Course Description

Explores the analytical and systematic approach relating to fire scene investigations involving crime scenes, accidental causes, and the collection of evidence. The role of evolving technologies used for fire scene investigations is studied with emphasis on the use of forensic science in reconstructing an incident. The modern fire investigator must be able to justify the validity and reliability of his or her findings against peer review. This course prepares students for contemporary methods of fire investigations.

Course Textbook


Course Learning Outcomes

Upon completion of this course, students should be able to:

1. Explain the fundamentals of forensic science as used in fire investigations.
2. Define the scientific method used to complete a fire investigation.
3. Explain the use of fire dynamics in a fire investigation.
4. Classify fire patterns and their causes.
5. Illustrate the proper documentation and reconstruction of a fire scene.
6. Outline the development of a working hypothesis of a fire investigation.
7. Interpret the factors that contribute to human injuries and deaths involving fire.
8. Describe the different types of fire testing and the use of fire test data.

Credits

Upon completion of this course, the students will earn three (3) hours of college credit.

Course Structure

1. **Unit Learning Outcomes:** Each unit contains Learning Outcomes that specify the measurable skills and knowledge students should gain upon completion of the unit.
2. **Unit Lessons:** Each unit contains a Unit Lesson, which discusses unit material.
3. **Reading Assignments:** Each unit contains Reading Assignments from one or more chapters from the textbook or other resources. Suggested Readings are listed in the unit study guides to aid students in their course of study. The readings themselves may or may not be provided in the course, but students are encouraged to read the resources listed if the opportunity arises as they have valuable information that expands upon the lesson material. Students will not be tested on their knowledge of the Suggested Readings. Chapter presentations are provided in each unit study guide as Suggested Reading to aid students in their course of study.
4. **Discussion Boards:** Discussion Boards are part of all CSU term courses. More information and specifications can be found in the Student Resources link listed in the Course Menu bar.
5. **Unit Assessments:** This course contains five Unit Assessments, one to be completed at the end of Units I, II, V, VII, and VIII. Assessments are composed of written response questions.
6. **Unit Assignments:** Students are required to submit for grading Unit Assignments in Units II, III, IV, VI, and VII. Specific information and instructions regarding these assignments are provided below. Grading rubrics are included with each assignment. Specific information about accessing these rubrics is provided below.
7. **Ask the Professor:** This communication forum provides you with an opportunity to ask your professor general or course content related questions.

8. **Student Break Room:** This communication forum allows for casual conversation with your classmates.

---

**CSU Online Library**

The CSU Online Library is available to support your courses and programs. The online library includes databases, journals, e-books, and research guides. These resources are always accessible and can be reached through the library webpage. To access the library, log into the myCSU Student Portal, and click on “CSU Online Library.” You can also access the CSU Online Library from the “My Library” button on the course menu for each course in Blackboard.

The CSU Online Library offers several reference services. E-mail (library@columbiasouthern.edu) and telephone (1.877.268.8046) assistance is available Monday – Thursday from 8 am to 5 pm and Friday from 8 am to 3 pm. The library’s chat reference service, *Ask a Librarian*, is available 24/7; look for the chat box on the online library page.

Librarians can help you develop your research plan or assist you in finding relevant, appropriate, and timely information. Reference requests can include customized keyword search strategies, links to articles, database help, and other services.

---

**Unit Assignments**

**Unit II Essay**

For this assignment, please complete the following:

- Explain the fundamentals of forensic science as used in fire investigations.
- Define and explain the scientific method, along with the seven basic steps utilized in the systematic approach.

Your response should be a minimum of 700 words in length. You are required to use at least your textbook as source material for your response. All sources used, including the textbook, must be referenced; paraphrased and quoted material must have accompanying citations. All references and citations used must be in APA style.

Information about accessing the Blackboard Grading Rubric for this assignment is provided below.

