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PROPOSAL SCC #01-02- 405

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 Environmental Fluid Mechanics 01-02-405

SPONSOR(S): Joseph Orlins

DEPARTMENT: Civil & Environmental Engineering

COLLEGE: Engineering

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 [Signature] 4/24/02

Dept. Chairperson / Date [Signature] [Date]

ACADEMIC DEAN

Approved Not Approved Comments: As increase in resource requirements.

Dean's Signature/Date [Signature] 4/24/02

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 [initials] 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 0105-445

Registrar Signature/Date [Signature]

NOTIFICATION FORWARD

Senate Curriculum Committee Chairperson
 Department Chairpersons

Academic Dean(s)
 Registrar

Cap
[Signature]
Trn 11/22/02
Sponsor(s)
[Signature]

Course Proposal:**1. Details:**

- a) Course Title: **Principles of Environmental Fluid Mechanics**
- b) Sponsor: Dr. Joseph J. Orlins, Civil Engineering, x5328
- c) Credit Hours: 3 credit hours
- d) Course Level: Undergraduate, senior-level (0908.445)
- e) Prerequisites: Water Resources Engineering (0908.342) or permission of instructor.
- f) Suggested Time: One section during spring semesters, offered alternate years, starting Spring semester, 2003
- g) Curricular Effect: Elective course for civil engineering undergraduate students
- h) Resources
- Faculty: Existing faculty can teach this course.
 - Library: Library acquisitions will be required.
 - Equipment: Existing laboratory facilities and equipment are adequate for this course.
 - Computers: Computer laboratory access will be required. Acquisition, training, and utilization of professional water resources engineering software will also be required.
- i) Library Resources: Library acquisitions will be required.

2. Rationale:

The proposed course is a new course, derived from an existing course entitled “Advanced Water Resources Engineering for Seniors” (0908-443) which is currently part of the undergraduate Engineering Curriculum. The existing course will be changed to “Principles of Hydraulic Design,” (0908-444), and offered in even-numbered years. This new course will cover in greater depth selected aspects of the existing course, and add new topics. This course will be offered in odd-numbered years.

By splitting the single, existing course that is offered every year into two distinct courses offered in alternate years, the variety of technical electives in Civil and Environmental Engineering is broadened.

3. Essence of the Course

a) Objectives:

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

- Advanced hydrology
- Advanced open channel flows
- Principles of sediment transport
- Mixing in rivers
- Contaminant Fate and Transport
- Water quality 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:

- Advanced hydrology:
 - Advanced frequency analysis
 - Advanced hydrographs
 - Storage routing
- Advanced open channel flows:
 - Steady and unsteady flow profiles
 - Effects of channel morphology
- Principles of sediment transport:
 - Bed load, suspended load, and wash load
 - Erosion and deposition
 - River meandering
- Mixing in rivers:
 - Mass transport relationship for natural systems
 - Mixing, dilution, dispersion, and turbulent diffusion
 - Contaminant fate and transport
- Water quality modeling:
 - Types of models available
 - Application of models
 - Input requirements
 - Analysis of results

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 derived from an existing course entitled “Advanced Water Resources Engineering for Seniors” (0908-443) which is part of the current Engineering Curriculum approved by the University Senate. Consultations were submitted with the original proposal as specified by the Curriculum Committee.

Catalog Description:

Principles of Environmental Fluid Mechanics (0908.445)

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

(Offered even-numbered years) The fundamental theme of the course is the engineering study of fluid flow in the environment. Advanced topics in water resources engineering are explored, with content varying based upon instructor and student interests. Past topics have included open channel flow, hydrology, fish passage at hydraulic structures, sediment transport, mixing in natural water bodies, and water quality modeling. The course includes appropriate laboratory and/or field experiments and computer applications.

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Department of Mechanical Engineering

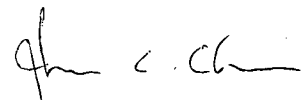
Professor Phillip Lewis
Chair, Rowan University Senate Curriculum Committee
University Senate Office
Campbell Library

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



500#01-02-405

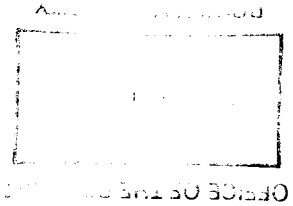
Biological Sciences

TO: Dr. Jeff Everett
Civil and Environmental Engineering

FROM: Dr. Patricia Mosto
Chair and Professor, Biology Department

RE: Changes to Civil and Environmental major

DATE: October 7, 2002



Jeff, thanks for the opportunity to review the changes you have proposed for the Civil and Environmental Engineering B.S. degree. I have carefully reviewed your proposal and I support your changes. This changes will not have any significant impact in the Biological Sciences program and we do not have any objection to them.

Cleary, Douglas B.

From: Everett, Jess W.
Sent: Wednesday, October 09, 2002 10:54 AM
To: Cleary, Douglas B.
Subject: FW: Consultations



TEXT.htm

Doug,

Will this do? If so I'll print the email and give it to you.

Jess

-----Original Message-----

From: Dahm, Kevin D.
Sent: Wednesday, October 09, 2002 10:50 AM
To: Everett, Jess W.
Subject: Re: Consultations

I am writing this letter in support of the several related curriculum proposals put forward last year by the Civil and Environmental Engineering department, refining their curriculum and consolidating the two parallel tracks into one. I will not attempt to comment on the proposals individually as I have already endorsed them as chair of the college curriculum committee. I am writing this letter simply to confirm that these changes were discussed at a chemical engineering department meeting and my department supports them unanimously. Chemical engineering students on occasion have interest in taking civil engineering courses as electives but these opportunities remain available with the proposed changes. The civil engineering students will be well served by these changes and we support their implementation.

Sincerely,
Kevin Dahm

Kevin Dahm
Assistant Professor of Chemical Engineering
Rowan University
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