



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)

These changes reflect the new core requirements in the Biology BS degree

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
Biology BS	Biology BS
Concentration in Microbiology (MIB)	Concentration in Microbiology (MIB)
See attached	See 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 _____

▲ Concentration in Microbiology (MIB)

This concentration offers lecture and laboratory courses in microbiology to prepare students for employment or advanced study in microbial genetics, physiology, diversity, and related fields.

Students must fulfill all [requirements for bachelor's degrees](#) including [university general education requirements](#). In addition, students seeking the concentration in microbiology must complete the following. Through the course work below, they satisfy the university-wide general education requirements in natural science, quantitative reasoning, and information technology proficiency.

22 credits of biology core courses:

- 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

16 credits in microbiology:

- BIOL 305 - Biology of Microorganisms Credits: 3
- BIOL 306 - Biology of Microorganisms Lab Credit: 1
- BIOL 405 - Microbial Genetics Credits: 4
- BIOL 406 - Microbial Physiology and Metabolism Credits: 4
- BIOL 407 - Microbial Diversity Credits: 4

6 credits of biology electives chosen from:

- [BIOL 385 - Biotechnology and Genetic Engineering](#) Credits: 3
- [BIOL 402 - Applied and Industrial Microbiology](#) Credits: 3
- [BIOL 403 - Techniques in Applied and Industrial Microbiology](#) Credits: 1
- [BIOL 404 - Medical Microbiology](#) Credits: 3
- [BIOL 418 - Current Topics in Microbiology](#) Credits: 3
- BIOL 420 – Vaccines Credits: 3
- [BIOL 452 - Immunology](#) Credits: 3
- [BIOL 453 - Immunology Laboratory](#) Credits: 1
- [BIOL 459 - Fungi and Ecosystems](#) Credits: 3
- [BIOL 483 - General Biochemistry](#) Credits: 4

18 credits of chemistry:

- [CHEM 211 - General Chemistry](#) Credits: 4
- [CHEM 212 - General Chemistry](#) Credits: 4
- [CHEM 313 - Organic Chemistry](#) Credits: 3
- [CHEM 314 - Organic Chemistry](#) Credits: 3
- [CHEM 315 - Organic Chemistry Lab I](#) Credits: 2
- [CHEM 318 - Organic Chemistry Lab II](#) Credits: 2

8 credits of physics:

- [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:

- MATH 108 Introductory Calculus with Business Applications Credits: 3 (transfer students only)
- [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

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
-