

FLORIDA STATE COLLEGE AT JACKSONVILLE

COLLEGE CREDIT COURSE OUTLINE

COURSE NUMBER: FFP 2301

COURSE TITLE: Fire Service Hydraulics

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 provides a foundation of theoretical knowledge in order to understand the principles of the use of water in fire protection and apply hydraulic principles to analyze and to solve water supply problems.

SUGGESTED TEXT(S): Introduction to Fire Pumps; Thomas Sturtevant, Delmar
Hydraulics for Firefighting; William Crapo, Delmar

IMPLEMENTATION DATE: Fall Term, 2005 (20061)

REVIEW OR MODIFICATION DATE:

COURSE TOPICS	CONTACT HOURS <u>PER TOPIC</u>
I. Water as an extinguishing agent	5
II. Math Review	5
III. Water at Rest	6
IV. Water in motion	6
V. Water distribution systems	6
VI. Fire Pumps	6
VII. Fire Streams	4
VIII. Friction loss	4
IX. Engine pressures	4
X. Standpipe and sprinkler systems	3
Total	45

PROGRAM TITLE: Fire Science Technology
 COURSE TITLE: Fire Service Hydraulics
 CIP NUMBER: 0743.020100

LIST PERFORMANCE STANDARD ADDRESSED:

NUMBER(S): TITLES(S):

27.0 DEMONSTRATE KNOWLEDGE OF STANDPIPE AND HOSE SYSTEMS AND WATER SUPPLY SYSTEMS--

The student will be able to:

- 27.01 Identify the types of standpipes and hose systems. (See NFPA 14, Standard for the Installation of Standpipe and Hose Systems).
- 27.02 Identify standpipe and hose systems and their appurtenances.
- 27.03 Identify how to evaluate the operational readiness of a standpipe and hose system.
- 27.04 Identify standpipe and hose system equipment use and capabilities.
- 27.05 Identify the types of water distribution systems and other water sources in the local community.
- 27.06 Identify characteristics of private water supply systems.
- 27.07 Identify and explain the four fundamental components of a modern water system.
- 27.08 Identify the following parts of a water distribution system: (a) distributors, (b) primary feeders, (c) secondary feeders.
- 27.09 Identify a: (a) dry barrel hydrant, (b) wet barrel hydrant.
- 27.10 Define the following terms: (a) normal operation pressure of a water distribution system, (b) residual pressure of a water distribution system, (c) flow pressure.
- 27.11 Identify the following types of water main valves: (a) indicating, (b) non-indicating, (c) post indicator, (d) outside screw and yoke.
- 27.12 Identify hydrant usability by: (a) obstructions to use of hydrant, (b) direction of hydrant outlets to suitability of use, (c) mechanical aboveground damage, (d) condition of paint for rust or corrosion, (e) the flow by fully opening the hydrant, (f) ability to drain.
- 27.13 Identify how to evaluate the operational readiness of a water supply system.
- 27.14 Given a pilot tube and gage, use, read, and record several flow pressures.
- 27.15 Given a chart, sizes of openings, and flow pressures, determine the quantity of water flowing from the openings.
- 27.16 Given a chart, identify the approximate discharge capacities of various water pipe sizes.
- 27.17 Identify the pipe sizes used in water distributions systems for residential, business, and industrial districts.
- 27.18 Identify two causes of increased resistance or friction loss in water mains.



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

Section 1	
COURSE PREFIX AND NUMBER: FFP 2301	SEMESTER CREDIT HOURS: 3
COURSE TITLE: Fire Service Hydraulics	

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 checked="" type="checkbox"/> Working Collaboratively	

Section 5		
LEARNING OUTCOMES		METHOD OF ASSESSMENT
•	Apply the application of mathematics and physics to the movement of water in fire suppression activities	Oral Presentation, Exam, and Demonstration
•	Comprehend the design principles of fire service pumping apparatus	Exam and Demonstration
•	Analyze community fire flow demand criteria	Exam and Oral Presentation
•	Identify the types of standpipes and hose systems	Exam
•	Identify how to evaluate the operational readiness of a standpipe and hose system	Exam
•	Identify: A dry barrel hydrant and a wet barrel hydrant	Exam
•	Demonstrate the proper usage of a pitot gage	Demonstrate and Exam
•	Demonstrate the basic equipment needed for a fire flow test	Exam and Oral

Section 6	
Name of Person Completing This Form: <u>Dr. Debra Mertz</u>	Date: <u>10/9/2007</u>