

ROWAN UNIVERSITY CURRICULUM PROPOSAL

PROPOSAL TITLE: 11 0-16

CHECK APPROPRIATE: UNDERGRADUATE GRADUATE SEMESTER HOURS

SPONSOR(S):

DEPARTMENT/TELEPHONE #

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

<p>Step #1 (Department)</p> <p><input checked="" type="checkbox"/> Approved (Date) <u>2/12/98</u></p> <p><input type="checkbox"/> Not Approved (Date)</p> <p><u>E. J. Moore</u> Dept. Curriculum Chr.</p> <p><u>2/12/98</u> Reviewed (Date)</p> <p><u>E. J. Moore</u> Dept. Chr.</p>	<p>Step #2 (Receipt)</p> <p>SCC# <u>97-98-238</u></p> <p><u>2-17-98</u> Date Received Senate</p> <p>_____ Senate Curriculum Chr.</p>	<p>Step #3 (School)</p> <p>Reviewed Date: <u>3/16/98</u></p> <p><input checked="" type="checkbox"/> Recommend to Approved</p> <p><input type="checkbox"/> Recommend NOT to Approve</p> <p>Forward for Open Hearing:</p> <p><input checked="" type="checkbox"/> WITHOUT Reservations</p> <p><input type="checkbox"/> WITH Reservations:</p> <p>Comments:</p> <p><u>K. P. King Sr.</u> School Committee Chr.</p>
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Step #4 (Academic Dean): Recommended NOT Recommended Conditionally Recommended (See Comments)

Comments:

Dean Signature/Date [Signature] 4/6/98

Step #5 (Senate Curriculum Committee): Open Hearing Date 4-17-98 Approved by Curriculum Committee Date 4-17-98

Returned to Sponsor(s) for the following reason:

Step #6 (Senate) Date announced/voted on at Senate 4-28-98 If voted on: Approved NOT Approved

Date forwarded to Executive Vice President/Provost _____

Senate Curriculum Committee chair Signature/Date [Signature] 4/28/98

Step #7 (Executive Vice President/Provost): Date Received _____

___ Approved

___ NOT Approved If no, reasons are as follows:

Student Credit Hours _____

Faculty Load Hours _____

Equalized Credit Hours _____

Official Copy & Approval Sheet Filed (Date) 5/18/99

Executive Vice President/Provost Signature 

Registrar

Date Approved Course Description Received _____

Hegis Taxonomy and Course Number Assigned _____

Date/Signature of Registrar  5/21/98

Notification Forward:

_____ Senate Curriculum Committee Chairperson

_____ Department Chairpersons

_____ Academic Dean(s)

_____ Registrar

_____ Sponsor(s)

REVISED
3/17/98

Rowan College of New Jersey
Department of Biological Sciences

**New Course Proposal:
Biology Lab/Field Research**

1. DETAILS:

1a. Course Title: Biology Lab/Field Research

1b. Sponsors: Department of Biological Sciences
Gregory Hecht, Assistant Professor
Patricia Mosto, Assistant Professor

1c. Credit Hours: 3 s.h.

1d. Course Level: Sophomore, Junior, Senior; 400-level HEGIS number requested.

1e. Curricular Effect: A subset of students who enroll in 0401.450 "Independent Study in Biological Science" as a biology elective will instead enroll in Biology Lab/Field Research (see "Rationale" below). This course will allow the department to accommodate a greater number of students who wish to carry out and receive academic credit for biology research (see "Rationale" below).

1f. Prerequisites: Requires Faculty approval

1g. Suggested Time and Scale of Implementation: Effective Spring 1999 (offered with Faculty approval)

1h. Adequacy of Present Staff, Resources, Library Facilities: The creation of this course primarily provides a more descriptive title for students who are currently enrolled in Independent Study so that they may conduct research with faculty in our Department. Thus, no additional resources are required for this course. Present staffing is adequate, and field and laboratory equipment already exist within the Department of Biological Sciences. However, it should be emphasized that library holdings in regard to biological sciences journals are not comparable to those of other undergraduate institutions. Acquisition of additional journals would enhance student research experiences. As research is required of all faculty, library resources in this area should be acquired.

