



# BROWARD COLLEGE COURSE OUTLINE

**LAST REVIEW:** 2008 - 2009      **NEXT REVIEW:** 2013 – 2014      **STATUS:** A

**COURSE TITLE:** Latent Investigation

**COMMON COURSE NUMBER:** FFP 2630

**CREDIT HOURS:** 3

**CONTACT HOUR BREAKDOWN**

*(per 16 week term)*

**CLOCK HOURS:**

*(Voc. Course ONLY)*

Lecture: 40      Lab: 4

Clinic:      Other: 4

**PREREQUISITE(S):** Municipal Fire Inspector Certification

**COREQUISITE(S):** None

**PRE/COREQUISITE(S):**

**COURSE DESCRIPTION** *(750 characters, maximum):*

Study of proper crime scene and fire scene investigation including conduct of appropriate documentation, collection and preservation of evidence, and the qualitative analysis of data to determine whether or not prosecution for the crime of arson is indicated. Special situations/problems will be examined including the arsonist's use of explosives, and hazardous materials. Motives for arson will be discussed, and distinctions made between civil and criminal situations.

General Education Requirements – Associate of Arts Degree (AA), meets Area(s):      Area

General Education Requirements – Associate in Science Degree (AS), meets Area(s):      Area

General Education Requirements – Associate in Applied Science Degree (AAS), meets Area(s):      Area

**UNIT TITLES**

1. The Crime of Arson
2. Examination of Motives
3. The Arson Set
4. Collection and Interpretation of Evidence
5. Properties of Explosives and Explosive Combustion
6. Properties of Chemical and Hazardous Material Fires
7. Analysis of Fire Related Deaths
8. Life Safety 101 Considerations
9. Utilizing Laboratory Services
10. Investigative Considerations

## EVALUATION:

Please provide a brief description (250 characters maximum) that details how students will be evaluated on the course outcomes.

1. Quizzes, Test, and/or Final Exam (cumulative/comprehensive);
2. Selected faculty may assess homework, projects, class participation/attendance, and/or extra credit projects.

*\*\*\* Complete the following only if course is seeking general education status \*\*\**

## GENERAL EDUCATION Competencies and Skills\*:

Please highlight in green font all Competencies/Skills from the list below that apply to this course. In the box to the right of the Competency/Skill, enter all specific learning outcome numbers (i.e. 1.1, 2.7, 5.12) that apply.

<b>1. Read with critical comprehension</b>	
<b>2. Speak and listen effectively</b>	
<b>3. Write clearly and coherently</b>	
<b>4. Think creatively, logically, critically, and reflectively</b> (analyze, synthesize, apply, and evaluate)	
<b>5. Demonstrate and apply literacy in its various forms:</b> <i>(highlight in <span style="color: green;">green</span> ALL that apply)</i> ( 1. technological, 2. informational, 3. mathematical, 4. scientific, 5. cultural, 6. historical, 7. aesthetic and/or 8. environmental )	
<b>6. Apply problem solving techniques to real-world experiences</b>	
<b>7. Apply methods of scientific inquiry</b>	
<b>8. Demonstrate an understanding of the physical and biological environment and how it is impacted by human beings</b>	
<b>9. Demonstrate an understanding of and appreciation for human diversities and commonalities</b>	
<b>10. Collaborate with others to achieve common goals.</b>	
<b>11. Research, synthesize and produce original work</b>	
<b>12. Practice ethical behavior</b>	
<b>13. Demonstrate self-direction and self motivation</b>	
<b>14. Assume responsibility for and understand the impact of personal behaviors on self and society</b>	
<b>15. Contribute to the welfare of the community</b>	

*\* General Education Competencies and Skills endorsed by '05-'06 General Education Task Force*

## **UNITS**

### **Unit 1      The Crime of Arson**

#### **General Outcome:**

- 1.0 The students should be able to accurately define the crime of arson and recognize the essential elements required for conviction.

#### **Specific Measurable Learning Outcomes:**

**Upon successful completion of this unit, the student shall be able to:**

- 1.1 Define and describe the role and responsibilities of the fire investigator.
- 1.2 Distinguish between the natural, accidental, or intentional origin of fires.
- 1.3 Recognize the difficulty in conducting a proper investigation and successfully prosecuting arson cases.
- 1.4 Describe the three elements of the crime of arson.
- 1.5 Recognize/utilize applicable terms related to the crime of arson, and the investigative process.

**Unit 2 Examination of Motives****General Outcome:**

- 2.0 The students should be able to recognize the driving forces (motivation) behind the crime of arson and effectively distinguish between issues of cause, reason, or incentive that tend to induce or prompt specific behavior.

**Specific Measurable Learning Outcomes:**

**Upon successful completion of this unit, the student shall be able to:**

- 2.1 Define and discuss the differences between rational and motiveless (or pathological) categories of motivation.
- 2.2 Define/describe pyromania.
- 2.3 Define/describe the various types of fraud.
- 2.4 Define/describe hate, spite, and revenge motives.
- 2.5 Define/describe thrill seeking, and vandalism motives.
- 2.6 Define/describe hero seeking (or vanity) motives.
- 2.7 Define/describe social protest and terrorism motives.
- 2.8 Define/describe concealment (of another crime) motives.

**Unit 3      The Arson Set**

**General Outcome:**

- 3.0 The students should be able to recognize the importance of satisfying the fundamental requirements of fuel, oxygen, and a reliable ignition source to effect a large quick-spreading fire.

