FIRE SCIENCE

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. 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. (3 lecture hours, 6 lab hours)

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. Prerequisite: Fire Science 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. (3 lecture hours, 6 lab hours)

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. Prerequisite: Fire Science 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. (3 lecture hours, 6 lab hours)

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. Prerequisite: Fire Science 1101, Fire Science 1102, and Fire Science 1103, or certification as a Firefighter II or Basic Operations Firefighter or consent of instructor. (2 lecture hours, 4 lab hours)

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. Prerequisite: Consent of Instructor or Fire Science Manager is required. (3 lecture hours)

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. Prerequisite: Fire Science 1100 or concurrent enrollment in Fire Science 1100 or consent of instructor. (3 lecture hours)

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 Science 1113, including knowledge of fire codes used in fire prevention and education. Prerequisite: Fire Science 1113 with a grade of C or better or consent of instructor. (3 lecture hours)

FIRE 1115
Fire Prevention Officer Module C
3 Credit Hours
Continuation of Fire Science 1114 including development of student skills in public education and fire investigation. Prerequisite: Fire Science 1114 with a grade of C or better or consent of instructor. (3 lecture hours)
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)

FIRE 1160
CPR-Basic Life Support Instructor
3 Credit Hours
Prepare American Heart Association (AHA) instructors to disseminate the science, skills, and philosophy of Cardiopulmonary Resuscitation (CPR) programs to participants enrolled in AHA courses. Prerequisite: Fire Science 1150 with a grade of C or better, or equivalent or consent of instructor. (2 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 Science 2210. Application and skills necessary to qualify for Fire Apparatus Engineer/Driver/Operator positions. Prerequisite: Fire Science 2210 or consent of instructor. (2 lecture hours, 2 lab hours)

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. Prerequisite: Fire Science 1100 with a grade of C or better, or equivalent or consent of instructor. (3 lecture hours)

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. Prerequisite: Fire Science 1100 with a grade of C or better, or equivalent or Fire Science 1103 with a grade of C or better, or equivalent or consent of instructor. (3 lecture hours)

FIRE 2218
Principles/Firefighter Safety & 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. Prerequisite: Fire Science 1100 with a grade of C or better, or equivalent or consent of instructor. (3 lecture hours)

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. Prerequisite: Fire Science 1100 or consent of instructor. (3 lecture hours)

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. Prerequisite: Fire Science 2221 with a grade of C or better, or equivalent or consent of instructor. (3 lecture hours)

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. Prerequisite: Fire Science 2230 with a grade of C or better, or equivalent or consent of instructor. (2 lecture hours, 2 lab hours)

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. Prerequisites: Fire Science 1104 and Fire Science 2231 or state equivalents or consent of instructor. (2 lecture hours, 2 lab hours)
FIRE 2233
Hazardous Materials Technician A
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. Prerequisite: Fire Science 1104 and Fire Science 2232 or state equivalents or consent of instructor. (2 lecture hours, 2 lab hours)

FIRE 2234
Hazardous Materials Technician B
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). Prerequisite: Fire Science 2231 or equivalent and Fire Science 1104 or equivalent, both with a grade of C or better, or consent of instructor. (3 lecture hours, 2 lab hours)

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). Prerequisite: Fire Science 2255, Fire Science 2257, and Fire Science 2258, all with a grade of C or better, or equivalent, or consent of instructor. (3 lecture hours)

FIRE 2251
Fire Leadership I
3 Credit Hours
Fire fighting personnel will be introduced to management, supervision, and leadership skills. Prerequisite: Fire Science 1103 with a grade of C or better, or equivalent or consent of instructor. (3 lecture hours)

FIRE 2252
Fire Leadership II
3 Credit Hours
Continuation of FIRE 2251 with emphasis placed on application of principles. Prerequisite: Fire Science 2251 or consent of instructor. (3 lecture hours)

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. Prerequisite: Fire Science 2252 or consent of instructor. (3 lecture hours)

FIRE 2254
Fire Leadership IV
3 Credit Hours
Continuation of FIRE-2253 advanced personnel management, organizing health and safety programs, and labor relations. Prerequisite: Fire Science 2253 or consent of instructor. (3 lecture hours)

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. Prerequisite: Fire Science 2255 or consent of instructor. (2 lecture hours, 2 lab hours)

FIRE 2257
Company Fire Officer Phase I
5 Credit Hours
Students will be introduced to human resource management, community relations, and government relations utilized by the company fire officer. Prerequisite: Fire Science 2255 and Fire Science 1104, both with a grade of C or better, or equivalent, and concurrent enrollment in Fire Science 2258, or consent of instructor. (5 lecture hours)

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. Prerequisite: Fire Science 2255 and Fire Science 1104, both with a grade of C or better, or equivalent, and concurrent enrollment in Fire Science 2257, or consent of instructor. (5 lecture hours)

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. Prerequisite: Fire Science 1100 or consent of instructor. (3 lecture hours)

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. Prerequisite: Fire Science 2260 or consent of instructor. (3 lecture hours)
FIRE 2262
**Fire/Arson Investigation II**  
3 Credit Hours  
Continuation of FIRE 2261 includes motives, communications, case presentations and explosives. Prerequisite: Fire Science 2261 or consent of instructor. (3 lecture hours)

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. Prerequisite: Fire Science 2262 or consent of instructor. (3 lecture hours)

