

# Program Change Request

Date Submitted: 04/29/21 2:57 pm

Viewing: **SC-BS-BIOL : Biology, BS**

Last approved: 03/04/21 2:04 pm

Last edit: 04/29/21 2:57 pm

Changes proposed by: jbazaz

**Catalog Pages  
Using this Program**  
[Biology, BS](#)

Rationale for

**Are you completing this form on someone else's behalf?**

Yes

**Requestor:**

## In Workflow

1. **BIOL Program Chair**
2. **SC Curriculum Committee**
3. SC Associate Dean
4. SC CAT Editor
5. Assoc Provost- Undergraduate
6. Registrar-Programs: Duration
7. Registrar-Programs

## Approval Path

1. 04/29/21 3:44 pm  
Geraldine Grant  
(ggrant1): Approved  
for BIOL Program  
Chair

## History

1. Oct 23, 2017 by  
clmig-jwehrheim
2. Dec 5, 2017 by  
clmig-jwehrheim
3. Mar 1, 2018 by  
Jennifer Bazaz  
Gettys (jbazaz)
4. Mar 8, 2018 by  
rzachari
5. Mar 16, 2018 by  
rzachari
6. Dec 4, 2018 by  
Jennifer Bazaz  
Gettys (jbazaz)

7. Feb 1, 2019 by  
Jennifer Bazaz  
Gettys (jbazaz)
8. Mar 4, 2019 by Tory  
Sarro (vsarro)
9. Jan 16, 2020 by  
Jennifer Bazaz  
Gettys (jbazaz)
10. Mar 24, 2020 by  
Jennifer Bazaz  
Gettys (jbazaz)
11. Apr 2, 2020 by  
Johanna Riemen  
(jriemen)
12. Oct 30, 2020 by  
Tory Sarro (vsarro)
13. Mar 4, 2021 by  
Jennifer Bazaz  
Gettys (jbazaz)

Name	Extension	Email
Deborah Polayes	4543	dpolayes

**Effective Catalog:** 2022-2023

**Program Level:** Undergraduate

**Program Type:** Bachelor's

**Degree Type:** Bachelor of Science

**Title:** Biology, BS

**Banner Title:** Biology, BS

Is this a retitling of  
an existing

Existing Program

**Registrar/OAPI Use  
Only – SCHEV  
Status** Approved

**Registrar's Office  
Use Only –  
Program Start Term**

**Registrar/OAPI Use  
Only – SCHEV**

**Letter**

**Registrar/OAPI Use  
Only – SACSCOC  
Status**

**Concentration(s):**

	<b>Associated Concentrations</b>	<b>Registrar's Office Use Only: Concentration Code</b>
1	Bioinformatics	BNF
2	Biopsychology	BP
3	Biotechnology and Molecular Biology	BTMB
4	Environmental and Conservation Biology	ESCB
5	Microbiology	MIB

**Registrar/IRR Use  
Only –  
Concentration CIP  
Code**

**College/School:** College of Science

**Department /  
Academic Unit:** Biology

**Jointly Owned  
Program?** No

**Participating  
Participating  
Justification**

What: In the policies, updating BIOL 103 to BIOL 102; BIOL BIOL 107 to BIOL 103; BIOL 106 to BIOL 105.

Why: To enhance student learning, the content of these courses were rearranged earlier this semester and the program needs to follow suit.

**Total Credits  
Required:** Total credits: minimum 120

**Registrar's Office Use Only - Program Code:**  
SC-BS-BIOL

**Registrar/IRR Use  
Only – Program CIP  
Code** 26.0101 - Biology/Biological Sciences,  
General.

**Admission  
Requirements:**

# Admissions

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University-wide admissions policies can be found in [Undergraduate Admissions Policies](#).

To apply for this program, please complete the [George Mason University Admissions Application](#).

## Program-Specific Policies:

# Policies

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Students must fulfill all [Requirements for Bachelor's Degrees](#), including the [Mason Core](#).

Important information and departmental policies are listed in the [Department of Biology](#).

[BIOL 308](#) Foundations of Ecology and Evolution meets the writing intensive requirement for this major. Transfer students who have transferred in [BIOL 308](#) Foundations of Ecology and Evolution but did not meet the writing intensive requirement may take [MLAB 300](#) Science Writing to meet the writing intensive requirement.

For policies governing all undergraduate degrees, see [AP.5 Undergraduate Policies](#).

