

FLORIDA STATE COLLEGE AT JACKSONVILLE
COLLEGE CREDIT COURSE OUTLINE

COURSE NUMBER: FES 4174

COURSE TITLE: Application of Fire Research

PREREQUISITE(S): FES 3103 and STA 2023

COREQUISITE(S): None

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 the rationale for conducting fire research, various fire protection research activities, and research applications, including fire test standards and codes, structural fire safety, automatic detection and suppression, life safety, and firefighter health and safety.

SUGGESTED TEXT(S): Applications of Fire Research Course Guide, National Fire Academy

IMPLEMENTATION DATE: Fall Term, 2006

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

COURSE TOPICS	CONTACT HOURS <u>PER TOPIC</u>
<p>I. Introduction to Fire Research</p> <p>A. Compare the research methodologies of scientific method and systems analysis</p> <p>B. Discuss the four steps of a research project</p> <p>C. List five components of a problem definition</p> <p>D. Identify three criteria for the validation of research results</p> <p>E. Define fire research</p> <p>F. List three objectives of fire research</p> <p>G. Identify the goals and programs of the Building and Fire Research Laboratory of the National Institute of Standards and Technology</p> <p>H. List four sources from which information on fire research is available</p>	11
<p>II. Fire Dynamics</p> <p>A. Define fire dynamics;</p> <p>B. List two major fields of study that contribute to fire dynamics</p> <p>C. Define ignition</p> <p>D. Describe the process of air entrainment in a fire plume</p> <p>E. Identify the criteria for determining flashover</p> <p>F. Define thermal inertia</p> <p>G. List three laws of conservation that are essential to fire dynamics</p> <p>H. List five general areas of research in fire dynamics</p> <p>I. List two applications of fire dynamics</p>	11
<p>III. Fire Safety Properties and Flammability Tests</p> <p>A. Distinguish between intrinsic and extrinsic properties of materials</p> <p>B. Define ignitability</p> <p>C. Identify three factors that influence ignitability</p> <p>D. List two test methods used to determine ignitability</p> <p>E. Define what is meant by a material's flame spread</p> <p>F. List two test methods used to determine flame spread</p> <p>G. Describe the use of the oxygen consumption principle in testing for the rate of heat release of a material</p> <p>H. List three reasons for performing full-scale room fire tests</p>	11
<p>IV. Fire Test Standards and Codes</p> <p>A. Define fire test standard</p> <p>B. List three uses of fire tests</p> <p>C. Compare the standards development processes of ASTM and NFPA</p> <p>Outline the ASTM ISR (Institute for Standards Research) fire test program</p>	12



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: <u>3</u>
COURSE PREFIX AND NUMBER: FES 4174		
COURSE TITLE: <u>Applications of Fire Research</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 type="checkbox"/> Speaking	<input checked="" type="checkbox"/> Critical Analysis
<input checked="" type="checkbox"/> Writing	<input checked="" type="checkbox"/> Listening	<input checked="" 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	compare the research methodologies of scientific method and systems analysis	exam
• 2	list three laws of conservation that are essential to fire dynamics	exam
• 3	define fire test standard	exam
• 4	Define the term "consensus standard"	exam
• 5	define the term fire model	exam
• 6	describe three types of research on smoke and control	exam
• 7	define what is meant by very early warning fire detection	exam
• 8	list three objectives of research on foam-water sprinklers	practical hands on application
• 9	identify the two steps in calculating toxic potency	practical hands on application
• 9	list the principal causes of firefighter injuries and fatalities	exam

<i>Section 6</i>
Name of Person Completing This Form: <u>Richard Nelson</u>
Date: <u>8-23-05</u>