



Wayne County Community College District

COURSE SYLLABUS

FPT 110 Fire Fighter I Lecture

CREDIT HOURS: 8.00

CONTACT HOURS: 120.00

COURSE DESCRIPTION:

This course is designed to provide a student with the knowledge necessary for entry level positions on fire departments. Topics include fire fighter safety, personal protection equipment, hose operations, ladders, fire prevention, and others. Students who complete all course requirements will be eligible to take the State of Michigan Fire Fighter Training Council (MFFTC) written and practical examinations leading to certification as a Fire Fighter I. This course must be taken in conjunction with FPT 115.

PREREQUISITES: *Program admission*

COREQUISITE: *FPT 115*

EXPECTED COMPETENCIES:

Upon successful completion of this course, the student will:

- Describe the history and culture of the fire service.
- Describe the mission of the fire service.
- Define fire department organizational principles.
- Distinguish among functions of fire companies.
- Summarize primary knowledge and skills the firefighter must have to function effectively.
- Distinguish among the primary roles of fire service personnel.
- Distinguish among policies, procedures, and standard operating procedures (SOPs).
- Summarize components of the Incident Command System (ICS).
- Distinguish among the functions of the major subdivisions within the ICS structure.
- Define ICS terms.
- Discuss fire service interaction with other organizations.
- List ways to prevent firefighter injuries.
- Discuss National Fire Protection Association standards related to firefighter health and safety.
- Discuss Occupational Safety and Health Administration regulations.
- Summarize the IFSTA Principles of Risk Management.
- List the main goals of a safety program.
- Discuss firefighter health considerations and employee assistance and wellness programs.
- List guidelines for riding safely on the apparatus.
- Discuss safety in the fire station.
- *Describe ways to maintain safety in training.*
- Explain how to maintain and service equipment used in training.
- Discuss emergency scene preparedness.
- Discuss emergency scene preparedness.
- Discuss emergency scene safety.
- Summarize general guidelines for scene management including highway incidents, crowd control, and cordoning off emergency scenes.
- Explain the importance of personnel accountability.
- Summarize basic interior operations techniques.
- Describe emergency escape and rapid intervention.
- Describe physical and chemical changes of matter related to fire.



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- Discuss modes of combustion, the fire triangle, and the fire tetrahedron.
- Explain the difference between heat and temperature.
- Describe sources of heat energy.
- Discuss the transmission of heat.
- Explain how the physical states of fuel affect the combustion process.
- Explain how oxygen concentration affects the combustion process.
- Discuss the self-sustained chemical reaction involved in the combustion process.
- Describe common products of combustion.
- Distinguish among classifications of fires.
- Describe the stages of fire development within a compartment.
- Summarize factors that affect fire development within a compartment.
- Describe methods used to control and extinguish fire.
- Describe common building materials.
- Describe construction types and the effect fire has on the structural integrity of the construction type.
- Identify the primary strengths and weaknesses of construction types.
- Describe dangerous building conditions created by a fire or by actions taken while trying to extinguish a fire.
- *Identify indicators of building collapse.*
- List actions to take when imminent building collapse is suspected.
- Describe hazards associated with lightweight and truss construction.
- Describe the purpose of protective clothing and equipment.
- Describe characteristics of protective clothing and equipment.
- Summarize guidelines for the care of personal protective clothing.
- List the four common respiratory hazards associated with fires and other emergencies.
- Distinguish among characteristics of respiratory hazards.
- Describe physical, medical, and mental factors that affect the firefighter's ability to use respiratory protection effectively.
- Describe equipment and air-supply limitations of SCBA.
- Discuss effective air management.
- Distinguish among characteristics of air-purifying respirators, open-circuit SCBA, and closed-circuit SCBA.
- Describe basic SCBA component assemblies.
- Discuss storing protective breathing apparatus.
- Summarize recommendations for the use of PASS devices.
- Describe precautionary safety checks for SCBA.
- Discuss general donning and doffing considerations for SCBA.
- Summarize general items to check in daily, weekly, monthly, and annual SCBA inspections.
- Summarize safety precautions for refilling SCBA cylinders.
- Discuss safety precautions for SCBA use.
- Describe actions to take in emergency situations using SCBA.
- Discuss operating in areas of limited visibility while wearing SCBA.
- Discuss exiting areas with restricted openings under emergency conditions while wearing SCBA.
- Describe methods by which agents extinguish fire.
- List mechanisms by which portable extinguishers expel their contents.
- Distinguish among classifications of fires and the most common agents used to extinguish them.



