**ASSOCIATE’S CORE CURRICULUM**

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| **FESHE COURSE CODE & TITLE** | **INSTITUTION COURSE CODE & TITLE(Please include a link to course outcomes)** |
| **C275-Building Construction for Fire Protection** |  |
| **FESHE Course Outcomes** | **Institution Course Outcomes** |
| 1. **Describe building construction as it relates to firefighter safety, buildings codes, fire prevention, code inspection, firefighting strategy, and tactics.**
 |  |
| 1. **Classify major types of building construction in accordance with a local/model building code.**
 |  |
| 1. **Analyze the hazards and tactical considerations associated with the various types of building construction.**
 |  |
| 1. **Explain the different loads and stresses that are placed on a building and their interrelationships.**
 |  |
| 1. **Identify the function of each principle structural component in typical building design.**
 |  |
| 1. **Differentiate between fire resistance, flame spread, and describe the testing procedures used to establish ratings for each.**
 |  |
| 1. **Classify occupancy designations of the building code.**
 |  |
| 1. **Identify the indicators of potential structural failure as they relate to firefighter safety.**
 |  |
| 1. **Identify the role of GIS as it relates to building construction.**
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| **FESHE COURSE CODE & TITLE** | **INSTITUTION COURSE CODE & TITLE****(Please include a link to course outcomes)** |
| **C276-Fire Behavior and Combustion** |  |
| **FESHE Course Outcomes** | **Institution Course Outcomes** |
| 1. **Identify physical properties of the three states of matter.**
 |  |
| 1. **Categorize the components of fire.**
 |  |
| 1. **Explain the physical and chemical properties of fire.**
 |  |
| 1. **Describe and apply the process of burning.**
 |  |
| 1. **Define and use basic terms and concepts associated with the chemistry and dynamics of fire.**
 |  |
| 1. **Discuss various materials and their relationship to fires as fuel.**
 |  |
| 1. **Demonstrate knowledge of the characteristics of water as a fire suppression agent.**
 |  |
| 1. **Articulate other suppression agents and strategies.**
 |  |
| 1. **Compare other methods and techniques of fire extinguishments.**
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| **FESHE COURSE CODE & TITLE** | **INSTITUTION COURSE CODE & TITLE(Please include a link to course outcomes)** |
| **C286- Fire Prevention** |  |
| **FESHE Course Outcomes** | **Institution Course Outcomes** |
| 1. **Define the national fire problem and role of fire prevention.**
 |  |
| 1. **Identify and describe fire prevention organizations and associations.**
 |  |
| 1. **Define laws, rules, regulations, and codes and identify those relevant to fire prevention of the authority having jurisdiction.**
 |  |
| 1. **Define the functions of a fire prevention bureau.**
 |  |
| 1. **Describe inspection practices and procedures.**
 |  |
| 1. **Identify and describe the standards for professional qualifications for Fire Marshal, Plans Examiner, Fire Inspector, Fire and Life Safety Educator, and Fire Investigator.**
 |  |
| 1. **List opportunities in professional development for fire prevention personnel.**
 |  |
| 1. **Describe the history and philosophy of fire prevention.**
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| **FESHE COURSE CODE & TITLE** | **INSTITUTION COURSE CODE & TITLE(Please include a link to course outcomes)** |
| **C288- Fire Protection Systems** |  |
| **FESHE Course Outcomes** | **Institution Course Outcomes** |
| 1. **Explain the benefits of fire protection systems in various types of structures.**
 |  |
| 1. **Describe the basic elements of a public water supply system including sources, distribution networks, piping and hydrants.**
 |  |
| 1. **Explain why water is a commonly used extinguishing agent.**
 |  |
| 1. **Identify the different types and components of sprinkler, standpipe and foam systems.**
 |  |
| 1. **Review residential and commercial sprinkler legislation.**
 |  |
| 1. **Identify the different types of non-water based fire suppression systems.**
 |  |
| 1. **Explain the basic components of a fire alarm system.**
 |  |
| 1. **Identify the different types of detectors and explain how they detect fire.**
 |  |
| 1. **Describe the hazards of smoke and list the four factors that can influence smoke movement in a building.**
 |  |
| 1. **Discuss the appropriate application of fire protection systems.**
 |  |
| 1. **Explain the operation and appropriate application for the different types of portable fire protection systems.**
