

# Fire Science

## FIRE 115 Orientation to Fire Fighting (4 credit, 4 lecture, 0 lab)

Introduces the recruit firefighter to the fire science program. Subjects included: Fire Department Organization, Fire Behavior, Portable Extinguishers, Self-contained Breathing Apparatus, Building Conditions, Fire Hose and Appliances, Ropes and Knots, Communication and Safety. Course is designed to meet all objectives set forth in Module A by the Office of the State Fire Marshal for Basic Operations Firefighter certification.

## FIRE 116 Fire Suppression Techniques (4 credit, 4 lecture, 0 lab)

Introduces the recruit firefighter to fire suppression techniques that occur on the fire ground during all stages of a fire. Subjects included: Ladders, Hose and Appliances, Water Supply, Forcible Entry, Fire Streams, and Ventilation. Course is designed to meet all objectives set forth in Module B of the Office of the State Fire Marshall for Basic Operations Firefighter Certification.

## FIRE 117 Loss Control (4 credit, 4 lecture, 0 lab)

Introduces the recruit firefighter to the non-suppression support activities in the fire service. Subjects include: search and rescue, fire control, protecting evidence, fire detection, prevention and public education, firefighter survival. Course is designed to meet all objectives set forth in Module C of the Office of the State Fire Marshall for Basic Operations Firefighter Certification.

## FIRE 132 Fire Instructor I (3 credit, 3 lecture, 0 lab)

Instructor I is designed to give the student the knowledge and ability to teach from prepared materials which are predominantly skills oriented. Areas covered include: communication, concepts of learning, human relations in the teaching-learning environment, methods of teaching, organizing the learning environment, records and reports, testing and evaluation, instructor's roles and responsibilities, teaching techniques, and use of instructional materials. **Pre-Requisite:** Illinois OSFM FFII Certification, or FIRE 115, FIRE 116, and FIRE 117.

## FIRE 133 Fire Instructor II (3 credit, 3 lecture, 0 lab)

Emphasis of the Instructor II course is placed on teaching formalized lessons from materials prepared by the instructor, including relating information from one lesson or class to the next. **Pre-Requisite:** IL OSFM Instructor I certification or FIRE 132 or equivalent

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## FIRE 134 Strategy & Tactics II (3 credit, 3 lecture, 0 lab)

This course is designed for the individual who is responsible for commanding one to two companies at the fire or emergency scene. Subject areas which will be covered are: Company Officer leadership, safety, fire behavior, pre-fire planning, building construction, firefighting tactics, engine and ladder company operations and tactical exercises. This course will meet the requirements required by the OSFM in Illinois for certification towards Fire Officer I. **Pre-Requisite:** Illinois Fire Fighter II certification or equivalent; or FIRE 115 and FIRE 116.

## FIRE 135 Hazardous Materials Operations (3 credit, 2 lecture, 2 lab)

This course is designed to teach the student knowledge of basic hazard and risk assessment techniques, knowledge of selecting and using proper personal protective equipment provided to the first responder operational level, knowledge of performing basic control, containment and/or confinement operations within the capabilities of the resources and equipment available. **Pre-Requisite:** Fire Fighter II and Hazardous Materials Awareness.

## FIRE 136 Fire Prevention Principles (3 credit, 2.5 lecture, 1 lab)

Fire Prevention Principles covers materials in the areas of fire inspection, fire investigation, and fire cause determination. Inspection topics include: laws, codes, ordinances, life safety code applications, building construction, occupancy, and inspection techniques, installed systems and water supply. Fire investigation concentrates on determining point of origin and cause. **Pre-Requisite:** IL OSFM FFII Certification or FIRE 115, FIRE 116 and FIRE 117.

## FIRE 137 Certified FF III Mod A (3 credit, 2 lecture, 2 lab)

This course is designed for the student who wishes to go beyond the Firefighter II certification. Topics include orientation, SCBA, fire behavior, ladders and hose. **Pre-Requisite:** IL OSFM FFII certification.

## FIRE 138 Certified FF III Mod B (3 credit, 2 lecture, 2 lab)

This course is designed for the student who wishes to go beyond the Firefighter II certification. Topics include rescue, nozzles & fire streams, ventilation, water supply, overhaul, building construction. **Pre-Requisite:** IL OSFM FFII certification.

## FIRE 139 Certified FF III Mod C (3 credit, 2 lecture, 2 lab)

This course is designed for the student who wishes to go beyond the Firefighter II certification. Topics include ropes and knots, communications, sprinkler systems, fire prevention, public fire education, fire cause determination. **Pre-Requisite:** IL OSFM FFII certification.

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## FIRE 150 Strategy & Tactics I (3 credit, 3 lecture, 0 lab)

This course is designed for the individual who is responsible for commanding a fire or emergency scene involving multiple companies. Subject areas include strategic concepts in firefighting, duties and responsibilities of command officers, ICS system, and multiple company operations. **Pre-Requisite:** FF II certification or equivalent.