**Unit III Essay**

In this writing project, you will explain and reflect on various fire dynamics and fire-pattern concepts. Include the following in this assignment:

- Discuss the use of fire patterns in an investigation.
- Correlate how recognizing fire patterns relates to fire dynamics.
- Describe how plume calculations assist in explaining fire patterns.

Your response should be a minimum of 700 words in length. You are required to use at least your textbook as source material for your response. All sources used, including the textbook, must be referenced; paraphrased and quoted material must have accompanying citations. All references and citations used must be in APA style.

Information about accessing the Blackboard Grading Rubric for this assignment is provided below.

**Unit IV Essay**

Read the following article:


Additionally, use the Internet and the CSU Online Library to search for articles and case citations (such as those found on page 218, Table 4-4) related to NFPA 921 and ASTM E860 on spoliation. Respond to the following questions, and reference at least one article from the CSU Online Library in your response:
1. Define spoliation.
2. Compare and contrast when evidence should be secured in place and when it should be removed from the scene.
3. Discuss how to document the area prior to removing a piece of evidence.
4. What specific guidelines would you recommend implementing in order to improve the effectiveness of scene documentation?

Your response should be a minimum of two pages in length. You are required to use at least your textbook and one article from the CSU Online Library as source materials for your response. All sources used, including the textbook, must be referenced; paraphrased and quoted material must have accompanying citations. All references and citations used must be in APA style.

Information about accessing the Blackboard Grading Rubric for this assignment is provided below.

Unit VI Case Study

For this assignment, locate and read the following case study:


Once you have read and reviewed the case scenario, respond to the following questions with thorough explanations and well-supported rationale:

1. What fire model did they use for analysis, and was the model they chose verified and validated? Explain.
2. What other programs were used for their study, and why did they use them?
3. What types of data were used for the simulation?
4. Was their approach to the fire model probabilistic or deterministic, and explain why?
5. Did their simulation findings match the actual conditions?

Your critique should be a minimum of two pages, double-spaced, excluding the title and reference pages. All sources used, including the textbook, must be referenced; paraphrased and quoted material must have accompanying citations. All references and citations used must be in APA style.

Information about accessing the Blackboard Grading Rubric for this assignment is provided below.

Unit VII Article Critique

Locate the following article in the Academic Search Complete database in the CSU Online Library:


Read the article and write a critique that includes the following elements:

- a brief introduction to the article;
- summary of the key points in the article;
- discussion of how the article supports the use of such things as fire-dynamics simulators, fire-scene drawings, photography, and timelines in the reconstruction of the fire scene; and
- summary of the article’s conclusions and your own opinions.

Your critique should be a minimum of two pages, double-spaced, excluding the title and reference pages. All sources used, including the textbook, must be referenced; paraphrased and quoted material must have accompanying citations. All references and citations used must be in APA style.

Information about accessing the Blackboard Grading Rubric for this assignment is provided below.
APA Guidelines

The application of the APA writing style shall be practical, functional, and appropriate to each academic level, with the primary purpose being the documentation (citation) of sources. CSU requires that students use APA style for certain papers and projects. Students should always carefully read and follow assignment directions and review the associated grading rubric when available. Students can find CSU’s Citation Guide by clicking here. This document includes examples and sample papers and provides information on how to contact the CSU Success Center.

Grading Rubrics

This course utilizes analytic grading rubrics as tools for your professor in assigning grades for all learning activities. Each rubric serves as a guide that communicates the expectations of the learning activity and describes the criteria for each level of achievement. In addition, a rubric is a reference tool that lists evaluation criteria and can help you organize your efforts to meet the requirements of that learning activity. It is imperative for you to familiarize yourself with these rubrics because these are the primary tools your professor uses for assessing learning activities.

Rubric categories include: (1) Discussion Board, (2) Assessment (Written Response), and (3) Assignment. However, it is possible that not all of the listed rubric types will be used in a single course (e.g., some courses may not have Assessments).

