

# Fire Science

COLUMBUS STATE

COMMUNITY COLLEGE

Rev. 1/24

## Programs of Study

### Fire Science Associate Degree - Professional Track

#### ***Certificate Programs:***

**Firefighter I Certificate**

**Firefighter II Certificate**

**Fire and Emergency Services Higher Education (FESHE) Certificate**

**Fire Inspector Certificate**

**Red Cross Lifeguarding and Waterfront Skills Certificate**

**Rescue Technician Certificate**

Technological advancements and increasing sophistication in firefighting and prevention have made the role of the professional in this field more complex, requiring advanced preparation. This program is designed for firefighters and professionals in related fields such as construction engineering, insurance investigation, and corporate safety.

The Fire Science Program is accredited by the Ohio Department of Public Safety, Division of EMS, commonly referred to as the Fire Charter (Certificate # 311).

The program emphasizes firefighting techniques, fire prevention, fire protection systems, and customer service. Combining these subjects with advanced hazardous material response, building construction, and hydraulics gives the student a firm foundation in fire protection and prevention.

#### ***Upon completion of the Associate Degree in Fire Science, the graduate will be able to:***

- Demonstrate effective communication and interpersonal skills with supervisors, peers, and the public
- Explain the history and basic principles of the fire service
- Recognize and respond to changing fire conditions and the potential for collapse in structures
- Demonstrate knowledge of the legal aspects of the fire service
- Demonstrate the duties and responsibilities of Incident Command
- Demonstrate necessary proficiencies with extinguishment hydraulics and fire protection systems
- Demonstrate a working knowledge of fire investigation principles.

## DEGREE PROGRAM

## Fire Science Associate Degree - Professional

## COURSE CR

## Semester 1

|                                 |                                     |           |
|---------------------------------|-------------------------------------|-----------|
| COLS 1100                       | First Year Experience Seminar ..... | 1         |
| ENGL 1100                       | Composition I.....                  | 3         |
| FIRE 1121                       | Firefighter I.....                  | 7         |
| FIRE1122                        | Firefighter II.....                 | 5         |
| <b>TOTAL CREDIT HOURS .....</b> |                                     | <b>16</b> |

## Semester 2

|                                 |                                    |           |
|---------------------------------|------------------------------------|-----------|
| EMS 1860                        | Emergency Medical Technician ..... | 7         |
| PSY 1100                        | Introduction to Psychology.....    | 3         |
| FIRE 1105                       | Strategies and Tactics.....        | 3         |
| SES 1100                        | Personal Fitness Concepts .....    | 3         |
| <b>TOTAL CREDIT HOURS .....</b> |                                    | <b>16</b> |

## Summer Semester

|                                 |                                              |           |
|---------------------------------|----------------------------------------------|-----------|
| COMM 1105                       | Oral Communication .....                     | 3         |
| FIRE 1112                       | Customer Service for Emergency Services..... | 3         |
| HUM XXXX                        | Refer to approved GE - HUM list.....         | 3         |
| MATH 1109                       | Math for Emergency Services.....             | 3         |
| <b>TOTAL CREDIT HOURS .....</b> |                                              | <b>12</b> |

## Semester 3

|                                 |                                        |           |
|---------------------------------|----------------------------------------|-----------|
| NAT XXXX                        | Refer to approved GE – NAT list .....  | 4         |
| FIRE 2001                       | Fire Service Company Officer .....     | 3         |
| FIRE 2003                       | Fire Cause & Origin Investigation..... | 3         |
| <b>TOTAL CREDIT HOURS .....</b> |                                        | <b>10</b> |

**NOTE 1:** Prior to enrolling in any Fire Science courses, student must complete one of the following: FIRE 1121 and FIRE 1122, or have documented Firefighter I and II certification.