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- Describe types of extinguishers and their common uses.
- Discuss extinguishers and agents for metal fires.
- Explain the portable extinguisher rating system.
- Describe factors to consider in selecting the proper fire extinguisher.
- Describe items to check for immediately before using a portable fire extinguisher.
- Describe the PASS method of application.
- Summarize procedures that should be part of every fire extinguisher inspection.
- Discuss damaged portable fire extinguishers and obsolete portable fire extinguishers.
- Compare and contrast the characteristics of life-safety rope and utility rope.
- Summarize criteria for reusing life-safety rope.
- Describe rope materials.
- Describe types of rope construction.
- Summarize basic guidelines for rope maintenance.
- Explain procedures for storing life-safety rope.
- Describe webbing and webbing construction.
- Describe parts of a rope and considerations in tying a knot.
- Describe knot characteristics and knot elements.
- Describe characteristics of knots commonly used in the fire service.
- Select commonly used rope hardware for specific applications.
- Summarize hoisting safety considerations.
- Discuss rescue rope and harness.
- Distinguish between rescue and extrication operations.
- Summarize safety guidelines for search and rescue personnel operating within a burning building.
- Explain the objectives of a building search.
- Describe primary search and secondary search.
- Discuss conducting search operations.
- Explain what actions a firefighter should take when in distress.
- Describe actions that should be taken by a rapid intervention crew (RIC) when a firefighter is in distress.
- Discuss victim removal methods.
- Discuss emergency power and lighting equipment.
- Select appropriate cutting tools for specific applications.
- Discuss manual and hydraulic prying tools.
- Discuss pushing/pulling tools and striking tools.
- Summarize forcible entry tool safety rules.
- Describe correct methods for carrying forcible entry tools.
- Summarize general care and maintenance practices for forcible entry tools.
- Explain items to look for in sizing up a door.
- Describe the characteristics of various types of wooden swinging doors.
- Describe the characteristics of various types of metal swinging doors.
- Describe the characteristics of various types of sliding doors, revolving doors, and overhead doors.
- Explain how fire doors operate.
- Describe the characteristics of basic types of locks.
- Describe rapid-entry lockbox systems.
- Describe methods of forcible entry through doors.
- Describe methods of through-the-lock forcible entry for doors.



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- Explain action that can be taken to force entry involving padlocks.
- Describe ways of gaining entry through gates and fences.
- List hazards in forcing windows.
- Describe types of windows and entry techniques.
- Describe techniques for breaching walls.
- Describe techniques for breaching floors.
- Describe parts of a ladder.
- Describe types of ground ladders used in the fire service.
- Discuss materials used for ladder construction.
- Discuss ladder maintenance and cleaning.
- Summarize items to check for when inspecting and service testing ladders.
- Summarize factors that contribute to safe ladder operation.
- Discuss selecting the proper ladder for the job.
- Summarize items to consider before removing and replacing ladders on apparatus.
- Describe proper procedures to follow when lifting and lowering ground ladders.
- Describe various types of ladder carries.
- Explain proper procedures for positioning ground ladders.
- Explain precautions to take before raising a ladder.
- Describe various types of ladder raises.
- Describe procedures for moving ground ladders.
- Describe heeling and tying in ground ladders.
- List guidelines for climbing ladders.
- Describe methods for lowering conscious or unconscious victims down ground ladders.
- Describe reasons for fireground ventilation.
- List considerations that affect the decision to ventilate.
- Discuss factors that are taken into account when deciding the need for ventilation.
- Discuss vertical ventilation.
- List safety precautions to observe when undertaking vertical ventilation.
- List warning signs of an unsafe roof condition.
- Discuss roof coverings and using existing roof openings for vertical ventilation purposes.
- Discuss ventilation considerations for various types of roofs.
- Describe trench or strip ventilation.
- Explain procedures for ventilation of a conventional basement.
- List factors that can reduce the effectiveness of vertical ventilation.
- Discuss horizontal ventilation.
- Discuss considerations for horizontal ventilation.
- Distinguish between advantages and disadvantages of forced ventilation.
- Discuss negative-pressure ventilation.
- Discuss positive-pressure ventilation.
- Compare and contrast positive-pressure and negative-pressure ventilation.
- Describe hydraulic ventilation.
- List disadvantages to the use of hydraulic ventilation.
- Explain the effects of building systems on fires or ventilation.
- Describe dry-barrel and wet-barrel hydrants.



