



MERCER
COUNTY COMMUNITY COLLEGE

COURSE OUTLINE

Course Number FIR 101	Course Title Introduction to Fire Science	Credits 3
Hours: 3 Lecture Lecture/Lab/Other	Co- or Pre-requisite: N/A	Implementation Semester & Year January 2022

Catalog description:

History and philosophy of fire protection and prevention, involves a survey of equipment, tactics, building construction, extinguishing agents, hazardous materials, and fire department organization.

General Education Category:

[Not GenEd](#)

Choose an item.

Course coordinator: James McCann, (609) 799-3245 or
mccannj@mccc.edu

Required texts & Other materials:

Fire and Emergency Services Orientation & Terminology, 6th edition, IFSTA, ISBN-978-087939-403-5

Course Student Learning Outcomes (SLO):

Upon successful completion of this course the student will be able to:

1. Identify career opportunities in fire protection and related fields. (ILG 5, 10), (PLO 1)
2. Relate philosophy and history of fire protection/service to modern day. (ILG 7), (PLO 1, 4, 5)
3. Understand the organization and function of public and private fire protection services; fire departments as part of local government. (ILG 5, 10), (PLO 1,4)
4. Identify laws and regulations affecting the fire service and fire service nomenclature (ILG 5, 7, 10), (PLO 7)
5. Understand basic fire chemistry and physics. (ILG 3), (PLO 2)
6. Understand the basic function and types of fire protection systems. (ILG 10), (PLO 3,6)
7. Understand the need for fire strategy and tactics. (ILG 10, 11), (PLO 3)
8. Understand operational safety. (ILG 9, 10, 11), (PLO 6,7)

Course-specific Institutional Learning Goals (ILG):

Institutional Learning Goal 3. Science: Students will use the scientific method of inquiry, through the acquisition of scientific knowledge.

Institutional Learning Goal 5: Social Science: Students will use social science theories and concepts to analyze human behavior and social and political institutions and to act as responsible citizens.

Institutional Learning Goal 7: History: Students will understand historical events and movements in World, Western, non-Western or American societies and assess their subsequent significance.

Institutional Learning Goal 9: Ethical Reasoning and Action: Students will understand ethical frameworks, issues, and situations.

Institutional Learning Goal 10: Information Literacy: Students will recognize when information is needed and have the knowledge and skills to locate, evaluate, and effectively use information for college level work.

Institutional Learning Goal 11.

Critical Thinking: Students will use critical thinking skills understand, analyze, or apply information or solve problems.

Program Learning Outcomes for : (PLO)

1. Discuss the history, support organizations, resources, incident management, training, and emergency operations and relate how each plays a role within the fire service.
2. Define and use basic terms and concepts associated with the chemistry and dynamics of fire;
3. Apply principles of hydraulics, building construction, strategy, and tactics to fire ground operations;
4. Communicate the relationship of fire prevention and fire inspection;
5. Demonstrate the importance of public education in relation to fire prevention;
6. Evaluate facilities to appraise code compliance and potential hazards, building construction issues, and presence of appropriate fire protection systems to help ensure life safety both pre-incident and during an incident;
7. Employ safe work practices using recognized standards and regulations.

Units of study in detail – Unit Student Learning Outcomes:

- I. Describe and discuss the components of the history and philosophy of the modern day fire service. (Supports SLO 2)
- II. Analyze the basic components of fire as a chemical reaction, the major phases of fire, and examine the main factors that influence fire spread and fire behavior. (Supports SLO 5)
- III. Differentiate between fire service training and education; fire protection certificate program and a fire service degree program; and explain the value of education in the fire service. (Supports SLO 1)
- IV. List and describe the major organizations that provide emergency response service and illustrate how they interrelate. ((Supports SLO 3)
- V. Identify fire protection and emergency-service careers in both the public and in the private sector. ((Supports SLO 3)
- VI. Synthesize the role of national, state and local support organizations in fire protection and emergency services. (Supports SLO 3, 4)
- VII. Discuss and describe the scope, purpose, and organizational structure of fire and emergency services. (Supports SLO 3, 4)
- VIII. Describe the common types of fire and emergency services facilities, equipment, and apparatus. (Supports SLO 6, 7, 8)
- IX. Compare and contrast effective management concepts for various emergency situations. (Supports SLO 3, 7, 8)
- X. Identify and explain the components of fire prevention including code enforcement, public information, and public and private fire protection systems. (Supports SLO 3, 4, 6)

Evaluation of student learning:

Students will be evaluated for mastery of learning objectives by methods of evaluation to be determined by the instructor. Periodic tests or quizzes as well as a final exam may be utilized. Other methods such as a research papers or group projects are encouraged. Students must reference the course syllabus for their section for the evaluation details.