

# FIRE SCIENCE (FIRE)

## FIRE 1100

### ***Introduction to Emergency Services***

3 Credit Hours

Students will explore the field of fire protection and emergency services. Career opportunities, culture and history of the fire service along with fire loss analysis are explored. Topics include public and private regulations affecting the fire service and basic chemistry of fire covering strategy and tactics of extinguishment. (3 lecture hours)

## FIRE 1101

### ***Basic Operations Firefighter- Mod A***

6 Credit Hours

This is a hybrid course that provides partial training toward Basic Operations Firefighter Certification by the Office of the State Fire Marshal. Topics discussed include orientation/organization, fire behavior, building construction, safety, communication, self-contained breathing apparatus (SCBA) extinguisher training, ropes and knots, hazardous material operations level, and the national incident management system (NIMS) 100 and 700 Course. Completion qualifies students for the State Fire Marshal Certification Test Module A. (3 lecture hours, 6 lab hours)

**Prerequisite:** As Per the current Office of the State Fire Marshal Illinois Administrative code 141.300-a. Student must be engaged in firefighting and a member of an organized Illinois fire department or Fire Brigade. Student must provide National Fire Protection Association (NFPA) compliant protection clothing and self-contained breathing apparatus (SCBA) in accordance with NFPA safety standards. Students must be clean-shaven.

## FIRE 1102

### ***Basic Operations Firefighter-B***

6 Credit Hours

Continuation of FIRE 1101. This is a hybrid course that provides partial training toward Basic Operations Firefighter Certification by the Office of the State Fire Marshal. Topics discussed include ladders, hose and appliances, nozzles and fire streams, water supply, forcible entry, ventilation, hazardous material operations level continuation, fire service vehicle operator. Completion qualifies students for the State Fire Marshal Certification Test Module B. (3 lecture hours, 6 lab hours)

**Prerequisite:** FIRE 1101 or equivalent and as Per the current Office of the State Fire Marshal Illinois Administrative code 141.300-a. Student must be engaged in firefighting and a member of an organized Illinois fire department or Fire Brigade. Student must provide National Fire Protection Association (NFPA) compliant protection clothing and self-contained breathing apparatus (SCBA) in accordance with NFPA safety standards. Students must be clean-shaven.

## FIRE 1103

### ***Basic Operations Firefighter-C***

6 Credit Hours

Continuation of FIRE 1102. This course is a hybrid that provides partial training toward Basic Operations Firefighter Certification by the Office of the State Fire Marshal. Topics discussed include search and rescue, fire control, loss control, protecting evidence, fire detection and alarm systems, prevention and public education, wild land and ground cover firefighting, firefighter survival, technical rescue awareness, completion of hazardous material operations level, and courage to be safe. Course completion qualifies students for the State Fire Marshal Certification Test Module C. (3 lecture hours, 6 lab hours)

**Prerequisite:** FIRE 1102 with a grade of C or better or equivalent and as per the current Office of the State Fire Marshal Illinois Administrative code 141.300-a. Student must be engaged in firefighting and a member of an organized Illinois fire department or Fire Brigade. Student must provide National Fire Protection Association (NFPA) compliant protection clothing and self-contained breathing apparatus (SCBA) in accordance with NFPA safety standards. Students must be clean-shaven.

## FIRE 1104

### ***Advanced Technician Firefighter***

4 Credit Hours

Continuation of FIRE 1101, FIRE 1102, FIRE 1103 sequence. The Advanced Technician Firefighter is considered by Office of the State Fire Marshal (OSFM) to be the senior technical level in the fire suppression career ladder. A state certified examination will be administered to determine qualification. (2 lecture hours, 4 lab hours)

**Prerequisite:** FIRE 1101, FIRE 1102, and FIRE 1103, or certification as a Firefighter II or Basic Operations Firefighter or consent of instructor.

