

FIRE SCIENCE (FS)

FS100: Introduction to Fire and Emergency Services

This course introduces you to careers in fire and emergency services and the fire and emergency management programs. Pertinent skill sets and professionalism will be discussed. You will learn about the historical background of modern fire service while learning research skills for the future. This course is designed to acclimate you to the academic environment while providing a solid foundation for success in the fire and emergency services profession.

Quarter Credit Hours: 5 | Prerequisite: None

FS101: Fire Behavior and Combustion

This course investigates the basic concepts of fire, its spread, and its control. The course discusses the nature and properties of the three states of matter, explains the components of fire, and describes the physical and chemical properties of fire.

Quarter Credit Hours: 5 | Prerequisite: None

FS102: Building Construction for Fire Protection

This course explores the fundamentals of building construction, types of structures, and structure designs, as well as the impact of building construction on firefighting. You will study the forces that impact these structures and the codes applied to buildings and fire safety. You will also learn how buildings are constructed and how fire behaves with various building materials.

Quarter Credit Hours: 5 | Prerequisite: None

FS103: Fire Protection Hydraulics and Water Supply

This course explores the fundamentals of water usage in fire protection and explains how hydraulic principles are employed in the resolution of water supply problems. The course also discusses water flow, standpipe and sprinkler systems, relay pumping operations, and fire stream strategies. You will also have the opportunity to calculate fire flow demands for a community.

Quarter Credit Hours: 5 | Prerequisite: None

FS104: Fire Protection Systems

This course describes the principles of fire protection and system design. You will explore fire control and suppression methods, including sprinkler, water spray, water mist, standpipe, and ultra high-speed water spray systems. The course also provides an overview of recent fire protection and suppression developments.

Quarter Credit Hours: 5 | Prerequisite: None

FS105: Fire Prevention Practices

This course examines fire avoidance measures, including fire prevention education, fire safety inspection, fire code enforcement, and fire investigation. You will gain an overview of the procedures and principles of inspections commonly conducted for control of structures, occupancy, or combined purposes.

Quarter Credit Hours: 5 | Prerequisite: None

FS120: Introduction to Emergency Management

This course covers the four pillars of emergency management: mitigation, preparedness, response, and recovery. Topics include the history of emergency management, risk and threat assessment, mitigation, preparedness, the administrative functions of the emergency management program, and the response and recovery efforts that assist in the restoration of communities and in encouraging resiliency in the aftermath of a disaster. Upon completion of this course, you should be able to demonstrate an understanding of comprehensive and all-hazards emergency management.

Quarter Credit Hours: 5 | Prerequisite: None

FS201: Strategy and Tactics

This course explores firefighting strategy and tactics, risk management, and pre-fire planning. You will gain knowledge of modern fire behavior and how it impacts strategy and tactics at residential, multi-family, commercial, and public assembly fires. This course also discusses special situations such as hazmat emergencies, multi-casualty incidents, and emergency management incidents.

Quarter Credit Hours: 5 | Prerequisite: None

FS202: Principles of Emergency Services

This course provides an overview of fire protection as well as the philosophy and history of fire protection. You will gain an understanding of career opportunities in fire protection and related fields, fire loss analysis, and the organization and function of public and private fire protection services. This course discusses the role of fire departments as part of local governments, as well as fire service laws, regulations, and terminology. There is also an introduction to multiagency planning and operations as related to multialarm incidents, target hazards, and major disasters.

Quarter Credit Hours: 5 | Prerequisite: None

FS204: Occupational Safety and Health for Emergency Services

This course examines the fundamentals of occupational health and safety for emergency service agencies. You will gain knowledge of risk evaluation and control policies for fire stations, emergency vehicles, and training sites as well as for incidents involving fire, hazardous materials, and other EMS responses. You will also gain knowledge of the basic principles and history to firefighter life safety initiatives.

Quarter Credit Hours: 5 | Prerequisite: None

FS205: Ethics for the Fire and Emergency Services

This course provides an understanding of the types of ethical issues that can arise in the fire and emergency services. You will examine philosophical concepts as they relate to modern ethics. The course will also provide an overview of various approaches to the ethical situations faced by fire and emergency service organizations.

Quarter Credit Hours: 5 | Prerequisite: None

FS208: Legal Aspects of Emergency Services

This course explores the laws related to emergency services and their agencies. You will discuss criminal and civil issues as well as the federal and state laws that impact the management of emergency services. There will also be a discussion of the legal and ethical circumstances that emergency responders may encounter and an examination of recent case law and legal decisions that affect emergency services agencies.

Quarter Credit Hours: 5 | Prerequisite: None

FS220: Preparedness and Planning for Emergency Management

This course analyzes the rationale for and methods related to all-hazards emergency preparedness and planning. Topics include preparedness strategies, planning concepts and processes, public awareness programs, and training and exercise programs.

Quarter Credit Hours: 5 | Prerequisite: None

FS225: Emergency Management Response

This course examines the critical world of disaster response and recovery. You will explore the initial response phase of emergency management, examine how government agencies mobilize resources, and how agencies implement policies to get communities back on their feet. You will also gain insight into the Emergency Operations Center (EOC) and the function it provides as the central point for coordinating response efforts. Additionally, you will review the National Response and Recovery Frameworks, which serve as the guiding principles for disaster response and recovery across all levels of government.

