

FIRE 56 Course Outline as of Fall 1999

CATALOG INFORMATION

Dept and Nbr: FIRE 56

Title: FIRE HYDRAULICS

Full Title: Fire Hydraulics

Last Reviewed: 12/12/2011

Units		Course Hours per Week		Nbr of Weeks	Course Hours Total	
Maximum	3.00	Lecture Scheduled	3.00	17.5	Lecture Scheduled	52.50
Minimum	3.00	Lab Scheduled	0	17.5	Lab Scheduled	0
		Contact DHR	0		Contact DHR	0
		Contact Total	3.00		Contact Total	52.50
		Non-contact DHR	0		Non-contact DHR	0

Total Out of Class Hours: 105.00

Total Student Learning Hours: 157.50

Title 5 Category: AA Degree Applicable

Grading: Grade Only

Repeatability: 00 - Two Repeats if Grade was D, F, NC, or NP

Also Listed As:

Formerly:

Catalog Description:
Review of applied mathematics; hydraulics laws as applied to the fire service; application of formulas and mental calculation to hydraulics and water supply problems.

Prerequisites/Corequisites:

Recommended Preparation:
Eligibility for ENGL 100 or ESL 100 and CSKLS 372 or equivalent or completion of Fire 71 (formerly FIRE 51).

Limits on Enrollment:

Schedule of Classes Information:
Description: Review of applied math; hydraulics laws, formulas & mental calculation to hydraulics & water supply problems. (Grade Only)
Prerequisites/Corequisites:
Recommended: Eligibility for ENGL 100 or ESL 100 and CSKLS 372 or equivalent or completion of Fire 71 (formerly FIRE 51).
Limits on Enrollment:

Transfer Credit: CSU;
Repeatability: Two Repeats if Grade was D, F, NC, or NP

ARTICULATION, MAJOR, and CERTIFICATION INFORMATION:

AS Degree:	Area			Effective:	Inactive:
CSU GE:	Transfer Area			Effective:	Inactive:
IGETC:	Transfer Area			Effective:	Inactive:
CSU Transfer:	Transferable	Effective:	Fall 1981	Inactive:	Fall 2018
UC Transfer:		Effective:		Inactive:	

CID:

Certificate/Major Applicable:
Certificate Applicable Course

COURSE CONTENT

Outcomes and Objectives:

COURSE GOALS: To enable the student:

1. To list and identify principles of hydraulics while pumping through various discharge devices and various hose configurations.
Demonstrate how to utilize the various kinds of water supplies.
3. Identify the various types and sizes of hose streams and their uses.
4. Demonstrate formulas using applied mathematics in elementary hydraulics.
5. Identify various pumping situations, while considering velocity and rate of flow, friction loss, and nozzle pressure.
6. Identify strengths and weaknesses in various water supplies and systems, and ISO grading.
7. Demonstrate the use of fire streams and their ranges.

Topics and Scope:

1. Applied Mathematics
 - a. Multiplication and division
 - b. Square root
 - c. Elementary algebra
2. Principles of Hydraulics
 - a. Velocity, rate of flow, and friction loss
 - b. Nozzle and engine pressures
 - c. Other hydraulics formulas
3. Water Sources
 - a. Static and organic
 - b. ISO specifications

4. Fire Streams
 - a. Fog and spray
 - b. Straight streams
5. Pumping
 - a. Various hose layouts
 - b. Sprinklers and standpipes

Assignment:

The student will:

1. Prepare, with a group, a written and oral analysis of an engine pressure requirement when pumping above or below the eye of the pump.
2. Prepare, describe, and identify the design and capabilities of a new purchase or current fire apparatus pumper.
3. Describe in writing current hydraulic technology from research of trade technical magazines and analyze the effects on the fire service.

Methods of Evaluation/Basis of Grade:

Writing: Assessment tools that demonstrate writing skills and/or require students to select, organize and explain ideas in writing.

Term papers	Writing 10 - 30%
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Problem Solving: Assessment tools, other than exams, that demonstrate competence in computational or non-computational problem solving skills.

Homework problems, Field work, Quizzes, Exams	Problem solving 10 - 20%
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Skill Demonstrations: All skill-based and physical demonstrations used for assessment purposes including skill performance exams.

Performance exams	Skill Demonstrations 10 - 20%
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Exams: All forms of formal testing, other than skill performance exams.

Completion	Exams 30 - 60%
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Other: Includes any assessment tools that do not logically fit into the above categories.

None	Other Category 0 - 0%
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Representative Textbooks and Materials:

Pumping Apparatus, 7th Edit., Publ. IFSTA