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| **FESHE COURSE CODE & TITLE** | **INSTITUTION COURSE CODE & TITLE(Please include a link to course outcomes)** |
| **C273- Principles of Emergency Services** |  |
| **FESHE Course Outcomes** | **Institution Course Outcomes** |
| 1. **Illustrate and explain the history and culture of the fire service.**
 |  |
| 1. **Analyze the basic components of fire as a chemical chain reaction, the major phases of fire, and examine the main factors that influence fire spread and fire behavior.**
 |  |
| 1. **Differentiate between fire service training and education and explain the value of higher education to the professionalization of the fire service.**
 |  |
| 1. **List and describe the major organizations that provide emergency response service and illustrate how they interrelate.**
 |  |
| 1. **Identify fire protection and emergency-service careers in both the public and private sector.**
 |  |
| 1. **Define the role of national, State and local support organizations in fire and emergency services.**
2. **Discuss and describe the scope, purpose, and organizational structure of fire and emergency services.**
 |  |
| 1. **Describe the common types of fire and emergency service facilities, equipment, and apparatus.**
 |  |
| 1. **Compare and contrast effective management concepts for various emergency situations.**
 |  |
| 1. **Identify the primary responsibilities of fire prevention personnel including, code enforcement, public information, and public and private protection systems.**
 |  |
| 1. **Recognize the components of career preparation and goal setting.**
 |  |
| 1. **Describe the importance of wellness and fitness as it relates to emergency services.**
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| **FESHE COURSE CODE & TITLE** | **INSTITUTION COURSE CODE & TITLE(Please include a link to course outcomes)** |
| **C281- Principles of Fire & Emergency Services Safety & Survival** |  |
| **FESHE Course Outcomes** | **Institution Course Outcomes** |
| 1. **Define and describe the need for cultural and behavioral change within the emergency services relating to safety, incorporating leadership, supervision, accountability and personal responsibility.**
 |  |
| 1. **Explain the need for enhancements of personal and organizational accountability for health and safety.**
 |  |
| 1. **Define how the concepts of risk management affect strategic and tactical decision-making.**
 |  |
| 1. **Describe and evaluate circumstances that might constitute an unsafe act.**
 |  |
| 1. **Explain the concept of empowering all emergency services personnel to stop unsafe acts.**
 |  |
| 1. **Validate the need for national training standards as they correlate to professional development inclusive of qualifications, certifications, and re-certifications.**
 |  |
| 1. **Defend the need for annual medical evaluations and the establishment of physical fitness criteria for emergency services personnel throughout their careers.**
 |  |
| 1. **Explain the vital role of local departments in national research and data collection systems.**
 |  |
| 1. **Illustrate how technological advancements can produce higher levels of emergency services safety and survival.**
 |  |
| 1. **Explain the importance of investigating all near-misses, injuries and fatalities.**
 |  |
| 1. **Discuss how incorporating the lessons learned from investigations can support cultural change throughout the emergency services.**
 |  |
| 1. **Describe how obtaining grants can support safety and survival initiatives.**
 |  |
| 1. **Formulate an awareness of how adopting standardized policies for responding to emergency scenes can minimize near-misses, injuries and deaths.**
 |  |
| 1. **Explain how the increase in violent incidents impacts safety for emergency services personnel when responding to emergency scenes.**
 |  |
| 1. **Recognize the need for counseling and psychological support for emergency services personnel, their families, as well as, identify access to local resources and services.**
 |  |
| 1. **Describe the importance of public education as a critical component of life safety programs.**
 |  |
| 1. **Discuss the importance of fire sprinklers and code enforcement.**
 |  |
| 1. **Explain the importance of safety in the design of apparatus and equipment.**
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| **ASSOCIATE'S NON-CORE CURRICULUM** |
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| **FESHE COURSE CODE & TITLE** | **INSTITUTION COURSE CODE & TITLE(Please include a link to course outcomes)** |