The Discussion Board rubric can be found within Unit I’s Discussion Board submission instructions.

The Assessment (Written Response) rubric can be found embedded in a link within the directions for each Unit Assessment. However, these rubrics will only be used when written-response questions appear within the Assessment.

Each Assignment type (e.g., article critique, case study, research paper) will have its own rubric. The Assignment rubrics are built into Blackboard, allowing students to review them prior to beginning the Assignment and again once the Assignment has been scored. This rubric can be accessed via the Assignment link located within the unit where it is to be submitted. Students may also access the rubric through the course menu by selecting “Tools” and then “My Grades.”

Again, it is vitally important for you to become familiar with these rubrics because their application to your Discussion Boards, Assessments, and Assignments is the method by which your instructor assigns all grades.

Communication Forums

These are non-graded discussion forums that allow you to communicate with your professor and other students. Participation in these discussion forums is encouraged, but not required. You can access these forums with the buttons in the Course Menu. Instructions for subscribing/unsubscribing to these forums are provided below.

Click here for instructions on how to subscribe/unsubscribe and post to the Communication Forums.

Ask the Professor

This communication forum provides you with an opportunity to ask your professor general or course content questions. Questions may focus on Blackboard locations of online course components, textbook or course content elaboration, additional guidance on assessment requirements, or general advice from other students.

Questions that are specific in nature, such as inquiries regarding assessment/assignment grades or personal accommodation requests, are NOT to be posted on this forum. If you have questions, comments, or concerns of a non-public nature, please feel free to email your professor. Responses to your post will be addressed or emailed by the professor within 48 hours.

Before posting, please ensure that you have read all relevant course documentation, including the syllabus, assessment/assignment instructions, faculty feedback, and other important information.
Student Break Room

This communication forum allows for casual conversation with your classmates. Communication on this forum should always maintain a standard of appropriateness and respect for your fellow classmates. This forum should NOT be used to share assessment answers.

Grading

- Discussion Boards (8 @ 2%) = 16%
- Unit Assessments (5 @ 8%) = 40%
- Essays (3 @ 8%) = 24%
- Unit VI Case Study = 10%
- Unit VII Article Critique = 10%
- **Total** = **100%**

Course Schedule/Checklist (PLEASE PRINT)

The following pages contain a printable Course Schedule to assist you through this course. By following this schedule, you will be assured that you will complete the course within the time allotted.
By following this schedule, you will be assured that you will complete the course within the time allotted. Please keep this schedule for reference as you progress through your course.

## Unit I
### The Principles of Fire Scene Reconstruction

**Review:**
- Unit Study Guide

**Read:**
- **Chapter 1:** Principles of Reconstruction
- **Suggested Reading:** See Study Guide

**Discuss:**
- **Discussion Board Response:** Submit your response to the Discussion Board question by Saturday, 11:59 p.m. CST (Central Time)
- **Discussion Board Comment:** Comment on another student’s Discussion Board response by Tuesday, 11:59 p.m. CST (Central Time)

**Submit:**
- **Assessment** by Tuesday, 11:59 p.m. CST (Central Time)

Notes/Goals:

## Unit II
### Fire Dynamics

**Review:**
- Unit Study Guide

**Read:**
- **Chapter 2:** Basic Fire Dynamics
- **Suggested Reading:** See Study Guide

**Discuss:**
- **Discussion Board Response:** Submit your response to the Discussion Board question by Saturday, 11:59 p.m. CST (Central Time)
- **Discussion Board Comment:** Comment on another student’s Discussion Board response by Tuesday, 11:59 p.m. CST (Central Time)

**Submit:**
- **Assessment** by Tuesday, 11:59 p.m. CST (Central Time)
- **Essay** by Tuesday, 11:59 p.m. CST (Central Time)

Notes/Goals:

