

# Approval Form

Proposal Title: Minor in Biological Sciences

Sponsor(s) J. Scott, Ph.D. Dept.: Biological Sciences Ext. 3571

Check one:  Course  Specialization  Concentration  Minor  Achievement Certificate  
 Certification Program  Major Program  Minor Change (Please name deletion or credit/title/catalog change)

Undergraduate  Graduate 23-24 Credit Hours

<p><b>Step 1 (Department)</b></p> <p><input checked="" type="checkbox"/> Approved <u>9/20/94</u> Date</p> <p><input type="checkbox"/> Not Approved</p> <p><u>J. Scott</u> Dept. CC Chairperson</p> <p><input checked="" type="checkbox"/> Reviewed <u>10/11/94</u> Date</p> <p><u>E. J. Mc...</u> Dept. Chairperson (Vice chair)</p>	<p><b>Step 2 (Receipt)</b></p> <p><input checked="" type="checkbox"/> SCC# <u>94-95-19</u></p> <p>Proposal Received <u>10/14/94</u> Date</p> <p>OCT 31 1994</p> <p><u>Ronald J. Galen</u> SCC Chairperson</p>	<p><b>Step 3 (School CC)</b></p> <p>Reviewed <u>11/15/94</u></p> <p><input checked="" type="checkbox"/> Approved <input type="checkbox"/> Not Approved</p> <p>Comments:</p> <p><u>Joanne Scott</u> School Curr Comm Chairperson</p>
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**Step 4 (Academic Dean)**

Recommend  
 Not Recommend  
 Conditionally Recommend (see comments)

Reviewed \_\_\_\_\_ Date \_\_\_\_\_

**Comments:**

**RECEIVED**  
 DEC 13 1994  
 SCHOOL OF ARTS AND SCIENCES  
 ROWAN COLLEGE OF NJ

Signature, Dean of School \_\_\_\_\_

**Step 5 (SCC)**

Open Hearing 2/2/95  Approved by Senate Curriculum Committee 2/2/95  
 Date Date

Returned to sponsor(s) for the following reasons:  
Editing

**Step 6 (Senate)**

Presented to Senate 3/29/95  Approved  Not Approved  
 Date

Notification to Executive Vice-President/Provost 3/29/95 Ronald J. Galen  
 Date Signature, SCC Chairperson

**Step 7 (Executive V.P./Provost)**

Received 4/5/95  
Date

Approved  Yes  No

If no, reasons are as follows:

Student credit hours 23-24

Faculty load hours \_\_\_\_\_

Equalized credit hours \_\_\_\_\_

Official copy and approval sheet filed \_\_\_\_\_  
Date

Ernest L. Cephaide  
Signature, Executive Vice-President/Provost

**Registrar**

ACAD. AFFAIRS / CAMPUS LIFE COMM  
4/5/95

Approved course description received 8 May 95  
Date

Hegis Taxonomy and Course Number assigned 11400

B. J. Kelley  
Signature, Registrar

8 May 95  
Date

**Notification forwarded:**

- Senate Curriculum Committee Chairperson
- Department Chairperson(s)
- Academic Dean(s)
- Registrar
- Sponsor(s)

**RESOLUTION #**

**APPROVAL OF MINOR IN BIOLOGICAL SCIENCES**

**WHEREAS**, the academic program - Minor in Biological Sciences - has been developed and approved by the Department of Biological Sciences, and

**WHEREAS**, there is demonstrated need for this program as evidenced by requests from current majors in other sciences and from all majors for a minor program that provides a scientific orientation in an increasingly technical world, and

**WHEREAS**, this program has been approved by the College Senate Curriculum Committee, the Dean of Liberal Arts and Sciences and the Executive Vice President/Provost, and

**WHEREAS**, this program has been reviewed by the Academic Affairs/Campus Life subcommittee of the Board of Trustees,

**THEREFORE BE IT RESOLVED** that the academic program Minor in Biological Sciences be approved for implementation in FY '96.

**SUMMARY STATEMENT**

This resolution approves the offering of the academic program - Minor in Biological Sciences - and authorizes the Department of Biological Sciences to begin advertising and offering this program to students in FY '96.

## MINOR IN BIOLOGICAL SCIENCES

1. **Abstract:** (attached; see page 6.)

2. **Details:**

a. **Title of the Proposal:** Minor in Biological Sciences

b. **Sponsor:** Joanne Scott, Ph.D., Undergraduate Academic Program  
Advisor, Biological Sciences

c. **Scope and Size of the Program:** We anticipate only a small number of students in the Minor, principally from Chemistry & Physics, and Psychology.

d. **Need for the Minor:**

Currently, the Chemistry Minor is elected by some of our Biological Sciences majors. The proposed Minor comes at the suggestion of several of the Chemistry faculty, who have identified a desire for such a Minor among their majors. We are hopeful, however, that a Biological Sciences Minor will be appealing to majors from other departments as well.

e. **Requirements for Admission and Graduation:**

The proposed Minor is modeled after the Chemistry Minor and will consist of 23-24 semester hours (a minimum of 8 of these must be taken at Rowan College):

Biology I and II (0401.100 and 0401.101)

1 course from the Botany\* "bank": Introductory Botany  
(0402.200) or Plant Kingdom (0402.201)

Genetics (0422.335)

Cell Biology (0401.430)

1 additional Biology course of the student's choice, 300-level or above

f. **Suggested Time and Scale of Implementation:**

This Minor could be implemented immediately upon Administrative approval. Some interested students may already have completed part of the course requirements.

g. and h. **Resource Requirements and Staffing:**

None additional needed. Counseling for the Minor will be incorporated into routine undergraduate course advisement. Increased enrollment in the upper-level Biological Sciences courses is not anticipated to be significant, considering the small number of students expected to elect the Minor.