**Specific Measurable Learning Outcomes:**

**Upon successful completion of this unit, the student shall be able to:**

- 3.1 Discuss the considerations of alternative fire locations.
- 3.2 Discuss the considerations of using various fuels.
- 3.3 Describe the characteristics of various accelerants.
- 3.4 Differentiate between various methods of initiation.

**Unit 4** Collection and Interpretation of Evidence**General Outcome:**

- 4.0 The students should be able to properly collect and submit evidence from a fire scene; and accurately interpret evidence at a fire scene, recognizing indicators of arson, and determining factors that may reveal the possible identity of the arsonist.

**Specific Measurable Learning Outcomes:**

**Upon successful completion of this unit, the student shall be able to:**

- 4.1 Effectively determine which areas of a fire scene will produce useful samples.
- 4.2 Properly collect and submit samples from a fire scene for analysis.
- 4.3 Differentiate between inductive and deductive reasoning.
- 4.4 Systematically eliminate natural causes as the source of a suspicious fire.
- 4.5 Effectively describe/utilize criminal analysis or profiling.

**Unit 5** Properties of Explosives and Explosive Combustion**General Outcome:**

- 5.0 The students should be able to recognize and explain the difference between explosions and explosive combustion, by the correct interpretation of evidence at a fire scene.

**Specific Measurable Learning Outcomes:**

**Upon successful completion of this unit, the student shall be able to:**

- 5.1 Define and describe the process of combustion.
- 5.2 Define and describe the concept of deflagration.
- 5.3 Define and describe the characteristics of a detonation.
- 5.4 Define and describe characteristics of diffuse-phase explosions.
- 5.5 Define and describe the properties of gases.
- 5.6 Discuss the proper procedure for investigating explosions caused by (or involving) explosives.
- 5.7 Define and describe the properties of mechanical explosions.

**Unit 6            Properties of Chemical and Hazardous Material Fires**

**General Outcome:**

6.0 The students should be able to recognize the affect hazardous materials can have on fires, with a particular focus on incendiary or intentional fires.

**Specific Measurable Learning Outcomes:**

**Upon successful completion of this unit, the student shall be able to:**

- 6.1 Define and describe the characteristics of flammable gases.
- 6.2 Define and describe the characteristics of flammable liquids.
- 6.3 Define and describe the characteristics of combustible solids, including incendiary mixtures.
- 6.4 Define and describe the characteristics and special hazards of a clandestine drug lab.

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**Unit 7      Analysis of Fire Related Deaths****General Outcome:**

7.0 The students should be able to recognize the various agency responsibilities with regard to fire deaths, and describe the correct procedure for conduct of the fire related investigation.

**Specific Measurable Learning Outcomes:**

**Upon successful completion of this unit, the student shall be able to:**

- 7.1 Define and describe the primary cause of fire deaths.
- 7.2 Recognize the characteristics of human vs animal remains.
- 7.3 Analyze the fire scene to systematically determine the mechanism of death, i.e. fire related, the consequence of violence, or accidental
- 7.4 Methodically assess/evaluate a victim's pose/posture for additional causal evidence, i.e. pugilistic or other.
- 7.5 Recognize the characteristics of CO asphyxiation, and the possible sources.

**Unit 8      Life Safety 101 Considerations**

**General Outcome:**

8.0 The students should be able to recognize the potential significance of Life Safety Code factors/considerations that may have applicability at a crime scene.

**Specific Measurable Learning Outcomes:**

**Upon successful completion of this unit, the student shall be able to:**

8.1 Recognize the various types of construction.

8.2 Define and describe the occupancy types and classifications.

8.3 Define and describe egress requirements.

8.4 Recognize any change in code requirements related to change in types of occupancy.

8.5 Discuss implications of radical or significant departure from any previous findings related to fire safety inspections.

**Unit 9 Utilizing Laboratory Services**

**General Outcome:**

- 9.0 The students should be able to recognize the evidentiary limitations of investigators, and the potential advantage of using other experts to ensure all evidence is appropriately analyzed and the investigation is thoroughly complete.

**Specific Measurable Learning Outcomes:**

**Upon successful completion of this unit, the student shall be able to:**

- 9.1 Define and describe the properties of forensic evidence.
- 9.2 Define and describe the characteristics of general fire evidence.
- 9.3 Define and describe the concept of failure analysis.
- 9.4 Describe and discuss various miscellaneous lab tests.
- 9.5 Explain the process of sample analysis by gas chromatography.
- 9.6 Describe and discuss the process of sample analysis by steam distillation.
- 9.7 Describe and discuss non-fire related criminal evidence.

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**Unit 10** Investigative Considerations**General Outcome:**

10.0 The students should be able to recognize the rules of evidence, and comply with all laws related to search and seizure; and describe and discuss the principles of interview and interrogation.

**Specific Measurable Learning Outcomes:**

**Upon successful completion of this unit, the student shall be able to:**

- 10.1 Distinguish between the essential elements of proof for the crime of arson.
- 10.2 Distinguish between direct and circumstantial evidence.
- 10.3 Describe and discuss the four aspects of physical evidence.
- 10.4 Describe and discuss the custody requirements for evidence.
- 10.5 Define and describe the laws related to search and seizure.
- 10.6 Explain the methods for acquiring lawful permission to conduct a search.
- 10.7 Describe and discuss significant court cases related to search and seizure, i.e. Michigan vs Tyler, and Michigan vs Clifford.
- 10.8 Describe and discuss the various sources of information available to support the investigative process.
- 10.9 Describe and discuss the relationship of property and casualty insurance as it relates to arson cases.
- 10.10 Describe and discuss the exclusionary rule.
- 10.11 Describe and discuss the strategic/legal considerations of courtroom testimony.
- 10.12 Describe and discuss the essentials of good report writing.