## Important Program Requirements

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- Students may apply no more than 8 credits of [BIOL 102 Introductory Biology I-Survey of Biodiversity and Ecology \(Mason Core\)](#) or [BIOL 103 Introductory Biology II-Survey of Cell and Molecular Biology \(Mason Core\)](#) ~~BIOL 103 Introductory Biology II-Survey of Cell and Molecular Biology (Mason Core) or BIOL 107 Intro Biology II Lecture (Mason Core)~~ and [BIOL 105 Introductory Biology II Laboratory \(Mason Core\)](#) toward ~~BIOL 106 Introductory Biology II Laboratory (Mason Core) toward~~ elective credit (or equivalent transfer credit at the 100 to 200-level) if taken before successful completion of [BIOL 213](#) Cell Structure and Function ([Mason Core](#)).
- Biology majors must earn a minimum grade of 'C' in all biology core courses. A grade of 'C' or better must be earned in [BIOL 213](#) Cell Structure and Function ([Mason Core](#)) in order to advance to other core requirements.
- Students may repeat [BIOL 213](#) Cell Structure and Function ([Mason Core](#)) once, but a second time only with permission from the Department of Biology.
- Students may **not** count [BIOL 124](#) Human Anatomy and Physiology and/or [BIOL 125](#) Human Anatomy and Physiology toward any biology major requirement.
- Students who take [BIOL 300](#) BioDiversity may **not** count [BIOL 303](#) Animal Biology and/or [BIOL 304](#) Plant Biology toward any biology major requirement.
- 44 credits must be in biology coursework.
- [BIOL 493](#) Honors Research in Biology, [BIOL 495](#) Directed Studies in Biology, and [BIOL 497](#) Special Problems in Biology do not satisfy the requirements of the BS degree which state that students must complete at least two upper division courses that include a laboratory. The courses do, however, count as non-laboratory electives. The total limit for [BIOL 493](#) Honors Research in Biology, [BIOL 495](#) Directed Studies in Biology, and [BIOL 497](#) Special Problems in Biology combined is 6 credits toward the 44 credits required for the BS.

Several optional concentrations are available; details on each can be found in the Requirements tab.

## Teacher Licensure

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Students majoring in biology who wish to pursue a career teaching secondary school may consider applying for the [Secondary Education - Biology \(6-12\) Undergraduate Certificate](#) offered by the [College of Education and Human Development](#) as an option in seeking an initial Virginia teaching license.

Other routes to licensure include the [Biology, BA or BS/Curriculum and Instruction, Accelerated MEd](#) (Secondary Education Biology Concentration) or select traditional Master's programs. Please contact the [College of Education and Human Development](#) for more information.

### Degree Requirements:

Students should refer to the [Admissions & Policies](#) tab for specific policies related to this program.

Students must complete their biology coursework and the supporting requirements which follow with a minimum GPA of 2.00.

All students must complete the Core Courses listed below. Students then elect to complete the BS degree either with a concentration or without a concentration.

## Core Courses

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### Biology

<a href="#">BIOL 213</a>	Cell Structure and Function ( <a href="#">Mason Core</a> )	4
<a href="#">BIOL 214</a>	Biostatistics for Biology Majors	4
<a href="#">BIOL 300</a>	BioDiversity	4
<a href="#">BIOL 308</a>	Foundations of Ecology and Evolution 1	5
<a href="#">BIOL 311</a>	General Genetics	4

### Chemistry

<a href="#">CHEM 211</a>	General Chemistry I ( <a href="#">Mason Core</a> )	4
& <a href="#">CHEM 213</a>	and General Chemistry Laboratory I ( <a href="#">Mason Core</a> )	
<a href="#">CHEM 212</a>	General Chemistry II ( <a href="#">Mason Core</a> )	4
& <a href="#">CHEM 214</a>	and General Chemistry Laboratory II ( <a href="#">Mason Core</a> )	
<a href="#">CHEM 313</a>	Organic Chemistry I	5
& <a href="#">CHEM 315</a>	and Organic Chemistry Lab I	