## FIRE 153 Fire Management Principles I (3 credit, 3 lecture, 0 lab)

Fire Management Principles I is designed to provide the Fire Officer, who is in charge of a single fire company or station, with information and skills in supervisory practices, personnel management, and budget. Areas of instruction will include: the role and function of the Company Fire Officer, basic management principles and concepts, leadership, motivation, order giving, discipline and conflict resolution. Requires 40 clock hours of instruction. **Pre-Requisite:** Fire Fighter II Certification.

## FIRE 154 Fire Management Principles II (3 credit, 3 lecture, 0 lab)

The Fire Management Principles II course is designed to provide the Fire Officer, who is in charge of a single fire company or station, with information skills in personnel management. The course provides coverage in the areas of basic communications, report writing, inter-personal communication, group dynamics, coaching and counseling skills, and performance appraisal. Requires 40 clock hours of instruction. **Pre-Requisite:** Fire 153.

## FIRE 159 Fire Service Vehicle Operations (4 credit, 4 lecture, 0 lab)

Introduces the recruit firefighter to the basic knowledge and skills to safely perform Fire Service Vehicle Operations, as it applies to classroom skills only, as defined by NFPA 1451, Fire Service Vehicle Operations Program. Course is designed to meet all criteria set forth by the Office of the State Fire Marshall for Basic Operations Firefighter Certification program.

## FIRE 170 Technical Rescue Awareness (1 credit, 1 lecture, 0 lab)

Technical Rescue Awareness is a prerequisite for all new “operations” level rescue programs. Areas of instruction include structural collapse, rope, confined space, vehicle and machinery, water, wilderness and trench rescues. This course may be offered for variable credit and repeatable three times.

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## FIRE 191 Fire Brigade Level I (3 credit, 3 lecture, 0 lab)

The initial class for the instruction of underground coal miners in the location and use of firefighting equipment, location of escape-ways, and exits. Trainees will become familiar with the proper routes of travel to the surface and proper evacuation procedures to be followed in the event of an emergency. Scenarios appropriate for beginners will be used in the burn tunnel. This course will meet or exceed the Federal requirements for new Fire Brigade Members. This course may be team taught with industry. Content may vary based on specific mine plans and state and federal requirements. This course may be repeated 3 times and may be offered as variable credit. **Pre-Requisite:** Employer verification of initial safety and SCBA training.

## FIRE 192 Fire Brigade Level II (3 credit, 3 lecture, 0 lab)

A continuation of FIRE 191 Beginning Fire Brigade Level I. The course consists of beginning level instruction for underground coal miners in the safe techniques for fighting flammable, electrical and equipment fires. Trainees will be required to demonstrate safe firefighting techniques as part of a team. Mine specific scenarios appropriate for beginners will be used in the Burn Tunnel in light smoke. This course will meet or exceed the Federal requirements for new Fire Brigade Members. This course may be team taught with industry. Content may vary based on specific mine plans and state and federal requirements. This course may be repeated three times and may be offered as variable credit. **Pre-Requisite:** FIRE 191 or consent of instructor.

## FIRE 193 Fire Brigade Level III (3 credit, 3 lecture, 0 lab)

A continuation of FIRE 192. A mid-level program for the instruction of underground coal miners in fire drill techniques based on a mine specific plan for evacuation; location of escape-ways, and particular routes of travel to the surface following an emergency. Trainees will be introduced to the use of “live fire props” as a training tool for fighting fires, with special emphasis on the use of the fire ladder. Mine specific scenarios appropriate for intermediate fire brigade members will be used in the Burn Tunnel in moderate smoke. This course will meet or exceed the Federal requirements for Fire Brigade Members. This course may be team taught with industry. Content may vary based on specific mine plans and state and federal requirements. This course may be repeated 3 times and may be offered as variable credit. **Pre-Requisite:** FIRE 191 and FIRE 192, or consent of the instructor.

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## FIRE 194 Fire Brigade Level IV (3 credit, 3 lecture, 0 lab)

A continuation of FIRE 193, Intermediate program for the instruction of underground coal miners in the team approach to firefighting and evacuation. Trainees will demonstrate all aspects of firefighting and evacuation procedures as required in the Code of Federal Regulations (Part 75.1101-23) and as outlined in their mine specific firefighting and evacuation plan. Trainees will utilize various “live fire props” during training to simulate various types of mine fires. Mine specific scenarios appropriate for intermediate fire brigade members will be used in the Burn Tunnel. This course will meet or exceed the Federal requirements for Fire Brigade Members. This course may be team taught with industry. Content may vary based on specific mine plans and state and federal requirements. This course may be repeated 3 times and may be offered as variable credit. **Pre-Requisite:** FIRE 191, 192, and 193, or instructor consent.