| **C290- Advanced Concepts in Structural Fire Protection** |  |
| **FESHE Course Outcomes** | **Institution Course Outcomes** |
| 1. **Analyze case studies from historical fires related to structural collapse and failure and emphasis on fire protection systems design.**
 |  |
| 1. **Identify the principle structural components and evaluate the five types of building construction addressing special hazards and tactical considerations.**
 |  |
| 1. **Develop and calculate approved fire resistance ratings employing established principles and models.**
 |  |
| 1. **Describe the design objectives of fire resistance properties of assemblies including walls, floors, beams, columns, fire barriers and penetrations.**
 |  |
| 1. **Describe the behavior of structural components and their mechanical properties (thermal strain, stress and fatigue) under fire conditions.**
 |  |
| 1. **List and apply the “Ten Rules of Fire Endurance Rating”, according to ‘Harmathy’.**
 |  |
| 1. **Evaluate occupancy designations and their respective fire resistance requirements according to state, local and regional building codes.**
 |  |
| 1. **Describe the industry fire-resistive testing processes (e.g. ASTM E-119 test) for fire load, severity, and fire endurance according to NFPA and UL.**
 |  |
| 1. **Evaluate the fire protection systems (e.g. spray on coatings, flame shields, encasements, barriers) for structural components in accordance with fire industry standards.**
 |  |
| 1. **Identify the indicators of potential structural failure as they relate to firefighter safety and analyze the causes involved in the line of duty firefighter deaths related to structural firefighting.**
 |  |
| 1. **Identify and analyze the causes involved in the line of duty firefighter deaths related to structural and wildland firefighting, training and research and the reduction of emergency risks and accidents.**
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| **FESHE COURSE CODE & TITLE** | **INSTITUTION COURSE CODE & TITLE(Please include a link to course outcomes)** |
| **C294- Fire & Life Safety Education** |  |
| **FESHE Course Outcomes** | **Institution Course Outcomes** |
| 1. **Differentiate between Public Education, Public Information and Public Relations/Marketing.**
 |  |
| 1. **Demonstrate the need for establishing fire and life safety education as a value within the fire service culture.**
 |  |
| 1. **Identify stakeholders; develop partnerships and coalitions to work on fire and life safety education activities.**
 |  |
| 1. **Identify and use local, regional and national sources of data for fire and injury preventions programs.**
 |  |
| 1. **Identify budget needs for program delivery and the process for requesting funds.**
 |  |
| 1. **Select, design, implement, and evaluate fire and life safety education programs that specific community risk issues.**
 |  |
| 1. **Develop an accountability system to measure program delivery.**
 |  |

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| **FESHE COURSE CODE & TITLE** | **INSTITUTION COURSE CODE & TITLE(Please include a link to course outcomes)** |
| **C283- Fire Investigation I** |  |
| **FESHE Course Outcomes** | **Institution Course Outcomes** |
| 1. **Identify the responsibilities of a firefighter when responding to the scene of a fire, including scene security and evidence preservation.**
 |  |
| 1. **Describe the implications of constitutional amendments as they apply to fire investigations.**
 |  |
| 1. **Identify key case law decisions that have affected fire investigations.**
 |  |
| 1. **Define the common terms used in fire investigations.**
 |  |
| 1. **Explain the basic elements of fire dynamics and how they affect cause determination.**
 |  |
| 1. **Compare the types of building construction on fire progression.**
 |  |
| 1. **Describe how fire progression is affected by fire protection systems and building design.**
2. **Discuss the basic principles of electricity as an ignition source.**
 |  |
| 1. **Recognize potential health and safety hazards.**
 |  |
| 1. **Describe the process of conducting investigations using the scientific method.**
 |  |
| 1. **Identify cause and origin and differentiate between accidental and incendiary.**
 |  |
| 1. **Explain the procedures used for investigating vehicle fires.**
 |  |
| 1. **Identify the characteristics of an incendiary fire and common motives of the fire setter.**
 |  |

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| **FESHE COURSE CODE & TITLE** | **INSTITUTION COURSE CODE & TITLE(Please include a link to course outcomes)** |
