

FLORIDA STATE COLLEGE AT JACKSONVILLE

COLLEGE CREDIT COURSE OUTLINE

COURSE NUMBER: FFP 2610

COURSE TITLE: Fire Behavior and Combustion

PREREQUISITE(S): None

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 explores the theories and fundamentals of how and why fires start, and how they are controlled.

SUGGESTED TEXT(S): Principles of Fire Behavior; James Quintiere, Delmar

IMPLEMENTATION DATE: Fall Term, 2005 (20061)

REVIEW OR MODIFICATION DATE: Fall Term, 2008 (20091) - Outline Review 2007

COURSE TOPICS		CONTACT HOURS <u>PER TOPIC</u>
I.	Introduction	4
II.	Units of Measurements	4
III.	Chemical reactions	5
IV.	Fire and the physical world	4
V.	Heat and its Effects	4
VI.	Properties of Solids Materials	4
VII.	Common Flammable Liquids and Gases	4
VIII.	Fire Behavior	4
IX.	Fire Extinguishment	4
X.	Extinguishment agents	4
XI.	Hazards by Classification Types	4
	Total	45

PROGRAM TITLE: Fire Science Technology
 COURSE TITLE: Fire Behavior and Combustion
 CIP NUMBER: 0743.020100

LIST PERFORMANCE STANDARD ADDRESSED:

NUMBER(S): TITLES(S):

03.0 DEMONSTRATE KNOWLEDGE OF FIRE BEHAVIOR--The student will be able to:

- 03.01 Define the terms fire, flashover, and flameover.
- 03.02 Define the fire triangle and tetrahedron.
- 03.03 Identify two chemical, mechanical, and electrical energy heat sources.
- 03.04 Define the following potential stages of fire: (a)incipient; (b) flame spread; (c) hot smoldering; (d) flashover; (e) steady state; (f) clear burning.
- 03.05 Define the three methods of heat transfer.
- 03.06 Define the three physical stages of matter in which fuels are commonly found.
- 03.07 Define the hazard of finely divided fuels as they relate to the combustion process.
- 03.08 Define the terms flash point, fire point, and ignition temperature.
- 03.09 Define concentrations of oxygen in air as it affects combustion.
- 03.10 Identify three products of combustion commonly found in structural fires that create a life hazard.
- 03.11 Define the following units of heat measurement: (a)British Thermal Unit (BTU); (b) Fahrenheit (°F); (c)Celsius (°C); (d) Calorie (Cal); (e) Kilowatt (kw); (f)British Thermal Units/second (BTU/s); (g) Watt (w); (h)Megawatt (mw); (i) Joule (j).
- 03.12 Define the terms thermal balance and imbalance.

04.0 DEMONSTRATE KNOWLEDGE OF FIRE APPARATUS--The student will be able to:

- 04.01 Identify the function of a fire company.
- 04.02 Describe the functions of the following units: (a) pumper company; (b) aerial company; (c) rural company; (d) a crash fire rescue unit; (e) elevated platform.
- 04.03 Describe crash-fire-rescue and its uses.
- 04.04 Identify special equipment used in the following apparatus:
(a) rescue; (b) chemical; (c) floodlight and power; (d) air truck.
- 04.05 Identify formulas necessary for fire ground calculations for fire flow and water supply needed.
- 04.06 Identify, describe, operate, have the knowledge of the care and maintenance of the various types of firefighting apparatus in use and fire service.

05.0 DEMONSTRATE KNOWLEDGE OF THE STRATEGIES OF FIRE CONTROL --The student will be able to:

- 05.01 Define the firefighting strategy necessary for fire control in structures.
- 05.02 Define the firefighting strategy necessary for fire control in flammable liquids.
- 05.03 Define the firefighting strategy necessary for fire control in liquefied petroleum or natural gas.
- 05.04 Define the firefighting strategy necessary for fire control in vehicles.

LIST PERFORMANCE STANDARD ADDRESSED: (continued)

NUMBER(S): TITLES(S):

06.0 USE PORTABLE AND FIXED FIRE EXTINGUISHERS --The student will be able to:

- 06.01 Identify the classification of types of fire as they relate to the use of portable extinguishers.
- 06.02 Given a group of differing extinguishers, identify the appropriate extinguishers for the various classes of fire.
- 06.03 Define the portable extinguisher rating system.
- 06.04 Identify the types of portable fire extinguishers.
- 06.05 Demonstrate the use of portable fire extinguishers for each class of fire.
- 06.06 Describe three safety checks to perform on portable extinguishers (to include charge, hose, and nozzle inspection).
- 06.07 Identify how to evaluate the operational readiness of portable fire extinguishers.
- 06.08 Identify the capability of extinguishing agents and the proper method of agent application.
- 06.09 Identify code requirements and regulations relative to the distribution and location of portable fire extinguishers.
- 06.10 Identify portable fire extinguisher maintenance requirements and procedures.
- 06.11 Identify fixed fire extinguishing systems.
- 06.12 Identify how to evaluate the operational readiness of fixed fire extinguishing systems.
- 06.13 Identify the capabilities of the extinguishing agent and the proper procedures for agent application in a fixed fire extinguishing system.



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>	
COURSE PREFIX AND NUMBER: <u>FFP 2610</u>	SEMESTER CREDIT HOURS: <u>3</u>
COURSE TITLE: <u>Fire Behavior and Combustion</u>	

Section 2

TYPE OF COURSE: (Click on the box to check all that apply)

<input type="checkbox"/> AA Elective	<input checked="" 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 type="checkbox"/> Other _____		
<input type="checkbox"/> General Education: (For General Education courses, you must also complete Section 3 and Section 7)		

Section 3 (If applicable)

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	

Section 4

INTELLECTUAL COMPETENCIES:

<input checked="" type="checkbox"/> Reading	<input checked="" type="checkbox"/> Speaking	<input type="checkbox"/> Critical Analysis	<input checked="" type="checkbox"/> Quantitative Skills	<input checked="" type="checkbox"/> Scientific Method of Inquiry
<input checked="" type="checkbox"/> Writing	<input checked="" type="checkbox"/> Listening	<input type="checkbox"/> Information Literacy	<input type="checkbox"/> Ethical Judgment	<input type="checkbox"/> Working Collaboratively

<i>Section 5</i>		
LEARNING OUTCOMES		METHOD OF ASSESSMENT
•	Identify physical properties of the three states of matter	exam and oral presentation
•	Recall the physical and chemical properties of fire	exam
•	demonstrate knowledge of the characteristics of water as a fire suppression agent	exam
•	compare other methods and techniques of fire extinguishments	exam
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Section 6

Name of Person Completing This Form: Richard A Nelson, Dean Workforce Date: 5-20-05