## COURSE CR

## Semester 4

|                                       |                                          |           |
|---------------------------------------|------------------------------------------|-----------|
| FIRE 2006                             | Legal Aspects of Emergency Services..... | 3         |
| FIRE XXXX                             | Technical Elective .....                 | 3         |
| <b>TOTAL CREDIT HOURS.....</b>        |                                          | <b>6</b>  |
| <b>TOTAL DEGREE CREDIT HOURS.....</b> |                                          | <b>60</b> |

## Technical Electives:

|           |                                                    |   |
|-----------|----------------------------------------------------|---|
| FIRE 1106 | Hazardous Materials Awareness & Operations.....    | 3 |
| FIRE 1102 | Hazardous Materials Tech Level.....                | 3 |
| FIRE 1103 | Fire and Emergency Services Safety & Survival..... | 2 |
| FIRE 1104 | Fire Behavior and Combustion .....                 | 2 |
| FIRE 1107 | Fire Protection Hydraulics & Water Supply .....    | 3 |
| FIRE 1108 | Fire Prevention.....                               | 3 |
| FIRE 1109 | Building Construction for Fire Protection .....    | 3 |
| FIRE 1110 | Fire Protection Systems.....                       | 2 |
| FIRE 1201 | Introduction to Technical Rescue.....              | 3 |
| FIRE 2002 | Fire Safety Inspector .....                        | 3 |
| FIRE 2003 | Fire Cause and Origin Investigation .....          | 3 |
| FIRE 2005 | Principals of Fire Science Command .....           | 3 |
| FIRE 2094 | Special Topics of Emergency Services.....          | 5 |
| FIRE 2105 | Advanced Building Construction.....                | 3 |

**NOTE 2:** Students with EMT, Firefighter I and II, and/or apprenticeship certification may qualify for other nontraditional credit ("N") which may apply toward the degree. Contact the Fire Science Technology coordinator at [fire@csc.edu](mailto:fire@csc.edu) for an advising appointment.

## Approved General Education (GE) List

## GE - NAT- NATURAL/PHYSICAL SCIENCES REQUIREMENT (SELECT ONE)

## COURSE CR

|           |                                             |   |
|-----------|---------------------------------------------|---|
| ASTR 1141 | Life in the Universe.....                   | 3 |
| ASTR 1161 | The Solar System.....                       | 3 |
| ASTR 1162 | Stars and Galaxies.....                     | 3 |
| ASTR 1400 | Astronomy Laboratory .....                  | 1 |
| BIO 1111  | Introduction to Biology .....               | 4 |
| BIO 1112  | Human Biology .....                         | 4 |
| BIO 1113  | Biological Sciences I.....                  | 4 |
| BIO 1114  | Biological Sciences II .....                | 4 |
| BIO 1125  | Plant Biology .....                         | 4 |
| BIO 1127  | Introduction to Environmental Science ..... | 4 |
| BIO 2215  | Introduction to Microbiology .....          | 4 |
| BIO 2301  | Human Physiology .....                      | 4 |
| CHEM 1100 | Chemistry and Society .....                 | 5 |
| CHEM 1111 | Elementary Chemistry I.....                 | 4 |

## COURSE CR

|           |                                     |   |
|-----------|-------------------------------------|---|
| CHEM 1112 | Elementary Chemistry II.....        | 4 |
| CHEM 1171 | General Chemistry I.....            | 5 |
| CHEM 1172 | General Chemistry II.....           | 5 |
| GEOL 1101 | Introduction to Earth Science ..... | 4 |
| GEOL 1105 | Geology and the National Parks..... | 3 |
| GEOL 1121 | Physical Geology .....              | 4 |
| GEOL 1122 | Historical Geology .....            | 4 |
| GEOL 1151 | Natural Disasters.....              | 3 |
| PHYS 1103 | World of Energy .....               | 3 |
| PHYS 1200 | Algebra-Based Physics I.....        | 5 |
| PHYS 1201 | Algebra-Based Physics II.....       | 5 |
| PHYS 1250 | Calculus-Based Physics I.....       | 5 |
| PHYS 1251 | Calculus-Based Physics II .....     | 5 |

## GE - HUM – ART/HUMANITIES REQUIREMENT (SELECT ONE)

|           |                                                 |   |
|-----------|-------------------------------------------------|---|
| ARCH 2100 | History of Architecture.....                    | 3 |
| HART 1201 | History of Art I.....                           | 3 |
| HART 1202 | History of Art II .....                         | 3 |
| HIST 1111 | European History to 1648.....                   | 3 |
| HIST 1112 | European History since 1648 .....               | 3 |
| HIST 1151 | American History to 1877.....                   | 3 |
| HIST 1152 | American History since 1877 .....               | 3 |
| HIST 1181 | World Civ. I: Non-Western/Non-Amer to 1500..... | 3 |