| **C284- Fire Investigation II** |  |
| **FESHE Course Outcomes** | **Institution Course Outcomes** |
| 1. **Explain the rule of law as it pertains to arrest, search and seizure.**
 |  |
| 1. **Interpret a fire scene.**
 |  |
| 1. **Describe the chemistry of combustion.**
 |  |
| 1. **Explain the nature and behavior of fire.**
 |  |
| 1. **Identify the combustion properties of liquid, gaseous, and solid fuels.**
 |  |
| 1. **Analyze electrical causes of fires.**
 |  |
| 1. **List the procedures for fingerprinting and evidence collection/preservation.**
 |  |
| 1. **Evaluate the use of incendiary devices, explosives, and bombs.**
 |  |
| 1. **List the procedures for fire scene documentation.**
 |  |
| 1. **Analyze fire-related deaths and injuries.**
 |  |
| 1. **Discuss interviewing techniques.**
 |  |
| 1. **Explain the role of the fire investigator in courtroom demeanor and testifying.**
 |  |
| 1. **List the sources and technology available for fire investigations.**
 |  |
| 1. **Describe procedures for conducting background investigations.**
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| **FESHE COURSE CODE & TITLE** | **INSTITUTION COURSE CODE & TITLE(Please include a link to course outcomes)** |
| **C292- Fire Plans Review** |  |
| **FESHE Course Outcomes** | **Institution Course Outcomes** |
| 1. **Describe at least three reasons for performing plan checks, the objectives of a proposed plans review program, the impact of such a program, and how the program will enhance current fire prevention programs.**
 |  |
| 1. **Develop a graphic illustration of a model plans review system, identifying at least four components involved in the system including the use of plans review checklists.**
 |  |
| 1. **List three methods to monitor and evaluate the effectiveness of code requirements according to applicable standards.**
 |  |
| 1. **Determine fire department access, verify appropriate water supply, and review general building parameters.**
 |  |
| 1. **Determine occupancy classification, construction type; calculate occupant load and height and area of a building.**
 |  |
| 1. **Determine the appropriateness of the three components of building’s egress system (exit access, exit, and exit discharge), verify building compartmentation and the proper enclosure of vertical openings.**
 |  |
| 1. **Identify special hazards, verify interior finish and establish the proper location for pre-engineered fire extinguishing systems.**
 |  |
| 1. **Verify the compliance of a heating, ventilating, and air conditioning (HVAC) system, review sources requiring venting and combustion air, verify the proper location of fire dampers, and evaluate a stairwell pressurization system.**
 |  |
| 1. **Verify the proper illumination for exit access, the arrangement of exit lighting, and perform a life safety evaluation of the egress arrangement of a building.**
 |  |
| 1. **Verify the design of a fire alarm and detection system, and an offsite supervisory system for compliance with applicable standards.**
 |  |

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| **FESHE COURSE CODE & TITLE** | **INSTITUTION COURSE CODE & TITLE(Please include a link to course outcomes)** |
| **C277- Fire Protection Hydraulics & Water Supply** |  |
| **FESHE Course Outcomes** | **Institution Course Outcomes** |
| 1. **Apply the application of mathematics and physics to the movement of water in fire suppression activities.**
 |  |
| 1. **Identify the design principles of fire service pumping apparatus.**
 |  |
| 1. **Analyze community fire flow demand criteria.**
 |  |
| 1. **Demonstrate, through problem solving, a thorough understanding of the principles of forces that affect water, both at rest and in motion.**
 |  |
| 1. **List and describe the various types of water distribution systems.**
 |  |
| 1. **Discuss the various types of fire pumps.**
 |  |

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| **FESHE COURSE CODE & TITLE** | **INSTITUTION COURSE CODE & TITLE(Please include a link to course outcomes)** |
| **C282- Hazardous Materials Chemistry** |  |
| **FESHE Course Outcomes** | **Institution Course Outcomes** |
| 1. **Identify and describe the common elements of the Periodic Table.**
 |  |
| 1. **Distinguish between elements, compounds, and mixtures.**
 |  |
| 1. **Explain the difference between ionic and covalent bonding.**
 |  |
| 1. **Define the basic chemistry involved with common hydrocarbon derivatives.**
 |  |
| 1. **Describe the basic chemical and physical properties of gases, liquids, and solids.**
