



# Program Approval Form

For approval of new programs and deletions or modifications to an existing program.

Registrar.

**Action Requested:**

Create New (SCHEV approval required except for concentration, minors, and certificates)  
 Delete Existing  
 Modify Existing (check all that apply)  
 Title (SCHEV approval required except for concentration, minors, certificates)  
 Degree Requirements  Admission Standards  
 Application Requirements  
 Other Changes: \_\_\_\_\_

**Type (Check one):**

B.A.  B.S.  Minor  
 Undergraduate Certificate  
 M.A.  M.S.  M.Ed.  
 Ph.D.  Graduate Certificate  
 Concentration  
 Other: \_\_\_\_\_

**College/School:**  **Department:**   
**Submitted by:**  **Ext:**  **Email:**

**Effective Term:** Fall  **Please note:** For students to start a new degree, minor, certificate or concentration, the program must be fully approved, entered into Banner, and published in the University Catalog.

**Justification:** (attach separate document if necessary)

**Program Title:** (Required)  
Use title to identify subject matter. Do not include name of college/school or department.

**Concentration Title(s):**

**Admissions Standards / Application Requirements:**  
(Required only if different from those listed in the University Catalog)

**Degree Requirements:**  
Consult University Catalog for models, attach separate document if necessary using track changes for modifications

**Courses offered via Distance:**  
(if applicable)

**TOTAL CREDITS REQUIRED:**

Existing	New/Modified
BS in Biology	BS in Biology
attached	attached

## Approval Signatures

Department \_\_\_\_\_ Date \_\_\_\_\_ College/School \_\_\_\_\_ Date \_\_\_\_\_ Provost's Office \_\_\_\_\_ Date \_\_\_\_\_  
*Required for Undergraduate Programs Only*

If this program may impact another unit or is in collaboration with another unit at Mason, the originating department must circulate this proposal for review by those units and obtain the necessary signatures prior to submission. Failure to do so will delay action on this proposal.

Unit Name	Unit Approval Name	Unit Approver's Signature	Date

### For Graduate Programs Only

Graduate Council Member \_\_\_\_\_ Provost Office \_\_\_\_\_ Graduate Council Approval Date \_\_\_\_\_

## **Justification**

The core biology curriculum has not been thoroughly revised since 1989. The intent of the new curriculum is to achieve the following goals: 1) Dispense with old fashioned organismal approaches in favor of an integrated approach to biology reflecting recent advances in our understanding of the evolution of life, the molecular basis of evolution, and advances in our understanding of genetics and cell biology; 2) Provide a core course that better integrates evolutionary biology with the ecological sciences; 3) Equip students with statistical tools early in their course work and apply these tools in subsequent core courses; 4) Provide small group work through recitation sections that will allow more writing and encourage more quantitative approaches in the core courses; 5) Provide a set of core courses that can be completed in four semester, thereby encouraging more upper division course opportunities; 6) Ensure adequate laboratory training by requiring one laboratory based course beyond the core; 7) Develop a new two semester laboratory based Anatomy and Physiology sequence for Biology and Medical Technology majors to meet the requirements of professional schools; and 8) Simplify the graduation requirements.

## Biology, BS

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### Banner Code: SC-BS-BIOL

Students must fulfill all [requirements for bachelor's degrees](#) including [university general education requirements](#). Students must complete their biology coursework and the supporting requirements with a minimum GPA of 2.00. In addition, biology majors must earn a minimum grade of C in all biology core courses listed below. No more than 8 credits of 100- and 200-level BIOL courses (103, 104, or 246) may be applied toward the required BIOL courses. Credit for BIOL 246 is limited to transfer students and only with permission of the Undergraduate Coordinator. A grade of C or better must be earned in BIOL 213 in order to advance to other major requirements. Students may repeat BIOL 213 once and a second time only with permission of the Director of the Biology Program. Once a student has taken BIOL 213 he/she is no longer eligible to receive biology elective credit for 100 level biology courses. Several optional concentrations are available (see below). Through the courses below, biology majors satisfy the university-wide requirements in natural science, quantitative reasoning, and information technology proficiency.

### Degree Requirements

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Students who do not select an optional concentration complete the curriculum requirements listed below.

#### 22 credits of biology core courses:

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- BIOL 213 - Cell Structure and Function Credits: 4
  - BIOL 214 - Introduction to Biostatistics Credits: 4
  - BIOL 311 - General Genetics Credits: 4
  - BIOL 308 - Foundations of Ecology and Evolution Credits: 5
  - BIOL 310 - Biodiversity Credits: 5
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#### 22 credits of biology electives:

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- 22 credits of additional biology courses of which at least 14 credits must be Upper Division and two of the Upper Division courses must include a laboratory.

#### 13 credits of chemistry:

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- [CHEM 211 - General Chemistry](#) Credits: 4
- [CHEM 212 - General Chemistry](#) Credits: 4
- [CHEM 313 - Organic Chemistry](#) Credits: 3
- [CHEM 315 - Organic Chemistry Lab I](#) Credits: 2

**One of the following options (3-8 credits):**

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Students are encouraged to consult with a biology faculty advisor to determine which option (A, B, or C) best meets their career goals.

Option A

- [CHEM 314 - Organic Chemistry](#) Credits: 3
- and
- [CHEM 318 - Organic Chemistry Lab II](#) Credits: 2

Option B

- One chemistry course at the 300 or 400 level (3) (not CHEM 314)

Option C

- [GEOL 101 - Introductory Geology I](#) Credits: 4
- and
- [GEOL 102 - Introductory Geology II](#) Credits: 4

**8 credits of physics:**

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- [PHYS 243 - College Physics](#) Credits: 3
  - [PHYS 244 - College Physics Lab](#) Credits: 1
  - [PHYS 245 - College Physics](#) Credits: 3
  - [PHYS 246 - College Physics Lab](#) Credits: 1

**3-4 credits of Mathematics chosen from:**

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- [MATH 111 - Linear Mathematical Modeling](#) Credits: 3
  - [MATH 113 - Analytic Geometry and Calculus I](#) Credits: 4
  - [MATH 114 - Analytic Geometry and Calculus II](#) Credits: 4
  - Equivalent of MATH 108 - Introductory Calculus with Business Applications Credits: 3, accepted for transfer students only

**3 credits of computer science chosen from one of the following:**

- CDS 130 - Computing for Scientists Credits: 3

- [IT 103 - Introduction to Computing](#) Credits: 3

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**Note:**

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Student expecting to enter graduate or professional school are strongly urged to complete MATH 113 and 114. Students who wish to take biochemistry must take BIOL 483 to receive credit toward the major in biology.

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