|           |                                                  |   |
|-----------|--------------------------------------------------|---|
| HIST 1182 | World Civ. II: Non-West/Non-Amer since 1500..... | 3 |
| HIST 2223 | African-American History I: 1451-1876 .....      | 3 |
| HIST 2224 | African-American History II: 1877-Present .....  | 3 |
| HUM 1100  | Introduction to Humanities .....                 | 3 |
| HUM 1270  | Comparative Religions .....                      | 3 |
| MUS 1251  | Survey of Music History .....                    | 3 |
| PHIL 1101 | Introduction to Philosophy .....                 | 3 |
| PHIL 1130 | Ethics .....                                     | 3 |

## CERTIFICATE PROGRAMS

### Firefighter I Certificate

| COURSE                          | CR       |
|---------------------------------|----------|
| <i>Semester 1</i>               |          |
| FIRE 1121 Firefighter I.....    | 7        |
| <b>TOTAL CREDIT HOURS .....</b> | <b>7</b> |

### Firefighter II Certificate

| COURSE                         | CR       |
|--------------------------------|----------|
| <i>Semester 1</i>              |          |
| FIRE 1122 Firefighter II.....  | 5        |
| <b>TOTAL CREDIT HOURS.....</b> | <b>5</b> |

### Fire and Emergency Services Higher Education (FESHE) Certificate

| COURSE                                                       | CR        |
|--------------------------------------------------------------|-----------|
| <i>Semester 1</i>                                            |           |
| FIRE 1100 Principles of Emergency Services .....             | 3         |
| <b>TOTAL CREDIT HOURS .....</b>                              | <b>3</b>  |
| <i>Semester 2</i>                                            |           |
| FIRE 1108 Fire Prevention.....                               | 3         |
| FIRE 1109 Building Construction for Fire .....               | 3         |
| FIRE 1110 Fire Protection Systems.....                       | 2         |
| <b>TOTAL CREDIT HOURS .....</b>                              | <b>8</b>  |
| <i>Semester 3</i>                                            |           |
| FIRE 1104 Fire and Emergency Services Safety & Survival..... | 2         |
| <b>TOTAL CREDIT HOURS .....</b>                              | <b>2</b>  |
| <i>Semester 4</i>                                            |           |
| FIRE 1106 Fire Behavior and Combustion .....                 | 3         |
| <b>TOTAL CREDIT HOURS .....</b>                              | <b>3</b>  |
| <b>TOTAL DEGREE CREDIT HOURS.....</b>                        | <b>16</b> |

### Fire Inspector Certificate

| COURSE                                  | CR        |
|-----------------------------------------|-----------|
| <i>Semester 1</i>                       |           |
| FIRE 1121 Firefighter I.....            | 7         |
| FIRE1122 Firefighter II .....           | 5         |
| <b>TOTAL CREDIT HOURS.....</b>          | <b>12</b> |
| <i>Semester 2</i>                       |           |
| FIRE 1108 Fire Prevention.....          | 3         |
| FIRE 1110 Fire Protection Systems ..... | 2         |
| <b>TOTAL CREDIT HOURS.....</b>          | <b>5</b>  |
| <i>Semester 3</i>                       |           |
| FIRE 2002 Fire Safety Inspector.....    | 3         |
| <b>TOTAL CREDIT HOURS.....</b>          | <b>3</b>  |
| <b>TOTAL DEGREE CREDIT HOURS .....</b>  | <b>20</b> |

### Red Cross Lifeguarding & Waterfront Skills Certificate

| COURSE                                            | CR       |
|---------------------------------------------------|----------|
| <i>Semester 1</i>                                 |          |
| FIRE 1203 Surface and Ice Rescue Technician ..... | 2        |
| <b>TOTAL CREDIT HOURS.....</b>                    | <b>2</b> |