### **3. Rationale:**

Currently, Minors in Chemistry, Computer Science, Economics, English, Law/Justice, French, Spanish, Art, Dance, Music, Theatre, Music, etc., are currently offered at Rowan College. The proposed Biological Sciences Minor is modeled after the Chemistry Minor. The Biological Sciences Minor provides a coherent sequence of Biology courses, focusing on "core courses" in the Department.

We wish to encourage students to take Biological Sciences courses. In our increasingly technological world, the majority of our population is, woefully, functionally "science-illiterate". We believe that an obvious background in any science will be a "plus" in the job markets of the future. The Minor offers an opportunity for students to take a carefully-selected series of Biological Sciences "core" courses, without the Chemistry, Physics, and Math requirements of the Biology Major. This should make the Program appealing to many students who are reluctant to be Biology majors because of the Math and Physical Sciences requirements.

### **4. Essence of the Minor:**

#### **a. Major Goals of the Minor:**

- 1) To provide for non-Biology majors a broad-based understanding of biology in an increasingly technical world.
- 2) To allow students to pursue a more in-depth investigation of biology than is required under the Gen Ed curriculum.
- 3) To provide the opportunity for students to change their major concentration. For example: The non-major may decide to become a Biological Sciences major; a major may decide to pursue another program, and pursue only a Biological Sciences minor.
- 4) To provide the Education major with insight into the investigative approach in an approved scientific field.

#### **b. Specific Objectives of the Program:**

- 1) To provide to all students a more marketable education.
- 2) To provide students with an understanding of the overall scope of Biology, and an appreciation of each of the areas of Biology considered "core" topics.

**c. Structure of the Minor:**

The proposed Minor is modeled after the Chemistry Minor and will consist of 23-24 semester hours (a minimum of 8 of these must be taken at Rowan College):

- 4 s.h. -- Biology I (0401.100)
- 4 s.h. -- Biology II (0401.101)
- 4 s.h. -- 1 course from the Botany\* "bank": Introductory Botany (0402.200) or Plant Kingdom (0402.201)
- 4 s.h. -- Genetics (0422.335)
- 4 s.h. -- Cell Biology (0401.430)
- 3 or 4 s.h. -- 1 Biology elective of the student's choice, 300-level or above\*\*

Biology I and II are the only prerequisites for the courses that follow them in the above list. After completion of Biology I and II, the other courses may be taken in any order. For course descriptions, see page 5.

In keeping with the policy of the Biological Science Major, any Biology grade below a C- will not count within the Minor.

**Relationship to Curriculum:**

For Chemistry/Physics majors, 4 s.h. of the Minor would be credited toward fulfilling their "Restricted Electives" requirement; the remainder would be credited as "Free Electives".

For Psychology majors, 4 s.h. of Bio I or Bio II are now required in their Program; the remaining Biology courses would be credited as "Free Electives".

For non-science majors, courses in the Biological Sciences Minor would be credited as fulfillment of their Gen Ed lab science requirement, and as "Free Electives".

**The extent courses from other units in the institution will be used:** None.

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\* A course in Botany is required for all Biology Majors.

\*\* Intro to Biochemistry, 0414.348, would fulfill this requirement; this has Organic Chemistry II (1907.301) as a prerequisite, however.

**d. Similar Programs:**

Currently, Minors in Chemistry, Computer Science, English, English, Law/Justice, French, Spanish, Art, Dance, Music, Theatre, etc., are currently offered at Rowan College. The proposed Biological Sciences Minor is modeled after the Chemistry Minor. The Biological Sciences Minor provides a coherent sequence of Biology courses, focusing on "core courses" in the Department.

**e. Administrative Organization:**

Minimal. Counseling for the Minor will be incorporated into routine undergraduate course advisement. Students wishing to work on a Biological Sciences Minor will need to talk to a Biological Sciences advisor and arrange for a copy of their student folder to be housed in the Biological Sciences Advisory Office. Prior to the student's application for graduation, the Biological Sciences Chairperson and the Biological Sciences Undergraduate Academic Advisor will check to see if all requirements for the Minor have been fulfilled.

**5. Results of Consultation:**

Letters of support from the Chemistry & Physics Department and the Psychology Department are attached.

**Descriptions of Biology Courses Required for the Minor:**

[Note that some of these are currently under revision.]

**Biology I** (0401.100; 4 s.h.) This laboratory course studies the chemical properties of protoplasm; cell structure and cell division; metabolic processes in organisms, including photosynthesis and respiration; principles of genetics including Mendelian laws; evolution and ecological relationships of organisms.