### Physics

Select from one of the following Mason Core Natural Science sequences: 8

<a href="#">PHYS 160</a>	University Physics I ( <a href="#">Mason Core</a> )	
& <a href="#">PHYS 161</a>	and University Physics I Laboratory ( <a href="#">Mason Core</a> )	
& <a href="#">PHYS 260</a>	and University Physics II ( <a href="#">Mason Core</a> )	
& <a href="#">PHYS 261</a>	and University Physics II Laboratory ( <a href="#">Mason Core</a> )	
<a href="#">PHYS 243</a>	College Physics I ( <a href="#">Mason Core</a> )	
& <a href="#">PHYS 244</a>	and College Physics I Lab ( <a href="#">Mason Core</a> )	
& <a href="#">PHYS 245</a>	and College Physics II ( <a href="#">Mason Core</a> )	
& <a href="#">PHYS 246</a>	and College Physics II Lab ( <a href="#">Mason Core</a> )	

### Mathematics

Select one from the following: 3-6

<a href="#">MATH 111</a>	Linear Mathematical Modeling ( <a href="#">Mason Core</a> )
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or [MATH 113](#) Analytic Geometry and Calculus I ([Mason Core](#))  
[MATH 123](#) Calculus with Algebra/Trigonometry, Part A  
 & [MATH 124](#) and Calculus with Algebra/Trigonometry, Part B ([Mason Core](#))

Computer Science

Select one from the following:

3

[CDS 130](#) Computing for Scientists 2

[Any course\(s\) that fulfills the Mason Core: Information Technology requirement](#)

Total Credits

48-51

1 Fulfills writing intensive requirement.

Transfer students who have transferred in [BIOL 308](#) Foundations of Ecology and Evolution but did not meet the writing intensive requirement may take [MLAB 300](#) Science Writing to meet the writing intensive requirement.

2 Recommended by the Department of Biology.

## BS without Concentration

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Students who do not select an optional concentration must complete the biology core and shared courses shown above in addition to the curriculum requirements listed below.

Biology Electives

[Complete 23 credits of additional biology courses](#) 1

23

Additional Science Courses

Students are encouraged to consult with a biology faculty advisor to determine which option (A, B, or C) best meets their career goals. Select one from the following options: 3-8

Option A:

[CHEM 314](#) Organic Chemistry II  
 & [CHEM 318](#) and Organic Chemistry Lab II

Option B:

[One 3 credit chemistry course at the 300 or 400-level \(not CHEM 314\)](#)

Option C:

[GEOL 101](#) Introductory Geology I ([Mason Core](#)) (Natural Science courses)

[GEOL 102](#) Historical Geology ([Mason Core](#))

& [GEOL 104](#) and Historical Geology Laboratory ([Mason Core](#))

Total Credits

26-

31

### Note:

Students expecting to enter a professional school are strongly encouraged to complete [MATH 113](#) Analytic Geometry and Calculus I ([Mason Core](#)).

1Of which, at least 15 credits must be upper division, and at least two of the upper division courses must include a laboratory.

## Concentration in Bioinformatics (BNF)

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The highly interdisciplinary field of bioinformatics has emerged as a powerful modern science. There is a great demand for undergraduate and graduate-level trained individuals with a background in bioinformatics in industry as well as in academia.

### Computer Science

3

Please note: [CDS 130](#) is recommended to fulfill the Computer Science requirement in the shared core above.

#### [CDS 230](#)

Modeling and Simulation I

### Bioinformatics

6

#### [BINF 401](#)

Bioinformatics and Computational Biology I

#### [BINF 402](#)

Bioinformatics and Computational Biology II

### Biology

14-16

#### [BIOL 312](#)

Biostatistics for Bioinformatics

#### [BIOL 401](#)

Phage Discovery

#### [BIOL 412](#)

Phage Genomics

### Biology Lab Elective

Select one from the following:

#### [BIOL 305](#)

Biology of Microorganisms

#### & [BIOL 306](#)

and Biology of Microorganisms Laboratory

#### [BIOL 320](#)

Comparative Chordate Anatomy

#### [BIOL 322](#)

Developmental Biology

#### & [BIOL 323](#)

and Lab for Developmental Biology

#### [BIOL 331](#)

Invertebrate Zoology

#### [BIOL 332](#)

Insect Biology

#### [BIOL 334](#)

Vertebrate Paleontology

#### [BIOL 336](#)

Invertebrate Paleontology

#### [BIOL 344](#)

Plant Diversity and Evolution

#### [BIOL 345](#)

Plant Ecology

#### [BIOL 350](#)

Freshwater Ecosystems

#### [BIOL 355](#)

Ecological Engineering and Ecosystem Restoration

#### [BIOL 379](#)

RS: Ecological Sustainability ([Mason Core](#))