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- Discuss fire hydrant marking and location.
- Summarize potential problems to look for when inspecting fire hydrants.
- Explain the process of fire hydrant testing.
- Discuss alternative water supplies.
- Discuss rural water supply operations.
- Discuss fire hose sizes.
- Describe types of fire hose damage and practices to prevent such damage.
- Discuss general care and maintenance of fire hose.
- Distinguish between characteristics of threaded couplings and nonthreaded couplings.
- Discuss care of fire hose couplings.
- Describe the characteristics of hose appliances and tools.
- Describe common hose rolls.
- List general hose loading guidelines.
- Describe common hose loads.
- Describe hose load finishes.
- Discuss preconnected hose loads for attack lines.
- List guidelines when laying hose.
- Describe the basic hose lays for supply hose.
- Describe procedures for handling preconnected and other hose.
- List general safety guidelines that should be followed when advancing a hoseline into a burning structure.
- Discuss procedures for advancing hose.
- Describe techniques for operating hoselines.
- List methods that are used with fire streams to reduce the heat from a fire and provide protection to firefighters and exposures.
- Discuss the extinguishing properties of water.
- Describe friction loss.
- Define water hammer.
- Distinguish among characteristics of fire stream sizes.
- Discuss types of streams and nozzles.
- Discuss handling hand line nozzles.
- Describe types of nozzle control valves.
- List checks that should be included in nozzle inspections.
- Describe initial factors to consider when suppressing structure fires.
- Summarize considerations prior to entering a burning building.
- Explain the gas cooling technique.
- Describe direct attack, indirect attack, and combination attack.
- Discuss deploying master stream devices.
- Describe aerial devices used to deliver elevated master streams.
- Describe actions and hazards associated with suppressing Class C fires.
- List electrical hazards and guidelines for electrical emergencies.
- Discuss responsibilities of companies in structural fires.
- Explain actions taken in attacking fires in upper levels of structures.
- Explain actions taken in attacking fires belowground in structures.
- Discuss structure fires in properties protected by fixed systems.
- Explain actions taken when attacking a vehicle fire.
- Explain actions taken when attacking trash container fires.
- Explain actions taken when attacking fires in confined spaces.



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- Summarize influences on wildland fire behavior: fuel, weather, and topography.
- Describe parts of a wildland fire.
- List wildland protective clothing and equipment.
- Describe methods used to attack wildland fires.
- List ten standard fire fighting orders when fighting wildland fires.
- List functions of fire detection, alarm, and suppression systems.
- Discuss general automatic sprinkler protection and types of coverage.
- Describe control valves and operating valves used in sprinkler systems.
- Describe major applications of sprinkler systems.
- Discuss operations at fires in protected properties.
- Explain the philosophy of loss control.
- Discuss planning and procedures for salvage operations.
- Describe salvage covers, salvage cover maintenance, and equipment used in salvage operations.
- Summarize basic principles of salvage cover deployment.
- Summarize basic principles of salvage cover deployment.
- Summarize methods used to catch and route water from fire fighting operations and cover openings using salvage covers.
- Discuss overhaul operations.
- Describe tools and equipment used in overhaul.
- Discuss fire safety during overhaul.
- Discuss locating hidden fires.
- Summarize the overhaul process.
- Describe signs and indications of an incendiary fire.
- Summarize important observations to be made en route, after arriving at the scene, and during fire fighting operations.
- Discuss firefighter conduct and statements at the scene.
- Explain firefighter responsibilities after the fire.
- Discuss protecting and preserving evidence.
- Describe communication responsibilities of the firefighter.
- Summarize necessary skills for fire department communication.
- Describe basic communications equipment used in telecommunications centers.
- Describe basic business telephone courtesies.
- Explain how a firefighter should proceed when receiving emergency calls from the public.
- Describe types of public alerting systems.
- Describe procedures that the public should use to report a fire or other emergency.
- Discuss ways of alerting fire department personnel to emergencies.
- Summarize guidelines for radio communications.
- Describe information given in arrival and progress reports.
- Explain the purpose of tactical channels.
- Discuss calls for additional resources and emergency radio traffic.
- Discuss evacuation signals and personnel accountability reports.
- Discuss the importance of body substance isolation (BSI).
- Describe the components of personal protective equipment.
- Discuss diseases of concern.
- Describe laws that relate to infection control.
- Explain the importance of immunizations.
- Describe the physiological aspects of stress.