## FIRE 1111

### ***Fire Prevention I***

3 Credit Hours

Fire Prevention I is for fire service personnel pursuing a Fire Officer I Certification or seeking a quality fire prevention foundation following the Illinois Office of the State Fire Marshal's guidelines. (3 lecture hours)

**Prerequisite:** Consent of Instructor or Fire Science Manager is required.

## FIRE 1112

### ***Principles of Fire Prevention***

3 Credit Hours

Principles of Fire Prevention provides the fundamental knowledge relating to the field of fire prevention and inspection. This course meets the National Fire Emergency Service Higher Education (FESHE) requirements. (3 lecture hours)

**Prerequisite:** FIRE 1100 or concurrent enrollment in FIRE 1100 or consent of instructor.

## FIRE 1113

### ***Fire Prevention Officer Module A***

3 Credit Hours

Designed for personnel whose duties are inspecting structures, conducting basic fire investigations and performing fire prevention education activities. (3 lecture hours)

## FIRE 1114

### ***Fire Prevention Officer Module B***

3 Credit Hours

Continuation of FIRE 1113, including knowledge of fire codes used in fire prevention and education. (3 lecture hours)

**Prerequisite:** FIRE 1113 with a grade of C or better or consent of instructor.

### **FIRE 1115**

#### ***Fire Prevention Officer Module C***

3 Credit Hours

Continuation of FIRE 1114 including development of student skills in public education and fire investigation. (3 lecture hours)

**Prerequisite:** FIRE 1114 with a grade of C or better or consent of instructor.

### **FIRE 1120**

#### ***Codes and Laws***

3 Credit Hours

Study supplemented by plan reviews of codes and standards that relate to fire prevention and life safety in structures and includes the relationship between building officials and fire prevention personnel. (3 lecture hours)

### **FIRE 1150**

#### ***CPR-Basic Life Support-Healthcare Prvdr***

1 Credit Hour

Cardiopulmonary resuscitation (CPR) is intended for healthcare providers who care for patients of all ages in a variety of settings, including hospitals and other healthcare settings. (2 lab hours)

**Course types:** Contemporary Life Skills (A.A., A.S., A.A.S., A.G.S.)

### **FIRE 1160**

#### ***CPR-Basic Life Support Instructor***

1 Credit Hour

Prepare American Heart Association (AHA) instructors to disseminate the science, skills, and philosophy of Cardiopulmonary Resuscitation (CPR) programs to participants enrolled in AHA courses. (2 lab hours)

**Prerequisite:** FIRE 1150 with a grade of C or better, or equivalent or consent of instructor.

### **FIRE 1181**

#### ***Public Safety Telecommunications I***

3 Credit Hours

An introduction into the exciting career of a 9-1-1 Public Safety Telecommunicator. Successful completion of this course is required to take the nationally-recognized Emergency Telecommunicator Certification test. Students will combine classroom and lab exercises to demonstrate the skills and abilities needed as a 9-1-1 Public Safety Telecommunicator. (2 lecture hours, 2 lab hours)

**Prerequisite:** Must be at least 18 years old with a high school diploma or equivalent. Writing Placement Category One and Reading Placement Category One are required.

### **FIRE 1182**

#### ***Public Safety Telecommunications II***

3 Credit Hours

Students will further develop the skills and abilities necessary to be a successful 9-1-1 Public Safety Telecommunicator. Using a combination of classroom and lab exercises, students will learn how to answer and process 9-1-1 calls and related radio traffic. (2 lecture hours, 2 lab hours)

**Prerequisite:** FIRE 1181 with a grade of C or higher or consent of instructor.

### **FIRE 1183**

#### ***Emergency Medical Responder***

5 Credit Hours

Students will be introduced to pre-hospital and emergency medical training. Basic medical treatments and practical skills in emergency medical care are included. (3 lecture hours, 4 lab hours)

### **FIRE 2201**

#### ***Extinguishing and Alarm Systems***

3 Credit Hours

Introductory course to familiarize public and private fire protection personnel with various types of fire protection systems. (2 lecture hours, 2 lab hours)