#### [BIOL 385](#)

Biotechnology and Genetic Engineering

#### & [BIOL 486](#)

and Molecular Biology and Biotechnology Laboratory

#### [BIOL 405](#)

Microbial Genetics

#### [BIOL 407](#)

Microbial Diversity

#### [BIOL 430](#)

Advanced Human Anatomy and Physiology I

#### [BIOL 431](#)

Advanced Human Anatomy and Physiology II

#### [BIOL 437](#)

Orinthology

#### [BIOL 438](#)

Mammalogy

#### [BIOL 439](#)

Herpetology

#### [BIOL 452](#)

Immunology

#### & [BIOL 453](#)

and Immunology Laboratory

<a href="#"><u>BIOL 454</u></a>	Marine Mammal Biology and Conservation
& <a href="#"><u>BIOL 455</u></a>	and Marine Mammal Biology and Conservation Field Course
<a href="#"><u>BIOL 465</u></a>	Histology
<a href="#"><u>BIOL 468</u></a>	Vertebrate Natural History
<a href="#"><u>BIOL 472</u></a>	Introductory Animal Behavior
& <a href="#"><u>BIOL 473</u></a>	and Introductory Laboratory in Animal Behavior
<a href="#"><u>BIOL 484</u></a>	Cell Signaling and Disease
& <a href="#"><u>BIOL 485</u></a>	and Cell Signaling Laboratory
<a href="#"><u>BIOL 509</u></a>	DNA Analysis of Biological Evidence
& <a href="#"><u>BIOL 510</u></a>	and Forensic DNA Analysis Laboratory
<a href="#"><u>BIOL 543</u></a>	Tropical Ecosystems

#### Additional Science Courses

Select one from the following options: 1

3-8

Option A:

<a href="#"><u>CHEM 314</u></a>	Organic Chemistry II
<a href="#"><u>CHEM 318</u></a>	Organic Chemistry Lab II

Option B:

[One 3 credit chemistry course at the 300 or 400-level](#) 2

Option C:

<a href="#"><u>GEOL 101</u></a>	Introductory Geology I ( <a href="#"><u>Mason Core</u></a> )
<a href="#"><u>GEOL 102</u></a>	Historical Geology ( <a href="#"><u>Mason Core</u></a> )
& <a href="#"><u>GEOL 104</u></a>	and Historical Geology Laboratory ( <a href="#"><u>Mason Core</u></a> )

Total Credits

26-33

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

2 [CHEM 314](#) Organic Chemistry II does not fulfill this requirement.

## Concentration in Biopsychology (BP)

The biopsychology concentration consists of a selection of courses designed to address the needs and interest of students who wish to study biology in more depth while simultaneously exploring psychology and neurobiology. This concentration will help prepare students for the MCAT section related to psychology and provide veterinary students with a background in animal learning/behavior.

#### Biopsychology Courses

<a href="#"><u>BIOL 430</u></a>	Advanced Human Anatomy and Physiology I	4
<a href="#"><u>BIOL 431</u></a>	Advanced Human Anatomy and Physiology II	4
<a href="#"><u>PSYC 372</u></a>	Biopsychology	3
<a href="#"><u>PSYC 373</u></a>	Biopsychology Laboratory	2

Additional Psychology/Neuroscience Course

Select 3-4 credits from the following:

3-4

<a href="#"><u>PSYC 304</u></a>	Principles of Learning
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<a href="#">PSYC 376</a>	Brain and Behavior
<a href="#">PSYC 406</a>	Psychology of Communication ( <a href="#">Mason Core</a> )
<a href="#">NEUR 327</a>	Cellular, Neurophysiological, and Pharmacological Neuroscience
<a href="#">NEUR 335</a>	Molecular, Developmental, and Systems Neuroscience

#### Additional Biology Courses

Select 7-8 credits from the following:

7-8

<a href="#">BIOL 305</a>	Biology of Microorganisms
<a href="#">BIOL 306</a>	Biology of Microorganisms Laboratory
<a href="#">BIOL 314</a>	Introduction to Research Design and Analysis
<a href="#">BIOL 322</a>	Developmental Biology
<a href="#">BIOL 323</a>	Lab for Developmental Biology
<a href="#">BIOL 437</a>	Orinthology
<a href="#">BIOL 438</a>	Mammalogy
<a href="#">BIOL 472</a>	Introductory Animal Behavior
<a href="#">BIOL 473</a>	Introductory Laboratory in Animal Behavior
<a href="#">BIOL 483</a>	General Biochemistry

#### Additional Chemistry Courses

Select one from the following options: 1

3-5

Option A:

<a href="#">CHEM 314</a>	Organic Chemistry II
& <a href="#">CHEM 318</a>	and Organic Chemistry Lab II

Option B:

[One chemistry course at the 300 or 400-level](#) 2

#### Total Credits

26-30

1Students are encouraged to consult with a biology faculty advisor to determine which option best meets their career goals.