Quarter Credit Hours: 5 | Prerequisite: None

FS299: Associate's Capstone in Fire Science

This course is designed as the culminating experience of the Associate of Applied Science in Fire Science. This course will integrate concepts from the fire science curriculum. The assignments are designed to test application and critical thinking skills as you work through fact-based scenarios and analyze issues affecting contemporary practice.

Quarter Credit Hours: 5 | Prerequisite: Last term or permission from the Dean

FS301: Fire Investigation and Analysis

This course analyzes fire ignition dynamics, flame spread, and room fire growth. You will explore all aspects of incident investigation, financial management, and other functions related to fire analysis and investigation.

Quarter Credit Hours: 6 | Prerequisite: None

FS302: Advanced Principles of Firefighter Safety and Survival

This course provides an advanced analysis of firefighter life safety initiatives as well as an evaluation of the behavioral changes necessary in emergency services. Through case studies and scenarios, you will develop effective decision-making skills that are necessary for survival in fire and related emergency situations.

Quarter Credit Hours: 6 | Prerequisite: None

FS304: Community Risk Reduction for Fire and EMS

This course analyzes theories for understanding ethical, social, organizational, political, and legal aspects of community risk reduction for fire and EMS agencies. You will learn to utilize common methods for developing effective and comprehensive community risk-reduction plans.

Quarter Credit Hours: 6 | Prerequisite: None

FS320: Recovery Practices in Emergency Management

This course describes how people, groups, organizations, communities, and governments manage disasters in the immediate aftermath and recover from their effects, including social, physical, business, and infrastructure problems as well as intra- and interorganizational planning.

Quarter Credit Hours: 6 | Prerequisite: None

FS401: Fire Prevention Organization and Management

This course explores the modern management and planning techniques that are utilized to organize a fire department's comprehensive fire prevention program. You will examine fire department organization and management through the lens of community risk reduction, codes and standards, inspections, plan review, incident investigation, fire prevention research, and the relationship of master planning to fire prevention.

Quarter Credit Hours: 6 | Prerequisite: None

FS402: Political, Ethical, and Legal Foundations of Emergency Services

This course will examine the political, legal, and ethical processes that are specific to the administration and deployment of emergency services. There will be an analysis of legal and political issues and their relationship to human resource principles, laws, and practices. The legislative process will be explored as it relates to emergency services. The concepts of ethics will be applied to functional roles and relevant decision-making needed in emergency services.

Quarter Credit Hours: 6 | Prerequisite: None

FS403: Leadership and Management

This course examines the knowledge and skills needed to become a responsible leader and manager in a modern fire service or emergency management setting. Topics within the course encompass leadership and management, the management of a budget, human capital management, and administrative law. The course also analyzes challenges related to the creation of a team environment, situational leadership, and ethical decision making.

Quarter Credit Hours: 6 | Prerequisite: None

FS412: Safety Risk Management for Fire and EMS

This course examines the evolution of organizational and leadership dynamics in fire and EMS agencies. You will examine common aspects of organizational behavior and leadership, including organizational development, communications, decision making, and stress and conflict management.

Quarter Credit Hours: 6 | Prerequisite: None

FS413: Research Analysis for Fire Emergency Services

This course explores research methods utilized in the analysis of fire-related data. You will gain an understanding of how to analyze fire research methodologies regarding current issues and trends involving fire and emergency services organizations, how to utilize qualitative and/or quantitative methodologies, and how to prepare a literature review on fire-related topics. You will also get the chance to develop a fire-related research proposal on a chosen topic.

Quarter Credit Hours: 6 | Prerequisite: None

FS414: Personnel Management for Fire and EMS

This course examines fundamental issues in personnel administration and human resource development in fire and EMS agencies. You will explore concepts and responsibilities such as management, organizational development and training, employee recruitment, selection, and productivity, as well as performance management and labor relations.

Quarter Credit Hours: 6 | Prerequisite: None

FS420: Mitigation and Risk Assessment in Emergency Management

This course describes the methods and techniques used to lessen the potential impact of disasters and improve readiness to respond within the emergency management field. Included are types of hazards and principles related to mitigation as they pertain to sustainability and building resilient communities. You will design a risk assessment plan.

Quarter Credit Hours: 6 | Prerequisite: None

FS425: Disaster Policy in Emergency Management

This course focuses on the administrative roles of local, state, and federal governments in times of disaster and the importance of intergovernmental relations. The policymaking process and the historical evolution of disaster policy are reviewed.

Quarter Credit Hours: 6 | Prerequisite: None

FS498: Bachelor's Capstone in Fire Science

This course is designed as the culminating experience of the bachelor's degree programs in fire science. This course consists of a series of assignments that integrate concepts from the fire science curricula. The assignments are designed to test application and critical thinking skills as students work through fact-based scenarios and analyze issues affecting contemporary practice.

Quarter Credit Hours: 6 | Prerequisite: Last term or permission from the Dean