### Rescue Technician Certificate

| COURSE                                                | CR        |
|-------------------------------------------------------|-----------|
| <i>Semester 1</i>                                     |           |
| FIRE 1202 Rope Rescue Technician .....                | 3         |
| <b>TOTAL CREDIT HOURS.....</b>                        | <b>3</b>  |
| <i>Semester 2</i>                                     |           |
| FIRE 1203 Surface and Ice Rescue Technician .....     | 2         |
| FIRE 1208 Vehicle & Machinery Rescue Technician ..... | 2         |
| <b>TOTAL CREDIT HOURS.....</b>                        | <b>4</b>  |
| <i>Semester 3</i>                                     |           |
| FIRE 1204 Swiftwater Rescue Technician .....          | 2         |
| FIRE 1205 Confined Space Rescue Technician.....       | 2         |
| FIRE 1206 Trench Rescue Technician.....               | 2         |
| FIRE 1207 Structural Collapse Rescue Technician.....  | 2         |
| <b>TOTAL CREDIT HOURS.....</b>                        | <b>8</b>  |
| <b>TOTAL DEGREE CREDIT HOURS.....</b>                 | <b>15</b> |

## Course Descriptions

### **FIRE 1100 Principles of Emergency Services (A, SP, SU)**

**3 credits**

This course provides an overview to fire protection and emergency services, career opportunities in the fire protection and related fields, culture and history of the emergency services, fire loss analysis, the 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

*Lecture: 3 hours*

*Lab Fee: \$13.00*

### **FIRE 1102 Hazardous Material Awareness & Operation (A,SP)**

**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.

*Lecture: 3 hours*

*Lab fee: \$8.00*

### **FIRE 1103 Hazardous Materials Technician Level (A)**

**3 credits**

This course is designed to build upon the training and knowledge that you have obtained from participating in the "Ohio HAZMAT & WMD Technician" courses. It is divided into two modules: Module 1 will address the standards established in NFPA 472 Chapter 7 "Competencies for Hazardous Materials Technicians" and will meet all the competencies as established by the Occupational Safety and Health Administration (OSHA 29 CFR 1910.120) and the US Environmental Protection Agency (EPA 40 CFR part 311). Module 2 will address the Performance Level B (Technician) guidelines for law enforcement and fire service personnel and guidelines for hazardous materials technicians as found in the Emergency Responder Guidelines published by the Office of Domestic Preparedness (ODP), and give advanced info about CBRNE weapons.

*Lecture: 2 hours – Lab: 3 hours*

*Prerequisites: FIRE 1102*

*Lab fee: \$150.00*

### **FIRE 1104 Fire and Emergency Services Safety and Survival (A, SP)**

**2 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.

*Lecture: 2 hours*

*Prerequisites: FIRE 1121 and FIRE 1122 or documentation of certification or equivalency*

### **FIRE 1105 Strategies and Tactics (A, SP)**

**3 credits**

This course provides the principles of fire ground control through utilization of personnel, equipment, and extinguishing agent.

*Lecture: 3 hours*

*Prerequisites: FIRE 1121 and FIRE 1122 or documentation of certification or equivalency*

### **FIRE 1106 Fire Behavior and Combustion (A, SP)**

**2 credits**

This course explores the theories and fundamentals of how and why fires start, spread, and are controlled.

*Lecture: 2 hours*

*Prerequisites: FIRE 1121 and FIRE 1122 or documentation of certification or equivalency*

### **FIRE 1107 Fire Protection Hydraulics/Water Supply (SU)**

**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.

*Lecture: 2 hours – Lab: 2 hours*

*Prerequisites: FIRE 1121 and FIRE 1122 or documentation of certification or equivalency*

*Lab fee: \$20.00*

### **FIRE 1108 Fire Prevention (A, SP)**

**3 credits**

This course provides fundamental knowledge relating to the field of fire prevention. Topics include the following: 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.

*Lecture: 3 hours*

*Prerequisites: FIRE 1121 and FIRE 1122 or documentation of certification or equivalency*

### **FIRE 1109 Building Construction Fire Service Protection (SP)**

**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, pre-planning fire operations, and operating at emergencies.

*Lecture: 3 hours*

*Prerequisites: FIRE 1121 and FIRE 1122 or documentation of certification or equivalency*

*Lab fee: \$27.00*

### **FIRE 1110 Fire Protection Systems (A, SP)**

**2 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.

*Lecture: 2 hours*

*Prerequisites: FIRE 1121 and FIRE 1122 or documentation of certification or equivalency*

### **FIRE 1112 Customer Service for Emergency Services (A, SP)**

**3 credits**

This course studies the psychology of relations between public service employees and the general population. It presents the policies and practices of community relations as they apply to public service agencies. Current national and local community problems are explored.