2[CHEM 314](#) Organic Chemistry II alone does not fulfill this requirement.

## Concentration in Biotechnology and Molecular Biology (BTMB)

The biotechnology and molecular biology concentration consists of a selection of courses that provide essential skills to students who seek employment in the field or wish to include an applied component in their undergraduate training in biology.

#### Biotechnology Courses

<a href="#">BIOL 305</a>	Biology of Microorganisms	3
<a href="#">BIOL 306</a>	Biology of Microorganisms Laboratory	1
<a href="#">BIOL 385</a>	Biotechnology and Genetic Engineering	3
<a href="#">BIOL 483</a>	General Biochemistry	4

#### Additional Biology Courses

Select 12 credits from the following, at least one of the courses must include a laboratory:

12

Laboratory Courses:

<a href="#"><u>BIOL 402</u></a>	Applied and Industrial Microbiology
& <a href="#"><u>BIOL 403</u></a>	and Techniques in Applied and Industrial Microbiology
<a href="#"><u>BIOL 405</u></a>	Microbial Genetics
<a href="#"><u>BIOL 452</u></a>	Immunology
& <a href="#"><u>BIOL 453</u></a>	and Immunology Laboratory
<a href="#"><u>BIOL 465</u></a>	Histology
<a href="#"><u>BIOL 486</u></a>	Molecular Biology and Biotechnology Laboratory

#### Non-laboratory Courses:

<a href="#"><u>BIOL 314</u></a>	Introduction to Research Design and Analysis
<a href="#"><u>BIOL 382</u></a>	Introduction to Virology
<a href="#"><u>BIOL 401</u></a>	Phage Discovery
<a href="#"><u>BIOL 411</u></a>	Advanced General Genetics
<a href="#"><u>BIOL 412</u></a>	Phage Genomics
<a href="#"><u>BIOL 417</u></a>	Selected Topics in Molecular and Cellular Biology 1
<a href="#"><u>BIOL 418</u></a>	Current Topics in Microbiology 1
<a href="#"><u>BIOL 420</u></a>	Vaccines
<a href="#"><u>BIOL 421</u></a>	Genetics of Human Diseases
<a href="#"><u>BIOL 422</u></a>	Stem Cell Biology and Regenerative Medicine
<a href="#"><u>BIOL 482</u></a>	Introduction to Molecular Genetics
<a href="#"><u>BIOL 484</u></a>	Cell Signaling and Disease
<a href="#"><u>BIOL 497</u></a>	Special Problems in Biology 1

#### Additional Chemistry Courses

<a href="#"><u>CHEM 314</u></a>	Organic Chemistry II	3
<a href="#"><u>CHEM 318</u></a>	Organic Chemistry Lab II	2

Total Credits 28

1Registration for [BIOL 417](#) Selected Topics in Molecular and Cellular Biology, [BIOL 418](#) Current Topics in Microbiology, or [BIOL 497](#) Special Problems in Biology is subject to approval by the Director of Undergraduate Studies and the Chair of the Department of Biology.

## Concentration in Environmental and Conservation Biology (ESCB)

This concentration is offered to students seeking a biology degree that focuses on ecology and organismal biology and prepares them for graduate work or employment in environmental and conservation fields, such as natural resources management, fisheries, forestry, water quality management, aquatic and wetland ecology, and conservation biology. The concentration is staffed and supported by the [Department of Environmental Science and Policy](#).