1i. Short-term Evaluation: All of the Biological Sciences courses are routinely evaluated by the Departmental Curriculum Committee and considered by the entire Department.

2. RATIONALE:

Development of analytical skills essential in a research environment is a priority for biology majors. The best way for a student to accomplish this is to participate in faculty/student collaborative research projects. Also, an increasing number of employers and post-graduate education admission committees are placing greater emphasis on student laboratory experiences outside of the traditional course offerings and curriculum.

Recently, several faculty in our department have begun to develop vigorous research activities which include the participation of our majors. However, we presently give credit for this activity as course 0401.450 with the very non-descriptive title of "Independent Study in Biological Sciences." The Independent Study course may entail any number of different types of activity, and does not necessarily mean that a student has spent any time engaged in laboratory or field research during the course. Indeed, the term "research" does not even appear in the course description for "Independent Study." Frequently "Independent Study" has been used to allow students to explore topics that are not covered in the syllabi

- The students will take their first steps toward becoming researchers who understand the techniques used in the various specializations of the biological sciences.
- Students will begin developing oral and written communication skills appropriate for technical presentations; these skills will be used during an annual Rowan University Math, Science, and Technology Symposium showcasing undergraduate research.

3b. Topical Outline/Content:

Depending upon the faculty mentor, the students will be required to perform meaningful research in the area of specialization of the mentor. The defining criterion for each project is that it must obviously hold significant potential to lead to new knowledge in the area of the biological sciences or the development of novel experimental techniques which can be used to probe new questions in the biological sciences. The criterion given here is deliberately broad because it must accommodate the wide array of disciplines represented by the faculty of the Department.

Key components which will be common to all projects include:

- maintenance of a reference folder, *i.e.*, an organized collection of literature pertinent to the student's area of investigation;
- maintenance of a research notebook describing activities; and
- a final communication regarding the outcome of the research. This communication is expected to take the form of a poster presentation at an annual Rowan Math, Science, and Technology Symposium for undergraduate research. Additional types of communications may also result from participation in the course:
 - (1) a written report describing the work and the overall progress at the end of the semester;
 - (2) an oral report in the form of a poster presentation at a scientific meeting; and/or
 - (3) a formal oral presentation in the form of a talk given at a scientific meeting.

3c. Procedure for the Evaluation and Grading of Students:

Students will be responsible for learning various laboratory and/or field techniques required for their particular research activity. A student's grade will be derived from the following:

- the understanding of his/her own experimental data;
- clarity and organization of his/her research notes;
- ability to describe his/her results and conclusions; and
- the amount of time he/she invests in the project over the course of the entire semester
- quality of the final communication at the end of the semester (Rowan Math, Science, and Technology Symposium poster presentation; may also include written and/or oral report at the discretion of the mentoring faculty; see Section 3b above).

Successful research within the disciplines of the biological sciences requires review of experimental approaches and execution on continual basis. Therefore, faculty will be expected to communicate with the students on an ongoing basis for the purpose of reviewing the progress of their project.

3d. Course Evaluation:

The Biological Sciences Department as a whole routinely reviews the Department's courses to assess the courses' success in meeting the goals and objectives of the Department, the College, and the University. Because of the nature of the activity associated with this course, it is also assumed that the faculty member(s) and the students will engage in continual and informal feedback throughout the semester.

Catalog Description

0401.4XX 3 s.h.

Biology Lab/Field Research

(Prerequisites: Faculty approval)

This course introduces and/or develops research techniques used in biological research. Research is performed in collaboration with one or more faculty in an area of specialization of the faculty. Emphasis will be placed on developing research skills, developing technical writing skills, and the development of skills needed for scientific presentations. Up to three credits from this course may be counted towards the major; additional credits may count as free electives.