*Lecture: 3 hours*

## Course Descriptions

### **FIRE 1121 Firefighter I (A, SP, SU)**

**7 credits**

This course covers all of the basic performance and knowledge objectives in the current NFPA Standard 1010 for Firefighter I, and prepares individuals to perform duties while wearing required protective equipment. These duties include but are not limited to: fire department operations, firefighting equipment operation and maintenance, principles of combustion and fire behavior safety, recognition of types of fires and applying the correct methods for extinguishment, personal protective equipment, ventilation, forcible entry, loss prevention, operations level HAZMAT, fire and life safety initiatives, fire prevention and public relations. Completion of Health Record is required PRIOR TO registration. Registration for FIRE 1121 requires co-registration for FIRE 1122 which runs concurrently. Successful completion of Fire 1121 and FIRE 1122 meets the eligibility requirements to take the State of Ohio certification exam for Firefighter I & II.

*Corequisite: FIRE 1122*

*Lecture: 5 hours - Lab: 9 hours*

*Lab fee: \$300.00*

### **FIRE 1122 Firefighter II (A, SP)**

**5 credits**

This course covers all of the basic performance and knowledge objectives in the current NFPA Standard 1010 for Firefighter II, and prepares individuals to assume and transfer command within an incident management system. Persons will learn how to perform assigned duties in conformance with applicable NFPA and other safety regulations and Authority Having Justification (AHJ) procedures. The role and responsibilities of the Career Firefighter I and II will be covered. Completion of a Health Record is required PRIOR TO registration. Registration for FIRE 1122 requires co-registration for FIRE 1121 which runs concurrently. Successful completion of FIRE 1121 & FIRE 1122 meets the eligibility requirements to take the State of Ohio certification exam for Firefighter I and II.

*Corequisite: FIRE 1121*

*Lecture: 4 hours – Lab: 6 hours*

### **FIRE 1201 Introduction to Rescue (A, SP, SU)**

**3 credits**

This course includes coverage of the awareness level requirements found in the 2009 Edition of NFPA 1670, Standard on Operations and Training for Technical search and Rescue Incidents, as well as some of the general job performance requirements found in the 2008 Edition of NFPA 1006, Standard for Technical Rescuer Professional Qualifications. Introduction to Rescue presents in-depth coverage of structural collapse, confined space and trench rescue, vehicle rescue, and water and wilderness rescue, allowing the student to approach any rescue situation safely and confidently. The student will learn to effectively manage the initial stages of a rescue incident without becoming a victim themselves.

*Lecture: 3 hours*

### **FIRE 1202 Rope Rescue Technician (A, SP)**

**3 credits**

This course meets Awareness, Operations and Technician level requirements outlined in NFPA 1670, Standard Operations and Training for Technical Search and Rescue Incidents, as well as Chapters 5 and 6 of NFPA 1006, Standard for Rescue Technician Professional Qualifications Level II. The student will work as a team member while designing and executing multiple rope rescue systems for accessing and transporting a patient in the vertical environment.

*Lecture: 2 hours – Lab: 3 hours*

*Prerequisites: FIRE 1201*

*Lab Fee: \$40.00*

### **FIRE 1203 Surface and Ice Rescue Technician (SP)**

**2 credits**

The student will understand the 3 NFPA training compliance guidelines and know the limitations of each. Incident Command System knowledge will be covered. Hypothermia care, Patient handling, Throw Bag techniques, Self-Rescue Skills and proper use of Specialized Ice Rescue equipment are all critical components of this training, as well. This course is intended to further develop skills covered in the Level I class. Sub-Surface Recovery, Multiple Victim Rescue, Scene Assessment and Application Skills for Multiple Scenarios are covered in great detail. Each student is faced with potential rescue situations including “live victims” and allowed to handle the scene. Meets NFPA 1006 – Standard for Technical Rescuer Professional Qualifications Level II and NFPA 1670 – Standard on Operations and Training for Technical Search and Rescue Incidents Level II and the Ohio Boating Safety Course. Successful completion of the Operations Level is contingent upon a combined score of 70%. To receive certification at the Technician Level, the student shall attain a combined score of 75% and successfully complete, prior to the final exam, a swim test as follows: swim 500 yards without stopping, swim 700 yards using mask and snorkel, swim 100 yards towing an inert mannequin, tread water for 15 minutes and retrieve a 10 pound brick from the bottom of the deep end of the pool.

