire Safety Inspector**

**3 Credits. 2 Lecture Hours. 3 Lab Hours.**

A course on fire safety inspection procedures and responsibilities, using NFPA 1031 objectives. Students who are members of an Ohio Fire Department may take the state exam for Fire Safety Inspector at the end of the course.

Prerequisites: FST 142

**FST 294 Internship 1: Fire Service Technology**

**2 Credits. 1 Lecture Hour. 40 Lab Hours.**

Students seeking an associate's degree participate in an unpaid field learning experience related to their degree. Students must follow applicable policies and procedures to earn credit. Grades issued are Satisfactory or Unsatisfactory.

Prerequisites: FST 142 or FST 145 (minimum grade C for either)

Instructor Consent Required

**FST 298 Second Year Special Topics in Fire Service Technology**

**1-9 Credits. 0 Lecture Hour. 0 Lab Hour.**

A course on selected topics related to Fire Service Technology, which gives students opportunities to study information not currently covered in other courses. Grades issued are A, B, C, D, or F.

Prerequisites: None

**FST 299 Second Year Independent Projects in Fire Service Technology**

**1-9 Credits. 0 Lecture Hour. 0 Lab Hour.**

A project related to Fire Service Technology that is completed by one or more students to meet specific educational goals. Projects must have prior approval and supervision by Fire Service Technology faculty. Grades issued are Satisfactory or Unsatisfactory.

Prerequisites: Vary by section