

FLORIDA STATE COLLEGE AT JACKSONVILLE

COLLEGE CREDIT COURSE OUTLINE

COURSE NUMBER: FES 4685

COURSE TITLE: Incendiary Fire Analysis and Investigation

PREREQUISITE(S): None

COREQUISITE(S): None

STUDENT ADVISING NOTES: Junior Level Status or Above

CREDIT HOURS: 3

CONTACT HOURS/WEEK: 3

CONTACT HOUR BREAKDOWN:

 Lecture/Discussion: 3

 Laboratory:

 Other _____:

FACULTY WORKLOAD POINTS: 3

STANDARDIZED CLASS SIZE ALLOCATION: 30

CATALOG COURSE DESCRIPTION:

This course examines technical, investigative, legal, and managerial approaches to the arson problem, including principles of incendiary fire analysis and detection, environmental and psychological factors of arson, gang-related arson, legal considerations and trial preparations, managing the fire investigation unit, intervention and mitigation strategies, and shaping the future.

SUGGESTED TEXT(S): Kirk's Fire Investigation, Brady/Prentice Hall, Inc.

IMPLEMENTATION DATE: Fall Term, 2006 (20071)

REVIEW OR MODIFICATION DATE: Spring Term, 2007 (20072)

COURSE TOPICS	CONTACT HOURS <u>PER TOPIC</u>
<p>I. Introduction to Incendiary Fire Analysis and Investigation</p> <p>A. Cite the national fire data trends on property and loss of life in the United States as a result of incendiary and suspicious fire</p> <p>B. Explain the difference among the terms "arson," "incendiary" and "suspicious" relative to the NFPA classification of fire incidents</p> <p>C. Indicate the importance of NFPA's operational definitions for the terms "incendiary" and "suspicious" fires</p> <p>D. Distinguish between the NFIRS and NFPA fire data collection systems</p> <p>E. Identify the significance of these systems for the analysis of incendiary fire trends</p> <p>F. Identify four of the major organizations with resources available to assist communities as they develop fire analysis procedures</p> <p>G. Identify the main elements of an effective incendiary fire prevention program.</p>	4
<p>II. Chemistry of Fire</p> <p>A. Identify the four elements of the fire tetrahedron</p> <p>B. Describe the interrelationships of these four elements</p> <p>C. Describe the burning characteristics of solid, liquid, and gaseous fuels</p> <p>D. Define pyrolysis</p> <p>E. Define heat release rate</p> <p>F. Name five different ignition sources</p> <p>G. Describe the relationship between types of fuel and possible ignition sources</p>	4
<p>III. Fire Dynamics</p> <p>A. Describe the three methods of heat transfer</p> <p>B. Describe the ignition process in solid fuels</p> <p>C. Describe the effects of heat release rate on types of fuel</p> <p>D. Explain the importance of the plume in the development of compartment fires</p> <p>E. Describe the interrelationship of fuel, heat release, ventilation, and time</p> <p>F. Define the critical factors in flashover and extension</p> <p>G. Describe the effects of fire on materials such as glass, wood, concrete, and metals</p>	4
<p>IV. Fire Scene Investigation</p> <p>A. Define the roles of first responders in cause and origin determination</p> <p>B. Describe the necessity of preserving the fire scene while implementing appropriate suppression tactics</p> <p>C. Describe the sequence of activities in proper scene documentation</p> <p>D. List the sequence of basic steps in fire investigation;</p> <p>E. Describe the importance of matching ignition sources to the fuel first ignited;</p> <p>F. Describe special considerations of:- wildland fires;- vehicle fires, and- high-rise fires</p>	4

COURSE TOPICS	CONTACT HOURS <u>PER TOPIC</u>
<ul style="list-style-type: none"> A. Describe the impact of Supreme Court decisions in <i>Michigan v. Tyler</i> and <i>Michigan v. Clifford</i> G. List advantages and disadvantages of canine arson accelerant detection teams. 	
V. Incendiary Crime Investigation	4
<ul style="list-style-type: none"> A. Identify the five major steps in a comprehensive incendiary crime investigation B. Identify six persons who should be interviewed during the investigation C. List five sources of ownership/occupant and other case-specific information D. Describe three legal requirements of the investigative process 	
VI. Environmental Factors Influencing the Arson Problem	4
<ul style="list-style-type: none"> A. List nine general motives for arson behavior B. Describe the economic conditions that help to identify an arson-prone neighborhood C. Describe the "vacant lot" arson scheme D. Identify susceptible properties for "building improvement" arson E. Describe the two forms of arson that occur during civil unrest F. Explain the effects of insurance plans and property transfers in identifying potential arson targets G. List the political and social factors that influence arson target selection 	
VII. The Sociology of Arson: Criminal Gangs and Gang-Related Arson	4
<ul style="list-style-type: none"> A. Describe changing value systems and their effect on the arson problem; B. Explain how local gangs are involved in arson; C. List the various factors that illustrate the role of international organized crime on arson D. Identify connections between the drug culture and arson. 	
VIII. Psychological Factors Influencing the Arson Problem	4
<ul style="list-style-type: none"> A. List and describe the three major categories of juvenile fire setters B. Cite each of the six diagnostic criteria for pyromania as stated in the <i>Diagnostic and Statistical Manual of Mental Disorders, 4th Ed. (DSM-IV)</i>; C. Describe the characteristics of vanity fire setters D. Provide examples of each of the three types of revenge fire setters E. Discuss the connection between arson and other types of crimes F. Explain the criminal profiling process and describe the profile of a professional arsonist 	