*Lecture: 1 hours*

*Prerequisites: FIRE 1201 and FIRE 1202*

*Lab: 2 hours*

*Lab Fee: \$100.00*

### **FIRE 1204 Swift Water Rescue Technician (SP)**

**2 credits**

This course will prepare emergency response personnel to perform rescue operations in moving water emergencies. Topics will include planning, personal protective equipment, search parameters, incident action plans, surface rescue techniques, advanced rope systems, and use of watercraft and helicopters in water rescue operations. Students will participate in moving water exercises to demonstrate proficiency in appropriate skills. This course meets Chapter 9, Technician Level, of NFPA 1670, Standard on Operations and Training for Technical Search and Rescue Incidents (2004), as well as Chapter 7, Surface Water Rescue, of NFPA 1006, Rescue Technician Professional Qualifications (2003) and the Ohio Boating Safety Course. To receive certification at the Technician Level, the student shall attain a combined score of 75% and successfully complete, prior to the final exam, a swim test as follows: swim 500 yards without stopping, swim 700 yards using mask and snorkel, swim 100 yards towing an inert mannequin, tread water for 15 minutes and retrieve a 10 pound brick from the bottom of the deep end of the pool.

*Lecture: 2 hours – Lab: 2 hours*

*Prerequisites: FIRE 1201 and FIRE 1202*

*Lab Fee: \$40.00*

### **FIRE 1205 Confined Space Rescue Technician (SP)**

**2 credits**

This course meets 29 CFR 1910.146 requirements, NFPA 1670, Standard for Operations and Training for Technical Search and Rescue Incidents and NFPA 1006, Standard for Rescue Technician Professional Qualifications Level II. The student will review the federal and state regulations for confined space, high angle, and hazardous materials incidents, the use of specialized equipment for atmospheric monitoring, and commercial and rescuer constructed retrieval systems. This course includes simulated rescue evolutions requiring mixture of all three disciplines, challenging the responder to deal with rescuing the rescuer in a contaminated atmosphere. Special emphasis is given to rescuer safety, patient care, decontamination, and the construction and operation of retrieval systems.

*Lecture: 1 hours– Lab: 2 hours*

*Prerequisites: FIRE 1201 and FIRE 1202*

*Lab Fee: \$30.00*

**FIRE 1206 Trench Rescue Technician (SP) 2 credits**

This course will prepare emergency response personnel to perform rescue operations in trench and excavation emergencies of depths greater than 8 feet. The following topics will be covered: identifying the construction, application, limitations, and removal of supplemental sheeting and shoring systems; manufactured trench boxes and isolation devices; adjusting protective systems based on digging operations and environmental conditions; evaluating existing and potential conditions; coordinating the use of heavy equipment; and patient management. The course meets the requirements of 29 CFR 1926 Subpart P, as well as Chapter 11.4, Technician Level, of NFPA 1670, Standard on Operations and Training for Technical Search and Rescue Incidents Levels I & II and Chapter 11, Trench Rescue, of NFPA 1006, Standard for Rescue Technician Professional Qualifications Level II.

*Lecture: 1 hours – Lab: 2 hours*

*Prerequisites: FIRE 1201 and FIRE 1202*

*Lab Fee: \$40.00*

**FIRE 1207 Structural Collapse Rescue Technician (A) 2 credits**

This course will prepare emergency response personnel to perform rescue operations in structural collapse emergencies. The following topics will be covered: determination of potential victim location; development of an incident action plan; search methods; coordination and use of heavy equipment; and patient management. Students will participate in structure stabilization methods, search of collapsed structures, and breaching of structural components. This course meets Chapter 5.4, Technician Level I & II of NFPA 1670, Standard on Operations and Training for Technical Search and Rescue Incidents (2004) as well as Chapter 10, Structural Collapse Rescue, of NFPA 1006, Rescue Technician Professional Qualifications (2003) Levels I & II.

