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FEB CURRICULUM PROPOSAL FORM 1999-2000

NON-GENERAL EDUCATION PROCESS A

ROWAN UNIVERSITY SENATE

*DEADLINES: Deadline dates for 1999/2000 submissions: Regular proposals: October 22, 1999 to be implemented in Fall 2000; Short-Term proposals: December 10, 1999 to be implemented in Fall, 2000; Regular proposals February 18, 2000 to be implemented in Spring 2001; March 24, 2000 for short-term courses to be implemented in Spring 2001

PROPOSAL TITLE: Change of course requirement in Chemical Engineering
Biology I (Elective → Required course)

SPONSOR(S): STEWART SLATER, AND CHEMICAL ENGR FACULTY

DEPARTMENT: CHEMICAL ENGINEERING

COLLEGE: ENGINEERING

IF LAS CHECK ONE: History/Humanities Math/Science 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 *Raymond Ruch* 2/24/00

Dept. Chairperson/Date *[Signature]* 2/24/00

ACADEMIC DEAN

Approved Not Approved Comments:

Dean's Signature/Date *J. P. [Signature]* 2/24/00

Minor Change

1. Details:

- a) **Change:** Require Biology I (0401.100) for a Chemical Engineering major instead of having it as an elective

Current Curriculum

Chemical Engineering majors take either Biology I or Physics II as their basic science course in the Fall semester of the Sophomore year.

New Curriculum

Chemical Engineering majors will be required to take Biology I as their basic science course in the Fall semester of the Sophomore year.

- b) **Sponsor:** Dr. C. Stewart Slater and Chemical Engineering Curriculum Committee
- c) **Credit Hours:** 4 semester hours
- d) **Course Level:** Undergraduate
- e) **Curricular Effect:** Requirement for Chemical Engineering students
- g) **Suggested Time/**
Scale of Implementation: Fall 2000
- h) **Resources:**

2. Rationale:

The proposed change is consistent with the on-going assessment and review of the College of Engineering's programs of study. The Chemical Engineering program is making some minor curricular changes in response to information obtained from Student Assessment, ABET (accreditation) Self-Study activities, the American Society of Engineering Education and the American Institute of Chemical Engineers. Specific reasons for the requested change are listed below

- 1) The future direction of Chemical Engineering education is to provide more broad-based science education. The emerging multidisciplinary field of biotechnology encompasses many disciplines and chemical engineers are playing an active role. There is a desire from the AIChE/ABET accreditation to see a much broader basic science (and advanced science) experience to complement the chemical engineering topic courses.

Professional societies such as ASEE are recommending Biology as a science for certain engineering students such as chemical engineers.

2) We are responding to regional and national trends towards preparing chemical engineering students in the biotechnology area by providing a foundation basic science in Biology I. Our strategic campus location is in proximity to many of the world's leading pharmaceutical companies. We have already benefited from partnerships with Bristol-Myers Squibb and DuPont Pharmaceuticals.

3) Chemical engineering students find no use of Physics II. This basic science is more appropriate to electrical engineers. Civil and environmental engineering majors do not take Physics II.

4) Chemical engineering students currently enrolled in Biology I enjoy the course and those who are taking Physics II wish they had taken Biology I. Many said they would have taken Biology I if the Sophomore engineering scheduled accommodated it. Feedback from a recent student focus group was that the teachers and courses were great. Currently, 60% of our students have or are taking Biology I.

5) Scheduling difficulties make it almost impossible to give students the option of taking Physics II or Biology I. This has occurred for the past three years.

6) We have lost student recruitment and retention opportunities because our program doesn't have enough bio-oriented courses.

7) It is hoped in the future separate Biology I sections for chemical engineers or a Biology for Engineers or Applied Biology course might be offered to accommodate the type of instruction that would be more suited to engineering or technology majors. The chemical engineering and biology departments will hopefully have some discussions about this in the future. Future collaboration on research and education projects is also something that our department endorses.

We desire to have this change in place for our Sophomore class of Fall 2000, so that we may document to our ABET Accreditation reviewers that we are responding to a curricular need.

3. Results of Consultations:

The Chair of the Biology Department, Dr. Andy Prieto, and the Curriculum/Scheduling Coordinator, Dr. Pat Mosto, have been consulted and support this change.



Biological Sciences

TO: Martin Itzkowitz, Chair, Curriculum Committee

FROM: Dr. Andy Prieto, Chairperson, Biological Sciences
Dr. Pat Mosto, Assistant Chair, Biological Sciences

DATE: June 5, 2001

RE: Support for the Chemical Engineering Curriculum Proposal

cc: Rosemary Weist, University Senate
Kevin Dahm, Chemical Engineering

A handwritten signature in black ink, appearing to be "Andy Prieto", written over the "FROM" line of the email header.

The Department of Biological Sciences supports the approval of the proposal SCC99-00-425 requiring Chemical Engineering students to take Biology I.