 |  |
| 1. **Discuss the nine U.S. Department of Transportation hazard classes and their respective divisions.**
 |  |
| 1. **Demonstrate the utilization of guidebooks, MSDS, and other reference materials to determine an initial course of action.**
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| **FESHE COURSE CODE & TITLE** | **INSTITUTION COURSE CODE & TITLE(Please include a link to course outcomes)** |
| **C291- Human Behavior in Fire** |  |
| **FESHE Course Outcomes** | **Institution Course Outcomes** |
| 1. **Categorize the types of behavior that people exhibit in fire situations as positive or negative as they effect emergency evacuation.**
 |  |
| 1. **Outline three fire scenarios and describe the possible physiological impact each may have on building occupants and responding firefighters.**
 |  |
| 1. **Identify four psychological traits of building occupants which may effect their identification of and response to a fire.**
 |  |
| 1. **Perform algebraic estimates of occupant evacuation times from buildings.**
 |  |
| 1. **Identify the two primary modeling techniques used to estimate evacuation times in large buildings and transportation facilities.**
 |  |
| 1. **Identify at least four occupancies where human behavior and response characteristics are unique to occupancies and where there is a high potential life loss.**
 |  |
| 1. **Write a summary of the human factors effecting high life loss in a major fire incident.**
 |  |
| 1. **Identify five occupancies in your town/city/jurisdiction where human factors and building design may be factors in emergency evacuation. For one of these occupancies, list fire department procedures which should be implemented to deal with a major incident.**
 |  |
| 1. **Develop a fire scenario and provide an estimate of the effective time of operation for the first responding firefighters.**
 |  |
| 1. **Understand aspects of human behavior in mass casualties.**
 |  |
| 1. **Identify and analyze the causes involved in the line of duty firefighter deaths related to structural and wildland firefighting, training and research and the reduction of emergency risks and accidents.**
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| **FESHE COURSE CODE & TITLE** | **INSTITUTION COURSE CODE & TITLE(Please include a link to course outcomes)** |
| **C272- Principles of Fire & Emergency Service Administration** |  |
| **FESHE Course Outcomes** | **Institution Course Outcomes** |
| 1. **Acknowledge career development opportunities and strategies for success.**
 |  |
| 1. **Recognize the need for effective communication skills both written and verbal.**
 |  |
| 1. **Identify and explain the concepts of span and control, effective delegation, and division of labor.**
 |  |
| 1. **Select and implement the appropriate disciplinary action based upon an employee’s conduct.**
 |  |
| 1. **Explain the history of management and supervision methods and procedures.**
 |  |
| 1. **Discuss the various levels of leadership, roles, and responsibilities within the organization.**
 |  |
| 1. **Describe the traits of effective versus ineffective management styles.**
 |  |
| 1. **Identify the importance of ethics as it relates to fire and emergency services.**
 |  |
| 1. **Identify the roles of the National Incident Management System (NIMS) and Incident Management System (ICS).**
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| **FESHE COURSE CODE & TITLE** | **INSTITUTION COURSE CODE & TITLE(Please include a link to course outcomes)** |
| **C270- Legal Aspects of the Emergency Services** |  |
| **FESHE Course Outcomes** | **Institution Course Outcomes** |
| 1. **Define the different types of laws.**
 |  |
| 1. **Discuss Federal, State, and local laws and liabilities applicable to emergency services.**
 |  |
| 1. **Explain the purpose of national codes and standards.**
 |  |
| 1. **Discuss applicable court decisions that have influenced emergency services.**
 |  |
| 1. **Recognize the legal issues and concerns affecting emergency services.**
 |  |

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| **FESHE COURSE CODE & TITLE** | **INSTITUTION COURSE CODE & TITLE(Please include a link to course outcomes)** |
| **C278- Occupational Health & Safety** |  |
| **FESHE Course Outcomes** | **Institution Course Outcomes** |
| 1. **Describe the history of occupational health and safety.**
 |  |
| 1. **Identify occupational health and safety programs for industry and emergency services today.**
 |  |
| 1. **Compare the difference between standards and regulations.**