*Lecture: 1 hours – Lab: 3 hours*

*Prerequisites: FIRE 1201 and FIRE 1202*

*Lab Fee: \$30.00*

**FIRE 1208 Vehicle and Machinery Rescue Technician (A, SP) 2 credits**

This course presents the student with opportunities to develop specific rescue skills applicable to common passenger vehicles and simple small machines (Level I) as well as rescue skills applicable to commercial or heavy vehicles, incidents involving complex extrication processes or multiple uncommon concurrent hazards, and incidents involving heavy machinery (Level II). Specific rescue skills include planning for a vehicle or machinery incident, performing on-going incident size-up, establishing scene safety zones, establishing fire protection, stabilizing vehicles or machines, isolating potentially harmful energy sources, determining access and egress points, creating access and egress openings, disentangling victims, removing packaged victims, and terminating vehicle or machinery rescue incidents. This course meets Sections 6.4.1 and 6.4.2 of NFPA 1010: Chapter 4, Chapter 5 (Sections 5.1 through 5.5), and Chapter 10 of NFPA 1006 Standard for Technical Rescuer Professional Qualifications Level II and Chapters 4, 8, and 12 of NFPA 1670 Standard Operations and Training for Technical Search and Rescue Incidents Levels I & II.

*Lecture: 1 hours – Lab: 3 hours*

*Prerequisites: FIRE 1201 and FIRE 1202*

*Lab Fee: \$30.00*

**FIRE 1209 Farm Rescue Technician (A) 2 credits**

This course addresses the unique hazards and complicated extrication of victims trapped in farm machinery and/or structures. The course includes detailed study of the classifications and incidents, proper procedures for stabilizing farm machinery, and gaining access to and extrication of farm machinery incidents. Participants will be provided opportunities to use these techniques in practical applications. This course meets NFPA 1006, Standard for Technical Rescuer Professional Qualifications Level II.

*Lecture: 1 hours – Lab: 3 hours*

*Prerequisites: FIRE 1202 and FIRE 1208*

*Lab Fee: \$30.00*

**FIRE 2001 Fire Service Company Officer (A) 3 credits**

This course introduces supervisory techniques as applied to public service personnel. Course covers the need for job descriptions and job procedures, reports, oral and written directions, work evaluation, meetings, discipline, and conference leaders.

*Lecture: 3 hours*

*Prerequisites: FIRE 1121 and FIRE 1122 or documentation of certification or equivalency*

**FIRE 2002 Fire Safety Inspector (SU) 3 credits**

Participant will gain an understanding of the fire inspector's role in code enforcement, general fire prevention practices, fire safety requirements related to HAZ MAT, electrical systems and fire protections systems. The student will learn the skills necessary to conduct fire safety inspections. This class meets certification requirements established by the Ohio Department of Public Safety and NFPA 1031, Fire Inspector Professional Qualifications.

*Lecture: 3 hours*

*Prerequisites: FIRE 1121 and FIRE 1122 or documentation of certification or equivalency*

*Lab Fee: \$10.00*

**FIRE 2003 Fire Cause and Origin Investigation (A, SP) 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, and types of fire causes.

*Lecture: 3 hours*

*Prerequisites: FIRE 1121 and FIRE 1122 or documentation of certification or equivalency*

**FIRE 2005 Principles Fire Scene Command (A) 3 credits**

This course presents NFPA Incident Management System curriculum concepts. The course content is tailored to the person looking to begin a career in firefighting, and the person at the FF level who has no direct command responsibility, but must understand the principles of incident command.

*Lecture: 3 hours*

*Prerequisites: FIRE 1121 and FIRE 1122 or documentation of certification or equivalency*

**FIRE 2006 Legal Aspects of Emergency Services (A, SP) 3 credits**

This course will address the Federal, State, and local laws that regulate emergency services and include a review of national standards, regulations, and consensus standards.

*Lecture: 3 hours*

**FIRE 2094 Special Topics in Emergencies Services (On Demand) Variable: .5 - 7 credits**

Topics or areas of professional interest within the fire science field will be explored. These offerings will introduce students to new topics and technologies supporting current trends, the needs of the students and the community, and future development of the program.

*Lecture: varies*

**FIRE 2105 Advanced Building Construction/Collapse (A, SP) 3 credits**

This course provides an introduction to the present and past practices of building construction as it relates to firefighting. It discusses the various hazards involved in a building collapse and how to recognize warning signs of impending disaster. Course also looks at building construction from the Company Officer and Incident Commander's perspective.