**Biology II** (0401.102; 4 s.h.) This laboratory course provides a brief survey of the different kinds of plants and animals; the roles of hormones and enzymes; tropisms; growth and development; plant and animal tissues and organ systems.

**Introductory Botany** (0402.200; 4 s.h.) This laboratory course studies the biology of plants. It includes a survey of vascular plant anatomy; the principles of plant physiology and metabolism; structural and functional aspects of plant anatomy with respect to support, transport, reproduction, development and growth.

**Plant Kingdom** (0402.201; 4 s.h.) This laboratory course considers the biology of nonflowering plants. A survey of the algae, fungi, mosses, liverworts, and primitive vascular plants is made.

**Genetics** (0422.335; 4 s.h.) This laboratory course covers Mendelian genetics, linkage, chromosome mapping, chromosomal and point mutation, multiple alleles, biochemical and population genetics.

**Cell Biology** (0401.430; 4 s.h.) This laboratory course deals with the structure and function of cellular parts including, but not limited to, membranes, mitochondria, Golgi bodies, plastids, and the nucleus.

**d. Similar Programs:**

Currently, Minors in Chemistry, Computer Science, English, English, Law/Justice, French, Spanish, Art, Dance, Music, Theatre, etc., are currently offered at Rowan College. The proposed Biological Sciences Minor is modeled after the Chemistry Minor. The Biological Sciences Minor provides a coherent sequence of Biology courses, focusing on "core courses" in the Department.

**e. Administrative Organization:**

Minimal. Counseling for the Minor will be incorporated into routine undergraduate course advisement. Students wishing to work on a Biological Sciences Minor will need to talk to a Biological Sciences advisor and arrange for a copy of their student folder to be housed in the Biological Sciences Advisory Office. Prior to the student's application for graduation, the Biological Sciences Chairperson and the Biological Sciences Undergraduate Academic Advisor will check to see if all requirements for the Minor have been fulfilled.

**5. Results of Consultation:**

A letter of support from the Psychology Department is attached. Support is also given by the Chemistry & Physics Department; that letter is forthcoming.

## MINOR IN BIOLOGICAL SCIENCES

Sponsor: Joanne Scott, Ph.D.  
Undergraduate Academic Program Advisor, Biological  
Sciences Department

A Minor in Biological Sciences is proposed, modeled after the Chemistry Minor. Some of the goals of the Biological Sciences Minor are 1) to provide for Liberal Arts students a broad-based understanding of biology in an increasingly technical world; 2) to provide the Education major with insight into the investigative approach in an approved scientific field; and 3) to allow students to pursue a more in-depth investigation of biology than is required under the Gen Ed curriculum. Specifically, the objective of the proposed Minor is to provide to all students a more marketable education.

The proposed Biological Sciences Minor will consist of 23-24 semester hours (a minimum of 8 of these must be taken at Rowan College): Biology I and II (0401.100 and 0401.101); 1 course from the Botany "bank" (0402.200 Introductory Botany or 0401.210 Plant Kingdom), Genetics (0422.335), Cell Biology (0401.430), and 1 additional Biology course of the student's choice, at the 300-level or above. After completion of Biology I and II, the other courses may be taken in any order. In keeping with the policy of the Biological Sciences Major, any Biology grade below a C- will not count within the Minor.

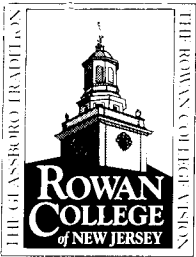
Only a small number of students are expected to elect this Minor, and the increased enrollment in the upper-level Biological Sciences courses is not anticipated to be significant. Counseling for the Minor will be incorporated into routine undergraduate course advisement.



To: Joanne Scott  
From: Robert Newland, Chairperson  
Subject: Minor in Biological Sciences  
Date: October 13, 1994

A handwritten signature or scribble in dark ink, located to the right of the header information. It is somewhat cursive and difficult to decipher.

I support the proposal for the Minor in Biological Sciences. The selection of required courses and the choices offered within the minor seem well suited to our majors.



## Rowan College of New Jersey

201 Mullica Hill Road  
Glassboro, New Jersey 08028-1701 • (609) 256-4870

*Psychology Department*

To: Joanne Scott, Undergraduate Academic Program Advisor,  
Biological Sciences Department

From: Eleanor Gaer, Chairperson, Psychology Department

Re: Minor in Biological Sciences

Date: October 4, 1994

I am writing in strong support of your proposal for a Minor in Biological Sciences. The Minor should be attractive to a number of our majors. Students who are interested in areas of psychology such as Comparative Psychology, Cognitive Neuroscience, Neuroscience, and Psychopharmacology should find it useful. It will be helpful for those students who wish to attend graduate programs in these areas. It will also give students more opportunities in the job market. I would suggest that Psychology majors might find it more useful to take another course in place of Botany, i.e. Invertebrate Zoology, Animal Ethology, etc. Once the Minor is in place, we will certainly recommend it to our majors.

Thank you for giving me the opportunity to review your proposal.