### **FIRE 2210**

#### ***Fire Apparatus***

3 Credit Hours

Study of the design, function and operating characteristics of motorized fire apparatus, including evaluation of custom and commercial chassis, power plant and fire pumps, and cost/benefit approach to apparatus purchasing. (3 lecture hours)

### **FIRE 2211**

#### ***Fire Apparatus Engineer***

3 Credit Hours

Continuation of FIRE 2210. Application and skills necessary to qualify for Fire Apparatus Engineer/Driver/Operator positions. Meets or exceeds the requirements of National Fire Protection Association (NFPA) 1002, Fire Apparatus Drive/ Operator Professional Qualifications. (2 lecture hours, 2 lab hours)

**Prerequisite:** FIRE 2210 or consent of instructor.

### **FIRE 2213**

#### ***Principles/Fire Behavior and Combustion***

3 Credit Hours

Introduction to the broad range of factors that cause a fire. The basics of fire chemistry and physics, ignition, fire growth, spread, and suppression are covered. (3 lecture hours)

**Prerequisite:** FIRE 1100 with a grade of C or better, or equivalent or consent of instructor.

### **FIRE 2215**

#### ***Building Construction***

3 Credit Hours

Provides the components of building construction related to firefighter and life safety. Elements of construction and design of structures are key factors when inspecting buildings, pre-planning fire operations, and operating at emergencies. (3 lecture hours)

**Prerequisite:** FIRE 1100 with a grade of C or better, or equivalent or FIRE 1103 with a grade of C or better, or equivalent or consent of instructor.

### **FIRE 2218**

#### ***Principles of Fire and Emergency Services Safety and Survival***

3 Credit Hours

Basic principles and history related to the national firefighter life safety initiatives, focusing on the need for cultural and behavior change throughout the emergency service. (3 lecture hours)

**Prerequisite:** FIRE 1100 with a grade of C or better, or equivalent or consent of instructor.

### **FIRE 2221**

#### ***Tactics I***

3 Credit Hours

Principles of coordinating fire ground tactics by utilization of manpower and equipment. Various fire situations presented for analysis and evaluation. (3 lecture hours)

**Prerequisite:** FIRE 1100 or consent of instructor.

**FIRE 2222*****Tactics II***

3 Credit Hours

Designed for the Fire Officer responsible for commanding a fire or emergency scene involving multiple companies. Subject areas include strategic concepts in fire fighting, duties and responsibilities of command officers, incident command system (scene, manpower, apparatus, and Rapid Intervention Teams (RIT) management), multi-company operations, disasters, high-rise operations, critical incident stress, and tactical exercises. (3 lecture hours)

**Prerequisite:** FIRE 2221 with a grade of C or better, or equivalent or consent of instructor.

**FIRE 2231*****Hazardous Materials Operations***

3 Credit Hours

Intended for members of a fire department or other first responder agency. Includes basic hazards and risk-assessment techniques for Haz-mat and Chemical, Biological, Radiological, Nuclear, and Explosive (CBRNE) environments. Perform basic control, containment and/or confinement operations. After successful completion of this course, first responders will be allowed to take the Office of the State Fire Marshal (OSFM) certification exam. (2 lecture hours, 2 lab hours)

**Prerequisite:** FIRE 2230 with a grade of C or better, or equivalent or consent of instructor.

**FIRE 2232*****Hazardous Materials Technician A***

3 Credit Hours

Laws regulating training requirements for the Hazardous Materials Technician A as set forth by Occupational Safety and Health Act (OSHA), Illinois Department of Labor (IDOL), Environmental Protection Agency (EPA), and the National Fire Protection Association (NFPA). Identifies a hazardous material incident, determines the magnitude of the problem, identifies and interprets hazard response information through the use of monitoring equipment. (2 lecture hours, 2 lab hours)