*Lecture: 3 hours*

*Prerequisites: FIRE 1121 and FIRE 1122 or documentation of certification or equivalency*

## GETTING STARTED CHECKLIST FOR FIRE SCIENCE

|    |                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1  | Apply for admission to Columbus State at <a href="http://www.cscs.edu">http://www.cscs.edu</a> . Click on the Admissions Tab, and then click on the Apply On-line link. Select the FIRE.PROF.AAS (Fire Professional degree)                                                                                                                                                                                                      |
| 2  | Apply for financial aid by completing the FAFSA (Free Application for Federal Aid) at <a href="https://www.cscs.edu/services/financial-aid/apply-for-fafsa.shtml">https://www.cscs.edu/services/financial-aid/apply-for-fafsa.shtml</a> CSCC School Code – 006867. For more information contact the Financial Aid Office <a href="https://www.cscs.edu/services/financial-aid/">https://www.cscs.edu/services/financial-aid/</a> |
| 3  | Military & Veterans Services- <a href="https://www.cscs.edu/services/military-veterans/">https://www.cscs.edu/services/military-veterans/</a>                                                                                                                                                                                                                                                                                    |
| 4  | Have official transcripts from high school (or a copy of your GED), or other colleges/universities sent directly to the Columbus State Community College, Office of the Registrar. Refer to the following link. <a href="https://www.cscs.edu/services/student-forms/transcripts.shtml">https://www.cscs.edu/services/student-forms/transcripts.shtml</a>                                                                        |
| 5  | Complete New Student Orientation. This orientation is voluntary if seeking certificates only. For more information click on this link: <a href="https://www.cscs.edu/admissions/orientation/">https://www.cscs.edu/admissions/orientation/</a>                                                                                                                                                                                   |
| 6  | Complete the placement test, located in Aquinas Hall, Room 002. Placement testing is not required for students with prior college credit. Make sure to have your transcript to the Registrar. For more information on placement testing click on this link: <a href="https://www.cscs.edu/admissions/placement-testing/">https://www.cscs.edu/admissions/placement-testing/</a>                                                  |
| 7  | Provide copies of all pertinent EMS, FIRE and Military professional certifications to the Fire Science Advisors by email : <a href="mailto:fire@cscs.edu">fire@cscs.edu</a> . Advising appointments may be scheduled by email: <a href="mailto:fire@cscs.edu">fire@cscs.edu</a> .                                                                                                                                                |
| 8  | Before registering for EMS 1860 or FIRE 1121/1122 you must complete a Health Record. <a href="https://www.cscs.edu/services/health-records.shtml">https://www.cscs.edu/services/health-records.shtml</a>                                                                                                                                                                                                                         |
| 9  | Schedule your classes (Contact Fire Science by email at <a href="mailto:fire@cscs.edu">fire@cscs.edu</a> if you need assistance)                                                                                                                                                                                                                                                                                                 |
| 10 | Register with Accessibility Services (if needed)- Eibling Hall 101, 614/287-2570 (Voice/TTY) <a href="https://www.cscs.edu/services/disability/">https://www.cscs.edu/services/disability/</a>                                                                                                                                                                                                                                   |
| 11 | Pay your fees- view the Web site at <a href="http://www.cscs.edu/academics/calendar/">http://www.cscs.edu/academics/calendar/</a> for deadline dates and the various ways you can pay your fees.                                                                                                                                                                                                                                 |
| 12 | Textbooks can be ordered online at: <a href="http://www.cscs.edu/services/bookstore/">http://www.cscs.edu/services/bookstore/</a> , or any number of online vendors. Texts purchased online must match the specified ISBN number.                                                                                                                                                                                                |
| 13 | Purchase a semester parking pass. <a href="https://www.cscs.edu/services/parking/student-parking.shtml">https://www.cscs.edu/services/parking/student-parking.shtml</a>                                                                                                                                                                                                                                                          |
| 14 | Obtain a Student ID card- Columbus Campus- Student Central, Upper-level Madison Hall (hours vary) <a href="https://www.cscs.edu/services/student-central.shtml">https://www.cscs.edu/services/student-central.shtml</a>                                                                                                                                                                                                          |
| 15 | Locate your classroom (Most Fire Science classes are held either online or at 5355 Alkire Rd. in the Aviation Maintenance Building) Please confirm the class location on your schedule.                                                                                                                                                                                                                                          |

COLUMBUS STATE  
COMMUNITY COLLEGE

Programs of Study

# Fire Science