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. Prerequisite: Fire Science 2250 and Fire Science 2256, both with grade of C or better, or equivalent, and concurrent enrollment in Fire Science 2264, or consent of instructor. (5 lecture hours)

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. Prerequisite: Fire Science 2250 and Fire Science 2256, both with grade of C or better, or equivalent, and concurrent enrollment in Fire Science 2264, or consent of instructor. (5 lecture hours)

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. Prerequisite: Consent of instructor is required and must be an active member of a fire department. Contact Fire Science Manager for permit to register. (1 lecture hour)

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. 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 Science 2283 with a grade of B or better. Admission to program is required. (5 lecture hours, 8 lab hours, 2 clinical hours)

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. Prerequisite: Current EMT license as an Emergency Medical Technician or consent of instructor. (2 lecture hours, 2 lab hours)

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. Prerequisite: Fire Science 1103 or consent of instructor. (2 lecture hours, 2 lab hours)

FIRE 2274  
**Paramedic I**  
8 Credit Hours  
Students will be introduced to the role of the paramedic and the ethical and legal aspects that influence field practice skills. Emphasis will be placed on a foundational understanding of pathophysiology, lifespan development, pharmacology, medication administration, assessment, communication, documentation, medical conditions, diseases, and treatment protocols. Prerequisite: Illinois licensed Emergency Medical Technician (EMT) and acceptance into the paramedic program. Fire Science 2271 with a grade of B or better or equivalent, Anatomy & Physiology 1500 with a grade of C or better or equivalent, Health Sciences 1110 with a grade of C or better, or equivalent and English 1101 with a grade of C or better, or equivalent. Course requires Reading Placement Test Score-Category One or equivalent. (4 lecture hours, 6 lab hours, 2 clinical hours)

FIRE 2275  
**Paramedic II**  
8 Credit Hours  
The student will integrate previously learned principles and skills with new theory, preparing the student for expanded medical responsibilities. Further emphasis will be placed on the pharmacological agents and adjunctive equipment utilized in pre-hospital care. Prerequisite: Fire Science 2274 or consent of instructor. (4 lecture hours, 6 lab hours, 2 clinical hours)

FIRE 2276  
**Paramedic III**  
8 Credit Hours  
Students will be introduced to additional hospital clinical rotations and the emergency department. The practice of paramedicine will expand into areas of trauma, environmental extremes, hazardous materials, transport operations, disasters, and vehicle extrication. Prerequisite: Fire Science 2275 or consent of instructor. (4 lecture hours, 2 lab hours, 6 clinical hours)

FIRE 2277  
**Paramedic IV**  
8 Credit Hours  
Students will continue to learn the fundamentals of caring for patients in medical and traumatic emergencies, with clinical experience in a pre-hospital setting. Emphasis is placed on development of assessment practices and the integration of appropriate treatment modalities. Prerequisite: Fire Science 2276 or consent of instructor. (2 lecture hours, 12 clinical hours)

FIRE 2278  
**Paramedic I**  
12 Credit Hours  
Students will be introduced to the role of the paramedic and the ethical and legal aspects that influence field practice skills.
Emphasis will be placed on a foundational understanding of pathophysiology, lifespan development, pharmacology, medication administration, assessment, communication, documentation, medical conditions, diseases, and treatment protocols. Prerequisite: Illinois licensed Emergency Medical Technician (EMT) and acceptance into the paramedic program. Fire Science 2271 with a grade of B or better or equivalent, Anatomy & Physiology 1500 with a grade of C or better or equivalent, Health Sciences 1110 with a grade of C or better, or equivalent and English 1101 with a grade of C or better, or equivalent or consent of instructor. (6 lecture hours, 8 lab hours, 4 clinical hours)

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. Prerequisite: FIRE 2278 with a grade of B or better, or equivalent or consent of instructor. (6 lecture hours, 4 lab hours, 8 clinical hours)

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. Prerequisite: FIRE 2279 with a grade of B or better, or equivalent or consent of instructor. (6 lecture hours, 12 clinical hours)

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. Prerequisite: Fire Science 2271, consent of instructor, and approval of Illinois Department of Public Health (IDPH). (2 lecture hours, 2 lab hours)

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
Provides licensed Emergency Medical Technicians (EMT) with knowledge of acute, critical changes in physiological and psychological signs and symptoms in pre-hospital emergency care of pediatric, adult, and geriatric patients. Prerequisite: Fire Science 2271 with a grade of C or better, or equivalent or consent of instructor. (2 lecture hours, 2 lab hours)

FIRE 2286
**Pediatric Education for Prehospital Prof**
3 Credit Hours
Students will develop additional skills and knowledge of the prehospital professional who will provide care for the ill and injured children. Prerequisite: Fire Science 2271 with a grade of C or better or consent of instructor. (2 lecture hours, 2 lab hours)

FIRE 2287
**Differential Medical Assessment**
3 Credit Hours
Students will gain advanced training and knowledge of assessment and management of medical emergencies. Emergency Medical Technician (EMT) students build a strong foundation of differential medical assessment knowledge and skills through case-based scenarios and practical applications for patients. Prerequisite: Fire Science 2271 with a grade of B or better, or equivalent or consent of instructor. (2 lecture hours, 2 lab hours)

FIRE 2820
**Advanced Selected Topics**
1 to 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)