## Unit III
### Fire Patterns

**Review:**
- Unit Study Guide

**Read:**
- **Chapter 3:** Fire Pattern Analysis
- **Suggested Reading:** See Study Guide

**Discuss:**
- **Discussion Board Response:** Submit your response to the Discussion Board question by Saturday, 11:59 p.m. CST (Central Time)
- **Discussion Board Comment:** Comment on another student’s Discussion Board response by Tuesday, 11:59 p.m. CST (Central Time)

**Submit:**
- **Essay** by Tuesday, 11:59 p.m. CST (Central Time)

Notes/Goals:
# FIR 4314, Crime Scene, Forensics, and Evidence Collection

## Course Schedule

### Unit IV: Systematic Documentation

**Review:**
- Unit Study Guide

**Read:**
- Chapter 4: Fire Scene Documentation
- Additional Reading Assignment(s): See Study Guide
- Suggested Reading: See Study Guide

**Discuss:**
- Discussion Board Response: Submit your response to the Discussion Board question by Saturday, 11:59 p.m. CST (Central Time)
- Discussion Board Comment: Comment on another student’s Discussion Board response by Tuesday, 11:59 p.m. CST (Central Time)

**Submit:**
- Essay by Tuesday, 11:59 p.m. CST (Central Time)

### Notes/Goals:

### Unit V: Analysis of an Arson Scene

**Review:**
- Unit Study Guide

**Read:**
- Chapter 5: Arson Crime Scene Analysis
- Suggested Reading: See Study Guide

**Discuss:**
- Discussion Board Response: Submit your response to the Discussion Board question by Saturday, 11:59 p.m. CST (Central Time)
- Discussion Board Comment: Comment on another student’s Discussion Board response by Tuesday, 11:59 p.m. CST (Central Time)

**Submit:**
- Assessment by Tuesday, 11:59 p.m. CST (Central Time)

### Notes/Goals:

### Unit VI: Fire Modeling

**Review:**
- Unit Study Guide

**Read:**
- Chapter 6: Fire Modeling
- Additional Reading Assignment(s): See Study Guide
- Suggested Reading: See Study Guide

**Discuss:**
- Discussion Board Response: Submit your response to the Discussion Board question by Saturday, 11:59 p.m. CST (Central Time)
- Discussion Board Comment: Comment on another student’s Discussion Board response by Tuesday, 11:59 p.m. CST (Central Time)

**Submit:**
- Case Study by Tuesday, 11:59 p.m. CST (Central Time)

### Notes/Goals:
## FIR 4314, Crime Scene, Forensics, and Evidence Collection

### Course Schedule

#### Unit VII: Deaths and Injuries by Fire

**Review:**
- [ ] Unit Study Guide

**Read:**
- [ ] **Chapter 7:** Fire Deaths and Injuries
- [ ] **Suggested Reading:** See Study Guide

**Discuss:**
- [ ] **Discussion Board Response:** Submit your response to the Discussion Board question by Saturday, 11:59 p.m. CST (Central Time)
- [ ] **Discussion Board Comment:** Comment on another student’s Discussion Board response by Tuesday, 11:59 p.m. CST (Central Time)

**Submit:**
- [ ] **Assessment** by Tuesday, 11:59 p.m. CST (Central Time)
- [ ] **Article Critique** by Tuesday, 11:59 p.m. CST (Central Time)

#### Notes/Goals:

#### Unit VIII: Fire Testing

**Review:**
- [ ] Unit Study Guide

**Read:**
- [ ] **Chapter 8:** Fire Testing
- [ ] **Suggested Reading:** See Study Guide

**Discuss:**
- [ ] **Discussion Board Response:** Submit your response to the Discussion Board question by Saturday, 11:59 p.m. CST (Central Time)
- [ ] **Discussion Board Comment:** Comment on another student’s Discussion Board response by Tuesday, 11:59 p.m. CST (Central Time)

**Submit:**
- [ ] **Assessment** by Tuesday, 11:59 p.m. CST (Central Time)

#### Notes/Goals: