

12

PROPOSAL SCC #01-02- 406

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: Environmental Fluid Mechanics 0908-505

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 D. Orlins 4/24/02

Dept. Chairperson / Date 4/24/02

ACADEMIC DEAN

Approved Not Approved Comments: No increase in resource requirements

Dean's Signature/Date W. Anne ... 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: *Kim O. Osh*

UNIVERSITY CURRICULUM COMMITTEE

Date Received/Processed _____

Comments:

Curriculum Chair Signature *Jametta Reeves* 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]*

REGISTRAR

Date Approved Course Description Received _____ Hegis Taxonomy & Course Number Assigned 105 575

Registrar Signature/Date *[Signature]*

NOTIFICATION FORWARD

✓ Senate Curriculum Committee Chairperson

✓ Department Chairpersons

✓ Academic Dean(s)

✓ Registrar

CAP
Grant Rich
In 11/22/02

____ Sponsor(s) *[Signature]*

406

Course Proposal:

1. Details:

- a) Course Title: **Environmental Fluid Mechanics**
- b) Sponsor: Dr. Joseph J. Orlins, Civil Engineering, x5328
- c) Credit Hours: 3 credit hours
- d) Course Level: Graduate, (0908.545)
- 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 graduate 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” (0908-543) which is currently part of the graduate Engineering Curriculum. The existing course will be changed to “Hydraulic Design,” (0908-544), and offered in even-numbered years. This new course will cover in greater depth selected aspects of the original 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

In addition, at the completion of the course, graduate students will be able to independently investigate additional areas related to the topic, conduct a seminar on their findings, and develop a design exercise of a quality suitable for use in an undergraduate course.

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, independent research, and presentations.

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” (0908-543) 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:

Environmental Fluid Mechanics (0908.545)

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.



Department of Mechanical Engineering

CONSULTATION
FOR

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

SCC #01-02-405

SCC #01-02-406

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 ✓

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

Cleary, Douglas B.

From: Orlins, Joseph J.
Sent: Wednesday, October 09, 2002 1:18 PM
To: Cleary, Douglas B.
Cc: Everett, Jess W.
Subject: FW: Letters of Consultation - Course Proposals

Doug -

I had forgotten that we had already obtained a consultation on Environmental Fluid Mechanics from Pat Mosto (see attached).

Do we need something more formal?

- JJO

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

From: Orlins, Joseph J. [mailto:orlins@rowan.edu]
Sent: Tuesday, October 30, 2001 4:55 PM
To: Mosto, Patricia
Cc: 'cleary@rowan.edu'; Chin, Steven; 'orlins@rowan.edu'; Dahm, Kevin D.
Subject: RE: Letters of Consultation - Course Proposals

Pat,

The email 'letter of consultation' should be fine. Thanks for you help!

- Joe

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

From: Mosto, Patricia
Sent: Tuesday, October 30, 2001 4:46 PM
To: Orlins, Joseph J.
Subject: Re: Letters of Consultation - Course Proposals

Joe, my department met today. Nobody saw any problem with your course proposals, and was unanimously voted for me to write you with our full support. If you need anything more than this e-mail, please just let me know.

Pat

>>> Orlins, Joseph J. - 10/23/01 2:23 PM >>>

Pat -

Attached are proposals for a new course that I'd like to offer in Civil & Environmental Engineering.

The course is called "Principles of Environmental Fluid Mechanics" at the undergraduate level, and "Environmental Fluid Mechanics" at the grad level.

I don't think there is overlap with other courses on campus outside of Engineering, but I'd like to make sure.

Could you take a look, and provide an "email of consultation" with your thoughts?

Thanks a bunch,

Joe Orlins

Dr. Patricia Mosto
Associate Professor
Biological Sciences
Rowan University
Glassboro, NJ 08028
(856) 256-4500 ex. 3590
mosto@rowan.edu

"a bird does not sing because it has an answer; it sings because it has
a
song"



SCC#01-02-466

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

A handwritten signature in dark ink, appearing to be "P. Mosto", located to the right of the "FROM:" line.

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
dahm@groupwise.rowan.edu
(856) 256-5318