**Prerequisite:** FIRE 1104 and FIRE 2231 or state equivalents or consent of instructor.

**FIRE 2233*****Hazardous Materials Technician B***

3 Credit Hours

Continuation of Hazardous Materials Technician A involves the analysis and application of rescue procedures, tactics and strategies. Both Hazardous Materials A and B are required to satisfy National Fire Protection Association (NFPA) 472, Department of Labor (DOL), Occupational Safety and Health Act (OSHA), Environmental Protection Agency (EPA), and requirements of 29 Code of Federal Requirements(CFR) 1910.120. (2 lecture hours, 2 lab hours)

**Prerequisite:** FIRE 1104 and FIRE 2232 or state equivalents or consent of instructor.

**FIRE 2234*****Hazardous Materials Technician***

6 Credit Hours

Students will identify and interpret hazardous material incidents. Learned tactics and strategies will be applied to rescue and mitigation procedures. Other topics include the laws regulating training requirements for the Hazardous Materials Technician as set forth by Occupational Safety and Health Act (OSHA), Illinois Department of Labor (IDOL), Environmental Protection Agency (EPA), and the National Fire Protection Association (NFPA). (5 lecture hours, 2 lab hours)

**Prerequisite:** FIRE 2231 or equivalent and FIRE 1104 or equivalent, both with grade of C or better, or consent of instructor.

**FIRE 2250*****Incident Safety Officer***

3 Credit Hours

Students will learn to monitor training evolutions and incidents involving fire, emergency medical services, technical rescue, and hazardous materials, while simultaneously assessing current conditions, hazards, and risks. This class is intended for firefighters who will serve as an Incident Safety Officer (ISO). (3 lecture hours)

**Prerequisite:** FIRE 2255, FIRE 2257, and FIRE 2258, all with a grade of C or better, or equivalent, or consent of instructor.

**FIRE 2251*****Fire Leadership I***

3 Credit Hours

Fire fighting personnel will be introduced to management, supervision, and leadership skills. (3 lecture hours)

**Prerequisite:** FIRE 1103 with a grade of C or better, or equivalent or consent of instructor.

**FIRE 2252*****Fire Leadership II***

3 Credit Hours

Continuation of FIRE 2251 with emphasis placed on application of principles. (3 lecture hours)

**Prerequisite:** FIRE 2251 or consent of instructor.

**FIRE 2253*****Fire Leadership III***

3 Credit Hours

Continuation of FIRE 2252 analyzing and organizing personnel assignments. Developing personnel policies, preparing capital budgets and fiscal financing, developing public relations programs, and developing management systems for the fire service. (3 lecture hours)

**Prerequisite:** FIRE 2252 or consent of instructor.

**FIRE 2254*****Fire Leadership IV***

3 Credit Hours

Continuation of FIRE 2253 advanced personnel management, organizing health and safety programs, and labor relations. (3 lecture hours)

**Prerequisite:** FIRE 2253 or consent of instructor.

**FIRE 2255*****Fire Service Instructor I***

3 Credit Hours

Fundamentals as applied to in-service training for fire department personnel. The course meets or exceeds the requirements of the Office of the Illinois State Fire Marshals Division of Career Development and Public Education. (2 lecture hours, 2 lab hours)

**FIRE 2256*****Fire Service Instructor II***

3 Credit Hours

Curriculum planning, facilities layout and advanced teaching principles. The course meets or exceeds the requirements of the Office of the Illinois State Fire Marshals Division of Career Development and Public Education. (2 lecture hours, 2 lab hours)

**Prerequisite:** FIRE 2255 or consent of instructor.

#### **FIRE 2257**

##### ***Company Fire Officer Phase I***

3 Credit Hours

Students will be introduced to human resource management, community relations, and government relations utilized by the company fire officer. (3 lecture hours)

**Prerequisite:** FIRE 2255 and FIRE 1104, both with a grade of C or better, or equivalent, and concurrent enrollment in FIRE 2258, or consent of instructor.

#### **FIRE 2258**

##### ***Company Fire Officer Phase II***

5 Credit Hours

Students will be introduced to the company fire officer's role in administration, inspections, investigations, emergency medical services, and safety. (5 lecture hours)

**Prerequisite:** FIRE 2255 and FIRE 1104, both with a grade of C or better, or equivalent, and concurrent enrollment in FIRE 2257, or consent of instructor.

