

PALOMAR COLLEGE
COURSE OUTLINE OF RECORD FOR
DEGREE CREDIT COURSE

X Transfer course X A.A. degree applicable course
(check all that apply)

COURSE NUMBER AND TITLE: FIRE 105 Fire Hydraulics

UNIT VALUE: 3

MINIMUM NUMBER OF SEMESTER HOURS: 48

BASIC SKILLS REQUIREMENTS:

Appropriate language and computational skills.

ENTRANCE REQUIREMENTS

PREREQUISITE: None

COREQUISITE: None

RECOMMENDED PREPARATION: Mathematics 60 and Fire Technology 100

SCOPE OF COURSE:

Review of basic mathematics; hydraulic laws and formulas as applied to the fire service; application of formulas and mental calculation to hydraulic problems; water supply problems; underwriter's requirements for pumps.

SPECIFIC COURSE OBJECTIVES:

Students will be able to:

1. Apply the principles of hydraulics in effectively utilizing an available water supply.
2. Identify various sizes and combinations of hose, nozzles, sprinklers, and standpipe systems to provide an effective discharge of water for fire suppression.
3. Apply mathematics, hydraulic laws and formulas to determine a maximum supply of water.

CONTENT IN TERMS OF SPECIFIC BODY OF KNOWLEDGE:

- I. Principles of Applied Mathematics
- II. Elementary Principles of Hydraulics
- III. Velocity of Flow and Rate of Discharge
- IV. Explain Friction Loss and How to Calculate in Various Areas

- V. Explain Water Supplies and Services
- VI. Calculation of Engine and Nozzle Pressures
- VII. Fire Streams
- VIII. Discussion of Fire Ground Hydraulics and its Applications

REQUIRED READING:

International Fire Service Training Association. Fire Stream Practices. 7th edition. Stillwater, OK: Fire Protection Publications, 1989.

SUGGESTED READING:

International Fire Service Training Association. Fire Department Pumping Apparatus. 7th edition. Stillwater, OK: Fire Protection Publications, 1989.

REQUIRED WRITING:

A notebook will be required of each student, including all class handouts, lecture notes, and completed assignments, and will be evaluated on completeness and value to student as a future reference. Each student will also complete a class project, consisting of a schematic drawing of a fire pump and a discussion of pump operations. This discussion will require 2-3 pages of writing.

OUTSIDE ASSIGNMENTS:

Students are expected to spend a minimum of three hours per unit per week in class and on outside assignments, prorated for short term classes.

The student is expected to read the required and recommended texts and prepare for all examinations.

INSTRUCTIONAL METHODOLOGY:

Check all that apply:

- lecture
- laboratory
- lecture-laboratory combination
- directed study

This course may be offered as a distance education course and meets Title 5 regulations 55370, 55372, 55374, 55376, 55378, and 55380.

Yes No

If yes, check all that apply. (See guidelines for preparation for definitions.)

- telecourse
- mediated instruction
- computer assisted instruction

GRADING POLICY AND STANDARDS (include methods of determining whether the stated objectives have been met by students):

10% Class Project
20% Weekly Quizzes
30% Midtern Exam
40% Final Exam

IS COURSE REPEATABLE FOR REASON(S) OTHER THAN DEFICIENT GRADE?

Yes _____ No _____ Number of times course may be taken for credit: _____

If yes, identify specific provision of Title 5 Division 2 section(s) 55761-55763 and 58161 which qualifies course as repeatable:

CONTACT PERSON: Dr. Larry Roberts, X2204