COURSE TOPICS	CONTACT HOURS <u>PER TOPIC</u>
IX. Legal Considerations and Preparing for Trial	4
<ul style="list-style-type: none"> A. Differentiate between a civil and a criminal act B. List the four elements of common-law arson C. Describe the Exclusionary Rule and its effect on the arson investigator D. Summarize the provisions of the Fourth Amendment E. Define the terms arrest and detention F. State the constitutional limits involving the privilege against self incrimination and the right to counsel in the contexts of an arrest, interrogation, and confession G. Trace the major steps of the criminal trial process from arrest through adjudication H. Define and give examples of relevant evidence I. Recognize a statement that is hearsay J. Explain the Best Evidence Rule as it pertains to written instruments K. Describe the role of an arson investigator as an expert witness when testifying in court 	
VII. Managing the Fire Investigation Unit	3
<ul style="list-style-type: none"> A. Describe the functional organization of a fire investigation unit B. Choose from several proactive arson prevention strategies C. Identify quality management principles D. Develop quality management plans E. Identify effective case management procedures F. Recognize performance measurement factors for fire investigation units G. Develop a performance-based budget H. Recognize essential training, standards, and accreditation practices 	
XI. Intervention and Mitigation Strategies for Combating Arson	3
<ul style="list-style-type: none"> A. Discuss the role of the community in arson reduction efforts; B. Describe the role of local public safety organizations in developing incendiary mitigation programs; C. Discuss the role of the private sector in arson mitigation; D. Define the use of pattern recognition and other profiling techniques in identifying arson-prone target E. List sources of data available at the local, state, and federal levels in planning anti-arson strategies. 	
XII. Shaping the Future of Arson Investigation	3
<ul style="list-style-type: none"> A. Identify and describe the possible future processes and techniques involved in fire investigation B. Describe the educational needs and technical competence of the fire investigator in the future C. Explain the difference between probabilistic and deterministic fire models; D. Identify and describe the differences between zone and field models of compartment fires E. Identify the importance of fire model validation procedures for the fire investigator F. Describe the possible application of various fire models in the fire investigation process G. Explain the possible advantages of the application of expert system models to fire investigation management 	



NOTE: Use either the Tab key or mouse click to move from field to field. The box will expand to accommodate your entry.

<i>Section 1</i>		SEMESTER CREDIT HOURS: 3
COURSE PREFIX AND NUMBER: <u>FES 4685</u>		
COURSE TITLE: <u>Incendiary Fire Analysis and Investigation</u>		
<i>Section 2</i>		
TYPE OF COURSE: (Click on the box to check all that apply)		
<input type="checkbox"/> AA Elective	<input type="checkbox"/> AS Required Professional Course	<input type="checkbox"/> College Prep
<input type="checkbox"/> AS Professional Elective	<input type="checkbox"/> AAS Required Professional Course	<input type="checkbox"/> Technical Certificate
<input checked="" type="checkbox"/> Other <u>BAS required Professional Course</u>		
<input type="checkbox"/> General Education: (For General Education courses, you must also complete Section 3 and Section 7)		
<i>Section 3 (If applicable)</i>		
INDICATE BELOW THE DISCIPLINE AREA FOR GENERAL EDUCATION COURSES:		
<input type="checkbox"/> Communications	<input type="checkbox"/> Social & Behavioral Sciences	<input type="checkbox"/> Mathematics
<input type="checkbox"/> Natural Sciences	<input type="checkbox"/> Humanities	
<i>Section 4</i>		
INTELLECTUAL COMPETENCIES:		
<input checked="" type="checkbox"/> Reading	<input checked="" type="checkbox"/> Speaking	<input checked="" type="checkbox"/> Critical Analysis
<input checked="" type="checkbox"/> Writing	<input checked="" type="checkbox"/> Listening	<input type="checkbox"/> Information Literacy
<input checked="" type="checkbox"/> Quantitative Skills	<input checked="" type="checkbox"/> Scientific Method of Inquiry	<input type="checkbox"/> Ethical Judgment
<input checked="" type="checkbox"/> Working Collaboratively		
<i>Section 5</i>		
	LEARNING OUTCOMES	METHOD OF ASSESSMENT
• 1	Cite the national fire datat trends on property and loss of life in US as a result of incendiary and suspicious "Fire"	exam
• 2	identiy the four elements of the tire tetrahedron	exam, oral
• 3	describe the the effects of heat release rate on types of fuel	exam
• 4	list the sequence of basic steps in fire investigation	exam
• 5	descriibe three legal requirements of the investigative process	exam
• 6	identiy connections between the drug culture and arson	exam
• 7	list and describe the three major categories of juvenile firesetters	exam
• 8	define and give examples of relevant evidence	exam
• 9	identify quality management principles	exam
• 9	discuss the role of the private sector in arson mitigation	exam
<i>Section 6</i>		

Name of Person Completing This Form: Richard Nelson

Date: 8-22-05