#### **FIRE 2260**

##### ***Fire Investigation***

3 Credit Hours

Techniques and procedures for the investigation of fires including the origin and causes of fires, fire behavior, chemistry of fire, structural fire patterns, detection of arson, role of the investigator, and role of the crime laboratory. (3 lecture hours)

**Prerequisite:** FIRE 1100 or consent of instructor.

#### **FIRE 2261**

##### ***Fire/Arson Investigation I***

3 Credit Hours

Designed for fire investigators to gain knowledge in scene examination, evidence investigation, fire protection technology and sketching. (3 lecture hours)

**Prerequisite:** FIRE 2260 or consent of instructor.

#### **FIRE 2262**

##### ***Fire/Arson Investigation II***

3 Credit Hours

Continuation of FIRE 2261 includes motives, communications, case presentations and explosives. (3 lecture hours)

**Prerequisite:** FIRE 2261 or consent of instructor.

#### **FIRE 2263**

##### ***Fire/Arson Investigation III***

3 Credit Hours

Continuation of FIRE 2262 includes crime scene photography, evidence collection, accelerant detection canines, arson for profit, and search and seizure. (3 lecture hours)

**Prerequisite:** FIRE 2262 or consent of instructor.

#### **FIRE 2264**

##### ***Advanced Fire Officer Phase I***

3 Credit Hours

Students will be introduced to labor relations, human resource management, community interaction, fire inspections, fire investigations, and emergency service delivery required of an advanced fire officer. (3 lecture hours)

**Prerequisite:** FIRE 2250 and FIRE 2256, both with grade of C or better, or equivalent, and concurrent enrollment in FIRE 2265, or consent of instructor.

#### **FIRE 2265**

##### ***Advanced Fire Officer Phase II***

5 Credit Hours

Students will be introduced to labor relations, human resource management, community interaction, fire inspections, fire investigations, and emergency service delivery required of an advanced fire officer. (5 lecture hours)

**Prerequisite:** FIRE 2250 and FIRE 2256, both with grade of C or better, or equivalent, and concurrent enrollment in FIRE 2264, or consent of instructor.

#### **FIRE 2267**

##### ***Fire Service Vehicle Operator***

1 Credit Hour

Designed for Firefighters or Engineers who are assigned, or may be assigned, to operate fire department apparatus safely in the normal course of their duties. (1 lecture hour)

**Prerequisite:** Consent of instructor is required and must be an active member of a fire department. Contact Fire Science Manager for permit to register.

#### **FIRE 2271**

##### ***Emergency Medical Technician (EMT)***

10 Credit Hours

Students will be introduced to emergency care skills and management of bleeding, fractures, airway obstruction, cardiac arrest, and emergency childbirth. Other areas include patient assessment skills and the use of common emergency equipment. (5 lecture hours, 8 lab hours, 2 clinical hours)

**Prerequisite:** Must be at least 18 years old with a high school diploma or equivalent, and pass the Writing Placement Test Score-Category One and Reading Placement Test Score-Category One or FIRE 1183 with a grade of B or better. Admission to program is required.

#### **FIRE 2272**

##### ***Paramedic Transition***

3 Credit Hours

Emergency Medical Technician (EMT) students will develop their knowledge and skills to better prepare them to be successful in paramedic school. (2 lecture hours, 2 lab hours)

**Prerequisite:** Current EMT license as an Emergency Medical Technician or consent of instructor.

#### **FIRE 2273**

##### ***Vehicle and Machinery Operations***

3 Credit Hours

Introductory step in the acquisition of all knowledge and skills required in the various specialties of extrication. (2 lecture hours, 2 lab hours)

