

**ROWAN COLLEGE  
CURRICULUM COMMITTEE**

PROPOSAL TITLE: ENVIRONMENTAL TOXICOLOGY ✓

UNDERGRADUATE       GRADUATE       CREDIT HOURS

SPONSOR(S): DR. P. MORGAN & DR. A. POINTE

DEPARTMENT & TELEPHONE# Biological Sciences      \* 3570      \* 3522

CHECK ONE:  COURSE       MINOR PROGRAM       CONCENTRATION       SPECIALIZATION  
 ACHIEVEMENT CERTIFICATE       CERTIFICATION PROGRAM       MAJOR PROGRAM

<p align="center"><b>STEP #1 (DEPARTMENT)</b></p> <p><input checked="" type="checkbox"/> APPROVED/DATE:  <input type="checkbox"/> NOT APPROVED/DATE:  <u>J. Scott</u>  DEPT. CURRICULUM CHR.</p> <p>REVIEWED/DATE: <u>Spring '95</u></p> <p><u>R. Meagher</u>  DEPT. CHR.</p>	<p align="center"><b>STEP #2 (RECEIPT)</b></p> <p>SCC# <u>94-96-05</u>  <u>(95-96-05)</u></p> <p>DATE RECEIVED: <u>5/19/95</u></p> <p align="center">DEC 18 1995</p> <p><u>Ronald J. Pridgen</u>  SENATE CURRICULUM CHR.</p>	<p align="center"><b>STEP #3 (SCHOOL)</b></p> <p>REVIEWED DATE: <u>11/1/95</u></p> <p><input type="checkbox"/> RECOMMEND TO APPROVE  <input type="checkbox"/> RECOMMEND NOT TO APPROVE  <input type="checkbox"/> FORWARD FOR OPEN HEARING  <input checked="" type="checkbox"/> WITHOUT RESERVATIONS  <input type="checkbox"/> WITH RESERVATIONS</p> <p>COMMENTS:</p> <p><u>L. H. Hough</u>  SCHOOL COMMITTEE CHR.</p>
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**STEP #4 (ACADEMIC DEAN)**      COMMENTS: DEC 18 1995

RECOMMEND  
 NOT RECOMMEND  
 CONDITIONALLY RECOMMEND (SEE COMMENTS)

DATE & SIGNATURE, DEAN OF SCHOOL: 12/22/95 - Paul G. ...

**RECEIVED**

**STEP #5 (SENATE CURRICULUM COMMITTEE)**

DATE OF OPEN HEARING 1/31/96      untabled - 5-896

APPROVED BY SENATE CURRICULUM COMMITTEE (DATE) 5/8/96

RETURNED TO SPONSOR(S) FOR THE FOLLOWING REASONS:

\_\_\_\_\_

\_\_\_\_\_

**STEP #6 (SENATE)**

DATE PRESENTED TO SENATE 5-24-96       APPROVED       NOT APPROVED

NOTIFICATION TO EXECUTIVE VICE PRESIDENT/PROVOST (DATE) \_\_\_\_\_

SENATE CURRICULUM COMMITTEE CHAIR SIGNATURE/DATE \_\_\_\_\_

STEP #7 (EXECUTIVE VICE PRESIDENT/PROVOST)

DATE RECEIVED \_\_\_\_\_ 1996

APPROVED:  YES  NO

IF NO, REASONS ARE AS FOLLOWS:

STUDENT CREDIT HOURS \_\_\_\_\_

FACULTY LOAD HOURS \_\_\_\_\_

EQUALIZED CREDIT HOURS \_\_\_\_\_

OFFICIAL COPY & APPROVAL SHEET FILED (DATE) \_\_\_\_\_

SIGNATURE, EXECUTIVE VICE PRESIDENT/PROVOST [Signature]

REGISTRAR

DATE APPROVED COURSE DESCRIPTION RECEIVED 11 Jan 96

HEGIS TAXONOMY AND COURSE NUMBER ASSIGNED 0420.425

DATE/SIGNATURE OF REGISTRAR B. Kelsey 11 Jan 96

NOTIFICATION FORWARD:

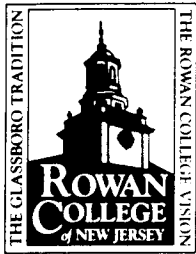
\_\_\_ SENATE CURRICULUM COMMITTEE CHAIRPERSON

\_\_\_ DEPARTMENT CHAIRPERSON(S)

\_\_\_ ACADEMIC DEAN(S)

\_\_\_ REGISTRAR

\_\_\_ SPONSOR(S)



# Rowan College of New Jersey

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*School of Liberal Arts and Sciences*

*Office of the Dean*

## **MEMORANDUM**

June 4, 1996

TO: Mary-Beth Krogh-Jespersen  
Vice-Provost

FROM: Bruce Paternoster   
Associate Dean

SUBJECT: Two new biology laboratory courses:  
Environmental Science  
Environmental Toxicology

The \$20/student fee common to all but one of the biological science courses should be attached to these courses. However, approval and implementation of these courses will not require an increase in the annual biology laboratory fee allocation, since they will be taught on a rotating basis with other courses as part of the bank of major electives.

