

Montgomery County Community College
FSC 108
Fire Protection Systems
3-3-0

COURSE DESCRIPTION:

This course will focus on the study of automatic and manual, electronic, and mechanical system based fire protection. Students will examine the different types of active fire protection and components, their operational characteristics, when and where code installation requirements apply, and the inspection and maintenance requirements of these systems.

REQUISITES:*Previous Course Requirements*

- FSC 100 - Introduction to Fire Science

Concurrent Course Requirements

None

LEARNING OUTCOMES Upon successful completion of this course, the student will be able to:	LEARNING ACTIVITIES	EVALUATION METHODS
1. Explain the benefits of fire protection systems in various types of structures.	Assigned Readings Lectures Discussions Case Study Analysis AV/Multimedia Materials Internet Field Trips Field Trips Essay Assignments Directed Research Quizzes and Exams	Multiple-Choice Exam Graded Essay Graded Essay Exam Assignments Graded Research Project Individual or Group Presentation Graded Class Discussion Graded Case Study
2. Describe the basic elements of a public water supply system including sources, distribution networks, piping and hydraulics.	Assigned Readings Lectures Discussions Case Study Analysis AV/Multimedia Materials Internet Field Trips Field Trips Essay Assignments Directed Research Quizzes and Exams	Multiple-Choice Exam Graded Essay Graded Essay Exam Assignments Graded Research Project Individual or Group Presentation Graded Class Discussion Graded Case Study

LEARNING OUTCOMES	LEARNING ACTIVITIES	EVALUATION METHODS
3. Explain why water is a widely used extinguishing agent, and describe how water extinguishes fires, and its limitations.	Assigned Readings Lectures Discussions Case Study Analysis AV/Multimedia Materials Internet Field Trips Field Trips Essay Assignments Directed Research Quizzes and Exams	Multiple-Choice Exam Graded Essay Graded Essay Exam Assignments Graded Research Project Individual or Group Presentation Graded Class Discussion Graded Case Study
4. Identify the different types and components of sprinkler, standpipe and foam systems.	Assigned Readings Lectures Discussions Case Study Analysis AV/Multimedia Materials Internet Field Trips Field Trips Essay Assignments Directed Research Quizzes and Exams	Multiple-Choice Exam Graded Essay Graded Essay Exam Assignments Graded Research Project Individual or Group Presentation Graded Class Discussion Graded Case Study
5. Define the benefits of residential sprinkler legislation.	Assigned Readings Lectures Discussions Case Study Analysis AV/Multimedia Materials Internet Field Trips Field Trips Essay Assignments Directed Research Quizzes and Exams	Multiple-Choice Exam Graded Essay Graded Essay Exam Assignments Graded Research Project Individual or Group Presentation Graded Class Discussion Graded Case Study
6. Identify five different types of non-water-based fire suppression systems and describe how each of these systems work to extinguish fires.	Assigned Readings Lectures Discussions Case Study Analysis AV/Multimedia Materials Internet Field Trips Field Trips Essay Assignments Directed Research Quizzes and Exams	Multiple-Choice Exam Graded Essay Graded Essay Exam Assignments Graded Research Project Individual or Group Presentation Graded Class Discussion Graded Case Study

LEARNING OUTCOMES	LEARNING ACTIVITIES	EVALUATION METHODS
7. Describe the basic components of a fire alarm system.	Assigned Readings Lectures Discussions Case Study Analysis AV/Multimedia Materials Internet Field Trips Field Trips Essay Assignments Directed Research Quizzes and Exams	Multiple-Choice Exam Graded Essay Graded Essay Exam Assignments Graded Research Project Individual or Group Presentation Graded Class Discussion Graded Case Study
8. Identify three different types of detectors and explain how they detect fire.	Assigned Readings Lectures Discussions Case Study Analysis AV/Multimedia Materials Internet Field Trips Field Trips Essay Assignments Directed Research Quizzes and Exams	Multiple-Choice Exam Graded Essay Graded Essay Exam Assignments Graded Research Project Individual or Group Presentation Graded Class Discussion Graded Case Study
9. Describe the hazards of smoke and list the four factors that can influence smoke movement in a building.	Assigned Readings Lectures Discussions Case Study Analysis AV/Multimedia Materials Internet Field Trips Field Trips Essay Assignments Directed Research Quizzes and Exams	Multiple-Choice Exam Graded Essay Graded Essay Exam Assignments Graded Research Project Individual or Group Presentation Graded Class Discussion Graded Case Study
10. Recognize the appropriate application of the different types of sprinklers.	Assigned Readings Lectures Discussions Case Study Analysis AV/Multimedia Materials Internet Field Trips Field Trips Essay Assignments Directed Research Quizzes and Exams	Multiple-Choice Exam Graded Essay Graded Essay Exam Assignments Graded Research Project Individual or Group Presentation Graded Class Discussion Graded Case Study