#### Environmental and Conservation Biology

<a href="#"><u>BIOL 318</u></a>	Conservation Biology	3
<a href="#"><u>BIOL 377</u></a>	Applied Ecology	3

#### Biology Electives

Select 17 credits from the following: 1 17

<a href="#"><u>BIOL 309</u></a>	Oceanography
<a href="#"><u>BIOL 314</u></a>	Introduction to Research Design and Analysis
<a href="#"><u>BIOL 326</u></a>	Animal Physiology
<a href="#"><u>BIOL 331</u></a>	Invertebrate Zoology
<a href="#"><u>BIOL 332</u></a>	Insect Biology
<a href="#"><u>BIOL 344</u></a>	Plant Diversity and Evolution
<a href="#"><u>BIOL 345</u></a>	Plant Ecology
<a href="#"><u>BIOL 350</u></a>	Freshwater Ecosystems
<a href="#"><u>BIOL 355</u></a>	Ecological Engineering and Ecosystem Restoration
<a href="#"><u>BIOL 378</u></a>	Applied Ecology Laboratory
<a href="#"><u>BIOL 379</u></a>	RS: Ecological Sustainability ( <a href="#"><u>Mason Core</u></a> )
<a href="#"><u>BIOL 437</u></a>	Orinthology
<a href="#"><u>BIOL 438</u></a>	Mammalogy
<a href="#"><u>BIOL 439</u></a>	Herpetology
<a href="#"><u>BIOL 440</u></a>	Field Biology
<a href="#"><u>BIOL 446</u></a>	Ecological and Evolutionary Physiology
<a href="#"><u>BIOL 449</u></a>	Marine Ecology
<a href="#"><u>BIOL 450</u></a>	Marine Conservation
<a href="#"><u>BIOL 454</u></a>	Marine Mammal Biology and Conservation
<a href="#"><u>BIOL 455</u></a>	Marine Mammal Biology and Conservation Field Course
<a href="#"><u>BIOL 457</u></a>	Reproductive Strategies
<a href="#"><u>BIOL 459</u></a>	Fungi and Ecosystems
<a href="#"><u>BIOL 468</u></a>	Vertebrate Natural History
<a href="#"><u>BIOL 472</u></a>	Introductory Animal Behavior
& <a href="#"><u>BIOL 473</u></a>	and Introductory Laboratory in Animal Behavior
<a href="#"><u>BIOL 480</u></a>	The Diversity of Fishes
<a href="#"><u>BIOL 497</u></a>	Special Problems in Biology 4

#### Additional Science Courses

Select one from the following options: 2

3-8

Option A:

<a href="#"><u>CHEM 314</u></a>	Organic Chemistry II
& <a href="#"><u>CHEM 318</u></a>	and Organic Chemistry Lab II

Option B:

[One chemistry course at the 300 or 400-level](#) 3

Option C:

<a href="#"><u>GEOL 101</u></a>	Introductory Geology I ( <a href="#"><u>Mason Core</u></a> )
<a href="#"><u>GEOL 102</u></a>	Historical Geology ( <a href="#"><u>Mason Core</u></a> )
& <a href="#"><u>GEOL 104</u></a>	and Historical Geology Laboratory ( <a href="#"><u>Mason Core</u></a> )

Total Credits

26-31

1Of which, two courses must be selected from the list above and must have either: 2 laboratory courses or 1 laboratory course and 1 field course (consult with an advisor for guidance).

2 Students are encouraged to consult with a biology faculty advisor to determine which option best meets their career goals.

3 [CHEM 314](#) Organic Chemistry II alone does not fulfill this requirement.

4 Registration in [BIOL 497](#) Special Problems in Biology is subject to approval by the Director of Undergraduate Studies and the Chairman of the Department of Biology.

## Concentration in Microbiology (MIB)

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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.

### Microbiology Courses

<a href="#">BIOL 305</a>	Biology of Microorganisms	3
<a href="#">BIOL 306</a>	Biology of Microorganisms Laboratory	1
<a href="#">BIOL 405</a>	Microbial Genetics	4
<a href="#">BIOL 407</a>	Microbial Diversity	4

### Biology Electives

Select 11 credits from the following: 11

<a href="#">BIOL 314</a>	Introduction to Research Design and Analysis
<a href="#">BIOL 382</a>	Introduction to Virology
<a href="#">BIOL 385</a>	Biotechnology and Genetic Engineering
<a href="#">BIOL 401</a>	Phage Discovery
<a href="#">BIOL 402</a>	Applied and Industrial Microbiology
<a href="#">BIOL 403</a>	Techniques in Applied and Industrial Microbiology
<a href="#">BIOL 404</a>	Medical Microbiology
<a href="#">BIOL 412</a>	Phage Genomics
<a href="#">BIOL 418</a>	Current Topics in Microbiology
<a href="#">BIOL 420</a>	Vaccines
<a href="#">BIOL 452</a>	Immunology
<a href="#">BIOL 453</a>	Immunology Laboratory
<a href="#">BIOL 459</a>	Fungi and Ecosystems
<a href="#">BIOL 483</a>	General Biochemistry

