

Montgomery County Community College
FSC 106
Fire Investigation
3-3-0

COURSE DESCRIPTION:

The topics covered include: causes of fires, arson laws, investigative techniques, recognition and preservation of evidence, the interrogation of witnesses, reports, court procedure, testimony, and legal opinions.

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. Describe the fire investigator's role, responsibilities, and authority.	Assigned Readings Lectures Discussions Case Study Analysis Small Group Investigative Exercises 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 Graded Participation in Small Group Investigative Exercise
2. Identify the characteristics and impacts of fire loss and the crime of arson necessary to conduct competent fire investigation and analysis.	Assigned Readings Lectures Discussions Case Study Analysis Small Group Investigative Exercises 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 Graded Participation in Small Group Investigative Exercise

LEARNING OUTCOMES	LEARNING ACTIVITIES	EVALUATION METHODS
3. Explain the crime of arson and its various motives.	Assigned Readings Lectures Discussions Case Study Analysis Small Group Investigative Exercises 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 Graded Participation in Small Group Investigative Exercise
4. Document the fire scene in accordance with best practices and legal requirements.	Assigned Readings Lectures Discussions Case Study Analysis Small Group Investigative Exercises 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 Graded Participation in Small Group Investigative Exercise
5. Analyze the fire scenario utilizing the scientific method, fire science, and relevant technology.	Assigned Readings Lectures Discussions Case Study Analysis Small Group Investigative Exercises 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 Graded Participation in Small Group Investigative Exercise
6. Analyze the legal foundation for conducting a systematic incendiary fire investigation and case preparation.	Assigned Readings Lectures Discussions Case Study Analysis Small Group Investigative Exercises 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 Graded Participation in Small Group Investigative Exercise

LEARNING OUTCOMES	LEARNING ACTIVITIES	EVALUATION METHODS
7. Discuss the roles played by laboratory services.	Assigned Readings Lectures Discussions Case Study Analysis Small Group Investigative Exercises 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 Graded Participation in Small Group Investigative Exercise
8. Design and integrate a variety of arson related intervention and mitigation strategies.	Assigned Readings Lectures Discussions Case Study Analysis Small Group Investigative Exercises 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 Graded Participation in Small Group Investigative Exercise
9. Demonstrate competency in report writing and courtroom preparation.	Assigned Readings Lectures Discussions Case Study Analysis Small Group Investigative Exercises AV/Multimedia Materials Internet Field Trips	Graded Report Writing Exercise

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. Introduction to the Fire Problem
2. Analytical Fire Investigation/Basic Methodology
3. Chemistry of Combustion, NFPA 921, 924, 1033
4. The Nature and Behavior of Fire
5. The Combustion Properties of Fuels
6. Buildings, Building Systems, Construction

7. Planning the Investigation, Burn Patterns
8. Fire Cause Determination
9. Origin Determination, Sources of Ignition
10. Electricity as a Fire Cause
11. Appliance Fires
12. Structural Fires
13. Accidental Fires
14. Incendiary Fires
15. Scene Examination and Documentation
16. Wild land Fires
17. Vehicle Fires
18. Clothing Fires
19. Explosions and Explosive Combustion
20. Chemical Fires and Hazardous Materials
21. Fire and Explosion Deaths
22. Reports
23. Physical Evidence
24. Laboratory Services
25. Arson as a Crime
26. Motives
27. Failure Analysis
28. Analytical Tools
29. Juvenile Fire Setter

LEARNING MATERIALS:

DeHaan, John D. (2012). *Kirk's Fire Investigation* (7th ed.). Pearson-Prentice Hall.

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 and Michael Moonblatt	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.