LEARNING OUTCOMES	LEARNING ACTIVITIES	EVALUATION METHODS
11. Explain the operation and appropriate application for the different types of portable fire extinguisher systems.	Assigned Readings Lectures Discussions Case Study Analysis AV/Multimedia Materials Internet Field Trips Field Trips Essay Assignments Directed Research Quizzes and Exams	Multiple-Choice Exam Graded Essay Graded Essay Exam Assignments Graded Research Project Individual or Group Presentation Graded Class Discussion Graded Case Study
12. Identify and analyze the causes involved in line-of-duty firefighter deaths related to structural firefighting, training, and research, and the reduction of emergency risks and accidents.	Assigned Readings Lectures Discussions Case Study Analysis AV/Multimedia Materials Internet Field Trips Field Trips Essay Assignments Directed Research Quizzes and Exams	Multiple-Choice Exam Graded Essay Graded Essay Exam Assignments Graded Research Project Individual or Group Presentation Graded Class Discussion Graded Case Study
13. Describe the relationships between fire behavior, Model Fire Codes, the Code process and fire protection systems.	Assigned Readings Lectures Discussions Case Study Analysis AV/Multimedia Materials Internet Field Trips Field Trips Essay Assignments Directed Research Quizzes and Exams	Multiple-Choice Exam Graded Essay Graded Essay Exam Assignments Graded Research Project Individual or Group Presentation Graded Class Discussion Graded Case Study
14. Describe code requirements for the design, installation, maintenance, and inspection of fire protections systems.	Assigned Readings Lectures Discussions Case Study Analysis AV/Multimedia Materials Internet Field Trips Field Trips Essay Assignments Directed Research Quizzes and Exams	Multiple-Choice Exam Graded Essay Graded Essay Exam Assignments Graded Research Project Individual or Group Presentation Graded Class Discussion Graded Case Study

LEARNING OUTCOMES	LEARNING ACTIVITIES	EVALUATION METHODS
15. Describe emerging technologies.	Assigned Readings Lectures Discussions Case Study Analysis AV/Multimedia Materials Internet Field Trips Field Trips Essay Assignments Directed Research Quizzes and Exams	Multiple-Choice Exam Graded Essay Graded Essay Exam Assignments Graded Research Project Individual or Group Presentation Graded Class Discussion Graded Case Study

At the conclusion of each semester/session, assessment of the learning outcomes will be completed by course faculty using the listed evaluation method(s). Aggregated results will be submitted to the Associate Vice President of Academic Affairs. The benchmark for each learning outcome is that *70% of students will meet or exceed outcome criteria.*

SEQUENCE OF TOPICS:

1. Basics of Fire Behavior
2. Fire Protection and the Model Code Process
3. Water Supplies for Fire Protection Systems
4. Standpipe and Hose Systems
5. Automatic Fire Sprinkler Systems
6. Specialized Water-Based Fire Protection Systems
7. Fire Alarm System Components and Functions
8. Types of Fire Alarm and Detection Systems
9. Wet and Dry Chemical Extinguishing Systems
10. Gaseous Agent Extinguishing Systems
11. Portable Fire Extinguishers
12. Smoke Control and Management Systems
13. Property Security, Emergency
14. Response, And Fire protection Systems
15. Emerging Technologies

LEARNING MATERIALS:

Jones, Sr., Maurice A. (2008). *Fire Protection Systems*. Delmar, Cengage Learning.

Other learning materials may be required and made available directly to the student and/or via the College's Libraries and/or course management system.

COURSE APPROVAL:

Prepared by: Don Nypower

Date: 6/1995

Revised by: Benn Prybutok

Date: 2/2/2009

VPAA/Provost Compliance Verification: Dr. John C. Flynn, Jr.

Date: 9/11/2009

Revised by: Benn Prybutok

Date: 2/2013

VPAA/Provost or designee Compliance Verification:

Victoria L. Bastecki-Perez, Ed.D.

Date: 2/25/2013

Revised by: Jayden Sampson

Date: 12/16/2017

VPAA/Provost or designee Compliance Verification:

Date: 12/18/2017



This course is consistent with Montgomery County Community College's mission. It was developed, approved and will be delivered in full compliance with the policies and procedures established by the College.