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, hoses 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)
structures are key factors when inspecting buildings, pre-planning firefighter and life safety. Elements of construction and design of buildings are covered. Prerequisite: Fire Science 1100 with a grade of C or better, or equivalent or consent of instructor. (3 lecture hours)

**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. 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. Meets or exceeds the requirements of National Fire Protection Association (NFPA) 1002, Fire Apparatus Drive/ Operator Professional Qualifications. 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 2230**  
**Hazardous Materials Awareness**  
3 Credit Hours  
First responders will gain the knowledge and skills associated with hazardous substances, the risks associated with them, and the role of the emergency responder. Review of the U.S. Department of Transportation Emergency Guidebook and other resources, and appropriate notifications to the community. 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 1100 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  
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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 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. Prerequisite: Fire Science 1104 and Fire Science 2232 or state equivalents or consent of instructor. (2 lecture hours, 2 lab hours)

FIRE 2240
*Industrial Safety*
3 Credit Hours
Precautions and safeguards essential for protection of lives and property in various types of occupational establishments. (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 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 2266
*Technical Rescue Awareness (TRA)*
1 Credit Hour
First responders are prepared with the information needed to identify the rescue situation, its specific hazards, and the initial company operations to be performed. 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 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
Course includes emergency care skills, including management of bleeding, fractures, airway obstruction, cardiac arrest and emergency childbirth. Also addresses patient assessment skills and the use and maintenance of common emergency equipment. Completion of this course with a grade of B or better qualifies students to sit for the state or national exam. 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, 10 lab 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
Introduction to advanced emergency medical services including the role of the paramedic and the ethical and legal aspects that influence field practice skills basic to the care of all patients Prerequisite: Fire Science 2271, consent of instructor and acceptance by a hospital; program admission approval required. (4 lecture hours, 8 lab hours)

FIRE 2275
Paramedic II
8 Credit Hours
Continuation of FIRE-2274 integration of previously learned principles and skills and the introduction of new theory, preparation of the learner for expanded medical responsibilities. Further emphasis on the pharmacological agents and adjunctive equipment utilized in pre-hospital care. Prerequisite: Fire Science 2274 or consent of instructor. (4 lecture hours, 8 lab hours)

FIRE 2276
Paramedic III
8 Credit Hours
Continuation of Fire Science 2275 practice of paramedicine in the care of patients with cardiovascular disorders. In-depth study in anatomy and pathophysiology relevant to cardiovascular disorders, arrhythmia identification and subsequent treatment. Experiences in telemetry monitoring, emergency department, and intensive care unit rotations. Prerequisite: Fire Science 2275 or consent of instructor. (4 lecture hours, 8 lab hours)

FIRE 2277
Paramedic IV
8 Credit Hours
Continuation of Fire Science 2276 skills and fundamentals for the care of the patient in medical or traumatic emergencies. Emphasis is placed on development of assessment practices and the integration of appropriate treatment modalities in a pre-hospital setting. Prerequisite: Fire Science 2276 or consent of instructor. (4 lecture hours, 8 lab 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. Students have the opportunity to earn their cardiopulmonary resuscitation credentials and complete the state-approved cognitive and psychomotor exams. (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)

FIRE 2860
*Internship (Career & Technical Ed)*
1 to 4 Credit Hours
Course requires participation in Career and Technical Education work experience with onsite supervision. Internship learning objectives are developed by student and faculty member, with approval of employer, to provide appropriate work-based learning experiences. Credit is earned by working a minimum of 75 clock hours per semester credit hour, up to a maximum of four credits. Prerequisite: Consent of instructor and 2.0 cumulative grade point average; 12 semester credits earned in a related field of study; students work with Career Services staff to obtain approval of the internship by the Dean from the academic discipline where the student is planning to earn credit.

FIRE 2865
*Internship Advanced (Career & Tech Ed)*
1 to 4 Credit Hours
Continuation of Internship (Career and Technical Education). Course requires participation in Career & Technical Education work experience with onsite supervision. Internship learning objectives are developed by student and faculty member, with approval of employer, to provide appropriate work-based learning experiences. Credit is earned by working a minimum of 75 clock hours per semester credit hour, up to a maximum of four credits. Prerequisite: Consent of instructor and 2.0 cumulative grade point average; 12 semester credits earned in a related field of study; students work with Career Services staff to obtain approval of the internship by the Dean from the academic discipline where the student is planning to earn credit.