## FIRE 195 Fire Brigade Level V (3 credit, 3 lecture, 0 lab)

An advanced program for the instruction of underground coal miners in the location and use of firefighting equipment, and the location of escape ways to the surface. Utilizing a mine specific map that contains a mock fire, each trainee will map the specific action their team will take to control or maintain the fire area. Mine specific scenarios appropriate for advanced fire brigade members will be used in the Burn Tunnel, these scenarios will include the use of “live fire props” in a mine fire. This course will meet or exceed the Federal requirements for Fire Brigade Members. This course may be team taught with industry. Content may vary based on specific mine plans and state and federal requirements. This course may be repeated 3 times and may be offered as variable credit. **Pre-Requisite:** FIRE 191, 192, 193 and 194, or instructor consent.

## FIRE 196 Fire Brigade Level VI (3 credit, 3 lecture, 0 lab)

A continuation of FIRE 195 Advanced Fire Brigade Level 5. Trainees will develop a procedural route to safety as part of an emergency evacuation of their mine. This will include identifying proper procedures such as a specific meeting area, accounting of all individuals and de-energizing of electrical equipment, securing the area, communication with outside parties and routes to be taken. Mine specific scenarios appropriate for advanced fire brigade members will be used in the Burn Tunnel. This course will meet or exceed the Federal requirements for Fire Brigade Members. This course may be team taught with industry. Content may vary based on specific mine plans and state and federal requirements. This course may be repeated 3 times and may be offered as variable credit. **Pre-Requisite:** FIRE 191, FIRE 192, FIRE 193, FIRE 194, and FIRE 195, or instructor consent.

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## FIRE 197 Beginning Mine Rescue (3 credit, 3 lecture, 0 lab)

The U.S. Department of Labor’s Mine Safety and Health Administration (MSHA) requires that every operator of an underground mine establish “at least two mine rescue teams” and that each team member and alternate be “fully qualified, trained, and equipped to provide emergency mine rescue service” (Part 49.2(a)(1) and (b)). This course is designed to meet or exceed the requirements of Title 30, CFR, Part 49, which pertains to the training of rescue teams and their personnel. Scenarios appropriate for beginner mine rescue members will be used in the Burn Tunnel in light smoke. This course may be team taught with industry. Content may vary based on specific mine plans and state and federal requirements. This course may be repeated three times and may be offered as variable credit. **Pre-Requisite:** Employer verification of initial safety and SCBA training.

## FIRE 198 Intermediate Mine Rescue (3 credit, 3 lecture, 0 lab)

This course is a continuation of FIRE 197, Beginning Mine Rescue. Intermediate Mine Rescue is the second course in the progression of the mine rescue series of courses designed to meet or exceed the requirements of Title 30, CFR, Part 49, which pertains to the training of rescue teams and their personnel. Trainees will demonstrate the principles of mine rescue and current national mine rescue contest rules. Scenarios appropriate for intermediate mine rescue members will be used in the Burn Tunnel in moderate smoke. This course may be team taught with industry. Content may vary based on specific mine plans and state and federal requirements. This course may be repeated 3 times and may be offered as variable credit. **Pre-Requisite:** FIRE 197 or instructor consent.

## FIRE 199 Advanced Mine Rescue (3 credit, 3 lecture, 0 lab)

Advanced Mine Rescue is the third course in the progression of the mine rescue series of courses designed to meet or exceed the requirements of Title 30, CFR, Part 49, which pertains to the training of rescue teams and their personnel. Trainees will illustrate the mine rescue communication system of their specific mine and demonstrate mine rescue team techniques appropriate for advanced Mine Rescue Teams. Scenarios appropriate for advanced mine rescue members will be used in the Burn Tunnel in heavy smoke. This course may be team taught with industry. Content may vary based on specific mine plans and state and federal requirements. This course may be repeated three times and may be offered as variable credit. **Pre-Requisite:** FIRE 197 and 198, or instructor consent.

## FIRE 290 Selected Topics in Fire Science (3 credit, 3 lecture, 0 lab)

An in-depth study of topics in fire science. The exact content will vary from semester to semester depending on the subject studied. This course may be repeated if different topics are considered, but cannot exceed a total of six (6) credit hours toward graduation. **Pre-Requisite:** Consent of instructor.

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## FIRE 291 Fire Brigade Training (1 credit, 0 lecture, 2 lab)

A course designed to equip coal miners and other industry employees with first responder fire brigade skills. Safe use of firefighting equipment is taught. Instruction for fighting flammable liquid fires, removing victims from the fire scene, and SCBA donning and doffing procedures is given. Working as a team member is stressed. All students participate in evolutions in the burn tower. This course may be repeated, but cannot exceed a total of six (6) credit hours toward graduation. May be offered as a variable credit. **Pre-Requisite:** Consent of Instructor.