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- Describe types of stress reactions.
- Summarize causes of stress.
- List signs and symptoms of stress.
- Explain various ways to deal with stress.
- Describe scene safety considerations at hazardous materials incidents and rescue operations.
- Describe actions required when responding to scenes involving violent or dangerous situations.
- Discuss the circulatory system.
- List the links in the chain of survival.
- Explain actions to be taken before resuscitation.
- Discuss rescue breathing.
- Describe the steps of cardiopulmonary resuscitation (CPR).
- Describe the CPR techniques for an infant patient.
- Describe the CPR techniques for a child patient.
- Describe the CPR techniques for an adult patient.
- Discuss indications of effective CPR and when CPR may be interrupted.
- Summarize when not to begin or to terminate CPR.
- Summarize actions taken when clearing an airway obstruction.
- Describe the main components of the circulatory system.
- Differentiate between arterial, venous, and capillary bleeding.
- Describe the steps for controlling external bleeding.
- Discuss internal bleeding.
- Describe types of shock.
- Describe the signs of shock.
- Describe the steps for managing shock.
- Summarize Awareness-Level and Operations-Level responsibilities at hazardous materials incidents.
- Describe types of respiratory protection.
- Summarize respiratory equipment limitations.
- Describe types of protective clothing.
- Discuss U.S. EPA levels of protective equipment.
- Describe NFPA® 1994 PPE ensemble classifications.
- Describe the U.S. military mission-oriented protective posture (MOPP) ensembles.
- Discuss PPE selection factors.
- Discuss health and safety issues when wearing PPE.
- Explain proper procedures for inspection, testing, and maintenance of protective clothing and equipment.
- Describe health and physical hazards that may be present at haz mat incidents.
- Describe physical properties of hazardous materials.
- Explain how the General Hazardous Materials Behavior Model (GEBMO) can help firefighters understand the likely course of an incident.
- Explain locations or occupancies clues to the presence of hazardous materials.
- Explain container shapes clues to the presence of hazardous materials.
- Explain transportation placards, labels, and markings clues to the presence of hazardous materials.
- Explain other markings and colors (non-transportation) clues to the presence of hazardous materials.



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- Explain how written resources can be used to assist firefighters in identifying hazardous materials.
- Explain how the senses can provide clues to the presence of hazardous materials.
- Explain how monitoring and detection devices can provide clues to the presence of hazardous materials.
- Summarize indicators of terrorist attacks.
- Discuss identifying illicit laboratories.
- Discuss secondary attacks.
- Summarize incident priorities for all haz mat and terrorist incidents.
- Discuss the management structure at haz mat or terrorist incidents.
- Describe the problem-solving stages at haz mat and terrorist incidents.
- Explain how the strategic goal of isolation and scene control is achieved.
- Explain how the strategic goal of notification is achieved.
- Explain how the strategic goal of ensuring the safety of responders and the public is achieved.
- Summarize general guidelines for decontamination operations.
- Describe the three types of decontamination.
- Discuss implementing decontamination.
- Discuss rescue at haz mat incidents.
- Explain how the strategic goal of spill control and confinement is achieved.
- Discuss crime scene management and evidence preservation.
- Explain actions taken during the recovery and termination phase of a haz mat or terrorist incident.

ASSESSMENT METHODS:

Student performance may be assessed by examination, quizzes, case studies, oral conversation, group discussion, oral presentations. The instructor reserves the option to employ one or more of these assessment methods during the course.

GRADING SCALE:

90%-100% = A
80%-89.9% = B
70%-79.9% = C
60%-69.9% = D
<60% = E