 |  |
| 1. **List and describe the components of risk identification, risk evaluation, and incident management.**
 |  |
| 1. **Describe the relevance for safety in the work place including the importance of PPE.**
 |  |
| 1. **Apply the knowledge of an effective safety plan to pre-incident planning, response, and training activities.**
 |  |
| 1. **Explain the components of an accountability system in emergency service operations.**
2. **Discuss the need for and the process used for post-incident analysis.**
 |  |
| 1. **Describe the components and value of critical incident management programs.**
 |  |
| 1. **Describe the responsibilities of individual responders, supervisors, safety officers, and incident commanders, safety program managers, safety committees and fire department managers as they relate to health and safety programs.**
 |  |
| 1. **Describe the components of a wellness/fitness plan.**
 |  |
| 1. **Identify and analyze the major causes involved in line-of-duty firefighter deaths related to health, wellness, fitness and vehicle operations.**
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| **FESHE COURSE CODE & TITLE** | **INSTITUTION COURSE CODE & TITLE(Please include a link to course outcomes)** |
| **C289- Performance-Based Design Fire Protection** |  |
| **FESHE Course Outcomes** | **Institution Course Outcomes** |
| 1. **Given examples of a performance-based design and a prescriptive-base design, describe the differences.**
 |  |
| 1. **Given a fire spread scenario, explain the progression of the fire from start to extinguishment.**
 |  |
| 1. **Given specific life safety criteria and non-life safety criteria requirements, determine whether a performance-based building design submitted for approval would meet the criteria of the local jurisdiction.**
 |  |
| 1. **Describe the capabilities and limitations of the fire model(s) on which the design was based.**
 |  |
| 1. **Evaluate performance-base design reports and verify whether documentation submitted is adequate.**
 |  |
| 1. **Comprehend the types of building commissioning and acceptance testing associated with performance-based design buildings.**
 |  |
| 1. **Identify and analyze field changes, building limitations, allowable alterations and renovations.**
 |  |
| 1. **Describe the dynamics of fire.**
 |  |

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| **FESHE COURSE CODE & TITLE** | **INSTITUTION COURSE CODE & TITLE(Please include a link to course outcomes)** |
| **C293- Principles of Code Enforcement** |  |
| **FESHE Course Outcomes** | **Institution Course Outcomes** |
| 1. **Explain the code enforcement system and the fire inspector’s role in that system.**
 |  |
| 1. **Describe the codes and standards development and adoption processes.**
 |  |
| 1. **Describe the difference between prescriptive and performance based codes.**
 |  |
| 1. **Describe the legal authority and limitations relevant to fire code inspections.**
 |  |
| 1. **Describe the importance of thorough documentation.**
 |  |
| 1. **Recognize ethical practices for the code enforcement officer.**
 |  |
| 1. **Explain the application, and interrelationship of codes, standards, recommended practices and guides.**
 |  |
| 1. **Describe the differences in how codes apply to new and existing structure.**
 |  |
| 1. **Identify appropriate codes and their relationship to other requirements for the built environment.**
 |  |
| 1. **Describe the political, business, and other interests that influence the code enforcement process.**
 |  |
| 1. **Identify the professional development process for code enforcement practitioners.**
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| **FESHE COURSE CODE & TITLE** | **INSTITUTION COURSE CODE & TITLE(Please include a link to course outcomes)** |
| **C279- Strategy & Tactics** |  |
| **FESHE Course Outcomes** | **Institution Course Outcomes** |
| 1. **Discuss fire behavior as it relates to strategies and tactics.**
 |  |
| 1. **Explain the main components of pre-fire planning and identify steps needed for a pre-fire plan review.**
 |  |
| 1. **Identify the basics of building construction and how they interrelate to pre-fire planning and strategy and tactics.**
 |  |
| 1. **Describe the steps taken during size-up.**
 |  |
| 1. **Examine the significance of fire ground communications.**
 |  |
| 1. **Identify the roles of the National Incident Management System (NIMS) and Incident Management System (ICS) as it relates to strategy and tactics.**
 |  |
| 1. **Demonstrate the various roles and responsibilities in ICS/NIMS.**
 |  |