

METROPOLITAN STATE COLLEGE of DENVER
Office of Academic Affairs

REGULAR COURSE SYLLABUS

School of: Professional Studies

Department: Engineering Technology

CIP Code: 15.0201

Prefix & Course Number: CET 3190 Crosslisted With*: _____

Course Title: Fluid Mechanics II for Civil Engineering Technology

Check All That Apply: Required for Major: Required for Minor: Specified Elective:
Required for Concentration: Elective: Service Course:

Credit Hours: 3 (3+0)

Total Contact Hours per semester (assuming 15-16 week semester):

Lecture 45 Lab 0 Internship 0 Practicum 0 Other (please specify type and hours): _____

Schedule Type(s): L Grading Mode(s): L

Variable Topics Courses (list restrictions, including the maximum number of hours that can be earned**):

**** NOTE: This information must be included in the course description.**

Restrictions (Variable Topics Course): _____

Prerequisite(s): CET 3185 with a grade of "C" or better; or permission of instructor

Corequisite(s): None

Prerequisite(s) or Corequisite(s): _____

Banner Enforced:


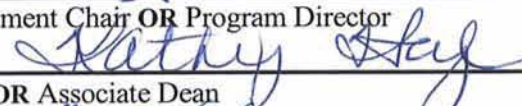
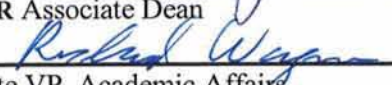
Prerequisite(s): _____

Corequisite(s): _____

Prerequisite(s) or Corequisite(s): _____

Catalog Course Description:

This course is a continuation of the fundamentals introduced in Fluid Mechanics I for Civil Engineering Technology, with emphasis on the analysis of forces on immersed bodies, steady flow in open channels, fluid measurements, and the problems associated with unsteady fluid flow.

APPROVED:		
<u>28.</u>		<u>3 Dec 08</u>
Department Chair OR Program Director		Date
		<u>4/8/08</u>
Dean OR Associate Dean		Date
		<u>5/19/08</u>
Associate VP, Academic Affairs		Date

*If crosslisted, attach completed Course Crosslisting Agreement Form

Prefix and Course Number: CET 3190

Required Reading and Other Materials will be equivalent to:

Finnemore. E. John, Franzini, Joseph B. (2002). *Fluid Mechanics With Engineering Applications*, 10th Edition. McGraw-Hill

Specific, Measurable Student Behavioral Learning Objectives:

Upon completion of this course the student should be able to:

1. Apply the principles of fluid mechanics to problems related to steady flow in open channels, fluid measurements and unsteady flow.
2. Analyze steady flow of compressible fluids.
3. Solve hydraulic machinery problems.

Detailed Outline of Course Content (Major Topics and Subtopics) or Outline of Field Experience/Internship (experience, responsibilities and supervision):

- | | |
|--|---|
| <p>I. Steady flow in open channels. Design problems in the following topics:</p> <ol style="list-style-type: none"> A. Uniform flow-the Chezy Equation and Manning Formula. B. Most efficient cross section. C. Specific energy and critical depth. D. Rectangular and nonrectangular channels. E. Humps and Contractions. F. The hydraulic jump. G. Flow around channel bends. H. Hydraulics of culverts. <p>II. Fluid Measurements</p> <ol style="list-style-type: none"> A. Measurements <ol style="list-style-type: none"> 1. Fluid properties. 2. Static pressure. 3. Fluid velocity with pitot tubes and other methods. | <p>B. Measurement of discharge</p> <ol style="list-style-type: none"> 1. Orifices nozzles, and tubes. 2. Thin-plate weirs. 3. Overflow spillway. 4. Sluice gate. 5. Other methods. <p>III. Unsteady-flow</p> <ol style="list-style-type: none"> A. Discharge with a varying head. B. Unsteady flow of incompressible fluids in pipes. C. Velocity of pressure waves in pipes. D. Water hammer. E. Surge tanks. <p>IV. Hydraulic Machinery</p> <ol style="list-style-type: none"> A. Turbines B. Pumps |
|--|---|

Evaluation of Student Performance:

1. Written examinations.
2. Homework assignments.