

CURRICULUM PROPOSAL FORM 2001-2002

NON-GENERAL EDUCATION PROCESS A

***DEADLINES:** Deadline dates for 2001/2002 submissions: Regular proposals: October 19, 2001 to be implemented in Fall 2002; Short-Term proposals: December 7, 2001 to be implemented in Fall, 2002; Regular proposals February 15, 2002 to be implemented in Spring, 2003; March 22, 2002 for short-term courses to be implemented in Spring 2003.

PROPOSAL TITLE: Principles of Hydraulic Design 2908-4775

SPONSOR(S): Joseph Orlins, x 5328

DEPARTMENT: Civil and Environmental Engineering

COLLEGE:

IF LAS CHECK ONE: History/Humanities Math/Sciences Social/Behavioral Sciences

Check one: Undergraduate Graduate

THE ATTACHED **NON-GEN-ED** PROPOSAL IS BEST DESCRIBED BY THE ITEM(S) CHECKED.

New non-gen-ed course

Short-term non-gen-ed course

Minor curricular changes (fewer than three) to:

- existing non-gen-ed course
- non-gen-ed degree requirements
- major
- minor, specialization, concentration, track, certificate program

DEPARTMENT
(Signature indicates approval)

Dept. Curriculum Chair / Date Joseph B. Orlins 10/19/01

Dept. Chairperson / Date JWC 10/19/01

ACADEMIC DEAN

Approved Not Approved Comments:

Dean's Signature/Date Steve Chew 11/2/01

COLLEGE CURRICULUM COMMITTEE

Date of open hearing (if necessary) 4/26/02 Approved X Not Approved _____

Comments:

Signature of College Chair/Date: [Signature]

UNIVERSITY CURRICULUM COMMITTEE

Date Received/Processed _____

Comments:

Curriculum Chair Signature [Signature] Date Announced At Senate 6/5/02

EXECUTIVE VICE PRESIDENT/PROVOST

Approved ✓ Not Approved _____ If no, reasons are as follows:

Student Credit Hours _____ Faculty Load Hours _____ Equalized Credit Hours _____

Official Copy & Approval Sheet Filed (Date): _____ Executive VP/Provost Signature/Date [Signature]
11/13/02

REGISTRAR

Date Approved Course Description Received _____ Hegis Taxonomy & Course Number Assigned C903-444

Registrar Signature/Date [Signature] 11/13/02

NOTIFICATION FORWARD

✓ Senate Curriculum Committee Chairperson ✓ Academic Dean(s) ✓ Registrar ✓ Sponsor(s)
Cap
Just. Keshi
in 11/22/02

Course Proposal – New Non-gen ed course.

1. Details:

- a) Course Title: **Principles of Hydraulic Design (0908-444)**
- b) Sponsor: Dr. Joseph J. Orlins, x 5328
Civil and Environmental Engineering
- c) Credit Hours: 3 credits
- d) Course Level: Senior
- e) Prerequisites: Water Resources Engineering (0908.342), or permission of instructor
- f) Implementation: The course will be offered in alternate years. The course will be implemented along with the other changes in the Civil and Environmental Engineering program.
- g) Curricular Effect: The proposed change, in conjunction with the addition of a new course, will offer undergraduate and graduate students in Civil and Environmental Engineering a greater variety in the courses they can take to complete their respective degrees.
- h) Resources: Existing resources are adequate.
- i) Library: No new purchases required.

2. Rationale:

- a) Need for change:

This proposal is essentially a name change of an existing course and a minor change in the course content. The existing course, "Advanced Water Resources Engineering for Seniors," (0908-443) is part of the undergraduate Civil and Environmental Engineering curriculum, and is offered every year. Currently, undergraduates who wish to pursue a Masters degree at Rowan in Civil Engineering must take the co-listed companion course, "Advanced Water Resources Engineering," (0908-543), and risk repetition of course content.

The revised course will cover in greater depth some aspects of the original course, and add selected new topics. The course will be offered in even years, and a new, complementary course will be created to be offered in odd-numbered years. To prevent confusion regarding registration and transcripts, the course number of the existing elective will be changed as well.

3. Essence of the Course

a) Objectives:

Upon completion of the course, students will be able to design and analyze the following hydraulic structures by laboratory and/or field experimentation, computer modeling, and hand calculation:

- Open channel flows
- Dams and spillways
- Sanitary and storm sewers
- Pumping stations
- Hydraulic modeling

b) Topical Outline:

The topical outline of the course may vary to some extent depending on the interests of the instructor and the students, and on advances in water resources engineering technology. The topics initially planned include the following:

- Open channel flows:
 - Optimizing hydraulic geometry
 - Culverts
 - Bank protection
 - Scour protection
- Dams and spillways
 - Types of dams
 - Spillway design
 - Hydraulic rating curves for spillways
 - Energy dissipation and stilling basin design
- Sanitary and storm sewers
 - Energy and hydraulic grade lines
 - Sizing of pipes and inlets
- Pumping stations
 - Design standards
 - Performance problems associated with flow patterns
 - Physical modeling
- Hydraulic modeling
 - Froude and Reynolds criterion similarity
 - Scaling limits
 - Practical aspects

c) Evaluation and Grading Procedure of Students:

Student grades will be based on individual and/or group examinations, individual homework, design projects, and lab reports.

d) Course Evaluation:

The proposed course will be assessed based on student evaluations and curriculum review by engineering faculty.

4. Results of Consultations:

The proposed course is the revised version of an existing course entitled "Advanced Water Resources Engineering for Seniors" which is part of the current Civil and Environmental Engineering Curriculum approved by the University Senate. Consultations were submitted with the original proposal as specified by the Curriculum Committee.

Catalog Description:

Principles of Hydraulic Design (0908.444)

Prerequisites: Water Resources Engineering (0908.342), or permission of instructor.

(Offered even-numbered years) The fundamental theme of the course is the design and analysis of structures for controlling and conveying water in both the built and natural environment. Topics covered vary from year to year based upon instructor and student interests. Past topics have included open channel flow design, dams and spillways, sanitary and storm sewers, culverts, pumping stations, turbomachinery, and hydraulic similitude and modeling.



Department of Mechanical Engineering

Professor Phillip Lewis
Chair, Rowan University Senate Curriculum Committee
University Senate Office
Campbell Library

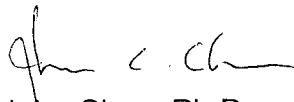
re: Curriculum Proposals for:

- Principles of Hydraulic Design SCC#01-02-403 ✓
- Hydraulic Design SCC#01-02-404
- Principles of Environmental Fluid Mechanics SCC#01-02-405
- Environmental Fluid Mechanics SCC#01-02-406

Dear Dr. Lewis:

The Mechanical Engineering program has reviewed the above-referenced course proposals, has no conflicts with the proposals, and supports their full implementation.

Sincerely,


John Chen, Ph.D.
Mechanical Engineering
Rowan University

CONSULTATIONS
FOR
SCC #01-02-403
SCC #01-02-404
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