**Prerequisite:** FIRE 1103 or consent of instructor.

#### **FIRE 2279**

##### ***Paramedic II***

12 Credit Hours

Students will integrate previously learned principles and skills with new theory and prepare for expanded responsibilities. Students will be introduced to additional hospital clinical rotations and the emergency department. (6 lecture hours, 4 lab hours, 8 clinical hours)

**Prerequisite:** FIRE 2278 with a grade of B or better, or equivalent or consent of instructor.

**FIRE 2280*****Paramedic III***

12 Credit Hours

Students will continue to learn the fundamentals of caring for patients in medical and traumatic emergencies. Students will also complete clinical rotations. Emphasis is placed on development of assessment practices and the integration of appropriate treatment modalities. (6 lecture hours, 12 clinical hours)

**Prerequisite:** FIRE 2279 with a grade of B or better, or equivalent or consent of instructor.

**FIRE 2282*****EMT Instructor Training***

3 Credit Hours

Designed to give the Emergency Medical Technician-Basic (EMT-B) an overview of the educational process for the adult learner. (2 lecture hours, 2 lab hours)

**Prerequisite:** FIRE 2271, consent of instructor, and approval of Illinois Department of Public Health (IDPH).

**FIRE 2283*****Emergency Medical Responder***

5 Credit Hours

Students will be introduced to pre-hospital and emergency medical training. Basic medical treatments and practical skills in emergency medical care are included. (3 lecture hours, 4 lab hours)

**FIRE 2285*****Trauma Assessment***

3 Credit Hours

The student will acquire the skills to assess acute, critical changes in physiological and psychological signs and symptoms in emergency trauma patients. (2 lecture hours, 2 lab hours)

**Prerequisite:** FIRE 2271 with a grade of C or better, or equivalent or consent of instructor.

**FIRE 2286*****Pediatric Education for Prehospital Professionals***

3 Credit Hours

Students will develop additional skills and knowledge of the prehospital professional who will provide care for the ill and injured children. (2 lecture hours, 2 lab hours)

**Prerequisite:** FIRE 2271 with a grade of C or better or consent of instructor.

**FIRE 2287*****Differential Medical Assessment***

3 Credit Hours

Students will gain advanced training and knowledge of assessment and management of medical emergencies. Students will build a strong foundation of differential medical assessment knowledge and skills through case-based scenarios and practical applications for patients. (2 lecture hours, 2 lab hours)

**Prerequisite:** FIRE 2271 with a grade of B or better, or equivalent or consent of instructor.

**FIRE 2820*****Advanced Selected Topics***

1-4 Credit Hours

Advanced exploration and analysis of selected topics with a specific theme indicated by course title listed in college class schedule. (1 to 3 lecture hours, 1 to 3 lab hours)

**FIRE 2861*****Fire Service Internship I***

5 Credit Hours

Semester 1 of a year-long (three semester) internship program. Accepted students will be considered apprentice members of the host fire department or fire protection district, undergoing training and riding at the fire department. (5 lab hours, 5 clinical hours)

**Prerequisite:** Illinois licensed EMT or AEMT or Paramedic; application to and acceptance by the host fire department or fire district; and consent of instructor.

**Course types:** Contemporary Life Skills (A.A., A.S., A.A.S., A.G.S.)

**FIRE 2862*****Fire Service Internship II***

5 Credit Hours

Semester 2 of a year-long (three semester) internship program. Accepted students will be considered apprentice members of the host fire department or fire protection district, undergoing training and riding at the fire department. (5 lab hours, 5 clinical hours)

**Prerequisite:** FIRE 2861 or consent of instructor.

**Course types:** Contemporary Life Skills (A.A., A.S., A.A.S., A.G.S.)

**FIRE 2863*****Fire Service Internship III***

5 Credit Hours

Semester 3 of a year long 3 semester internship program. Accepted students will be considered a apprentice member of the host fire department or fire protection district, undergoing training and working at the fire department. (5 lab hours, 5 clinical hours)

**Prerequisite:** FIRE 2862 or consent of instructor.

**Course types:** Contemporary Life Skills (A.A., A.S., A.A.S., A.G.S.)