copy: Dr. E. Moore

## NEW COURSE PROPOSAL

### 1. Details

- a. Course Title: Environmental Toxicology
- b. Sponsor: Department of Biological Sciences  
P. Mosto, Assistant Professor  
A. Prieto, Professor
- c. Credit Hours: 4 s.h. (2 lectures and 1 laboratory weekly)
- d. Course Level: Undergraduate; 400-level HEGIS number requested.
- e. Curricular Effect:  
The 4 s.h. credit will come from the 30 s.h. of upper level Biological Sciences electives, in particular for those students in the Ecology-Environmental Track. This course will not increase the number of required courses for the Major.
- f. Pre-requisites:  
Biology I and II (0401.100 and 0410.101); Chemistry I & II (1906.100 & 1906.101); Organic Chemistry I (1907.300) and Ecology (0420.310)); Junior or Senior class standing.
- g. Suggested Time and Scale of Implementation:  
Effective Fall 1996. The course will be offered once a year.
- h. Adequacy of Present Staff, Resources, Library Facilitates:  
Present faculty are adequate. The two faculty members sponsoring this course have ample expertise to teach it. The journal holdings of the Rowan College Library are only minimally adequate for a course such as we propose. Over time, we hope that additional materials can be purchased for the Rowan College Library. Students will be expected to visit other university libraries in the region, and faculty can provide their own personal library resources.
- i. Short-term Evaluation: N/A

### 2. Rationale:

The current trend in college education is to stress the environmentally-related fields. The Biological Sciences department is revising their Ecology and Environmental Track. In an effort to strengthen this Track and provide the students at Rowan College with new opportunities in the Environmental fields, this course is proposed.

3. Essence of the Course:

a. Objectives:

The Environmental Toxicology course will provide Biology majors pursuing the ecology-environmental track with an understanding of the fate and influence of pollutants in the environment. It will provide our majors with applied tools in environmental toxicology, preparing them with a background with which they may pursue technical positions in this area of work.

b. Topical Outline/Content:

Syllabus

- Introduction and History
- Laws and Regulations
  - CERLA/FIFRA/NEPA
  - Local/State/International
- Chemical Pollutants
  - Categories
  - Half Life
  - Metabolism
  - Environmental Paratitioning
- Transport and Distribution of Pollutants into the Environment
  - Air/Soil/Water
- Population Dynamics and Communities
- Effects on Individual Organisms
- Bioaccumulation
  - Routes of entry/storage/excretion
  - Species/age/sex/relationship between organisms
  - Resistance/Transfer
- Acute (lethal) Effects
- Chronic Effects
- Prediction of Ecological Effects
- Monitoring
  - Special examples: DDT, PCB, Hg, Pb,
  - Case Studies
- Environmental Assessment

Books Available

*Ecotoxicology: The Study of Pollutants in Ecosystems.* Moriarty, F. 1988. N.Y. Acad. Press. Inc.

*Environmental Toxicology.* Fawell, J. and Hunt S. 1988. Prentice Hall, N.Y.

*Introduction to Environmental Toxicology.* Guthrie, F. and Perry J. 1988. Elseview, New York.

*Chemistry and Ecotoxicology of Pollution.* Connell, D. and Miller, G. 1985. Wiley, N.Y.

- c. Evaluation and Grading Procedures of Students:  
Exams, laboratory reports, field work and paper presentations will be part of the grading system.
- d. Course Evaluation:  
The Biological Sciences department routinely reviews student evaluations, registration records, and the Department's courses to assess their success in meeting the goals and objectives of the College, the Program and the Department.
4. Results of Consultation:  
Since this is a course offered only to Biological Sciences majors, no outside consultation was done. No other Rowan College department offers a course with similar content.
5. Additional Information:                      None
6. Catalog Description:                         See Attached Page

## **CATALOG DESCRIPTION**

### **0420.4XXX**

#### **Environmental Toxicology**

(Prerequisites: 0401.100, 0401.101, 1906.100, 1906.101, 1907.300, 1907.301 and 0420.310 and Junior or Senior class standing.)

This course covers topics related to the fate and impact of pollutants in the environment. This course deals with the laws and regulations of pollutant discharge, the kinds of chemical pollutants, the transport and distribution of such chemicals into the environment, and their effect in population and communities as well as individual organisms. The acute and chronic effect of these pollutants, the principles of environmental monitoring and assessment, and special examples and case studies will be analyzed.

To: Curriculum Committee  
From: Robert Newland, Chairperson  
Subject: Environmental Toxicology  
Date: April 12, 1996



This Department supports this course. It is an excellent topic and should have been offered many years ago. The prerequisites are appropriate and will permit a variety of students to enroll.

MEMORANDUM

Rowan College of New Jersey

To: Andrew Prieto, Professor  
Biological Sciences



From: Ralph Alan Dusseau,  
School of Engineering

Ext: 4628

Date: February 12, 1996

Subject: Proposed Environmental Science Courses

I support your proposals for three new environmental science courses entitled "Environmental Toxicology," "Environmental Microbiology," and "Environmental Science." I believe these three courses will serve as appropriate electives for Chemical Engineering students and for students in the Environmental Engineering Option within the Civil Engineering Program.

The Biology and Chemistry prerequisites for the "Environmental Toxicology" course and "Environmental Microbiology" course both exceed the current science requirements for Civil Engineering majors which include only Biology I and Chemistry I. I believe, however, that Civil Engineering seniors who take the Environmental Engineering Option will have enough background from their required environmental engineering courses to qualify for both of these environmental science courses. If possible, you may want to add a clause such as "or permission of instructor" to the prerequisites for these two courses so that Civil Engineering seniors who take the Environmental Engineering Option could qualify for one or both courses.

I believe that all three courses would be both meaningful and worthwhile for Biology students and for Environmental Engineering students. Therefore, I strongly support these three courses.

Thank you very much.