### Additional Chemistry Courses

<a href="#">CHEM 314</a>	Organic Chemistry II	3
<a href="#">CHEM 318</a>	Organic Chemistry Lab II	2

Total Credits 28

**Retroactive  
Requirements  
Updates:**

**Plan of Study:**

**Honors  
Information:**

# Honors in the Major

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## Admissions

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Minimum requirements for invitation:

- GPA in biology courses must be 3.33 or better
- GPA in supporting requirements (math and other science) must be 3.00 or better
- Grade of 'B' or better in [BIOL 213](#) Cell Structure and Function ([Mason Core](#))

Students should apply for admission to the Honors Program during their first or second year at the university.

Contact the [Department of Biology](#) for information on applying.

## Retention Requirements

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Students in honors biology must maintain a biology GPA of 3.33 or better and a supporting GPA of 3.00 or better from the time they have accumulated 30 hours and thereafter. Students who fall below this standard will be given a one semester probationary period in which to bring their GPA back up to the minimum standard.

## Requirements to Graduate with Biology Honors

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Students are required to take 6 to 8 credits in honors courses in BIOL including three semesters of [BIOL 494](#) Honors Seminar in Biology or two semesters of [BIOL 494](#) Honors Seminar in Biology and one semester of [BIOL 493](#) Honors Research in Biology. [BIOL 498](#) Research Seminar may count towards one of the semester requirements of [BIOL 494](#) Honors Seminar in Biology. The GPA requirements are as follows:

- Minimum 3.33 GPA in honors biology courses
- Minimum 3.33 GPA in biology requirements
- Minimum 3.00 GPA in supporting requirements
- Minimum 3.00 GPA overall

Accelerated  
Description/Dual  
Degree  
Description:

INTO-Mason  
Requirements:

College  
Requirements &  
Policies:

Department /  
Academic Unit  
Requirements &  
Policies:

## Program Outcomes

### Additional Program Information

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*This information is required by the Office of Accreditation and Program Integrity.*

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

Indicate whether

**What is the  
primary delivery  
format for the  
program?**

Face-to-Face Only

**Does any portion of this program occur off-campus?**

No

*Please explain:*

**Are you working with a vendor / other collaborators to offer your program?**

No

*Please explain:*

**Related  
Departments**

**Could this program prepare students for any type of professional licensure, in  
Virginia or elsewhere?**

No

*Please explain:*

**Are you adding or removing a licensure component?**

No

*Please explain:*

## Additional SCHEV & SACSCOC Information

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**Are you changing the total number of credits required for this program?**

No

**Are you changing the delivery format in any way (e.g adding an online option)?**

No

**Are you adding/removing a licensure option which was approved by SCHEV?**

No

**Will any portion of this program be offered at an off-campus location?**

No

**What off-campus location(s)? List all**

**What percentage of credits toward this program are offered**

**Please list percentages by site (i.e. 45% at Site A, 35% at Site B)**

**Will this program change affect any specialized accreditation?**

No

**Is the content of the new program closely related to that of an existing approved program?**

No

**Which existing approved program(s)?**

**Is this new program considered to be "advancing the degree level of a currently approved program" (i.e. existing content is at lower degree level, new content is at the higher degree level)?**

No

**Which existing approved program(s)?**

**Is this new program considered to be "lowering the degree level of a currently approved program" (i.e. existing content is at higher degree level, new content is at the lower degree level)?**

No

**Which existing approved program(s)?**

**Does this change represent a repackaging of content in an existing approved degree/certificate program?**

No

**Percentage of total credits containing new course content, excluding gen ed courses for undergraduate program: ("New content" means content that is not currently included in an existing approved degree/certificate program.) Please choose a percentage (i.e. 0%-100%)**

less than 25%

**Are the total credits for the program increasing or decreasing by more than 3 credits?**

No

**Will any additional equipment/facilities be needed?**

No

**Description of institutional impact:**

**Will any additional faculty be required?**

No

**Description of institutional impact:**

**Will any additional financial resources be needed?**

No

**Description of institutional impact:**

**Will any additional library/learning resources needed?**

No

**Description of institutional impact:**

### **OAPI Use Only – Determination of SACSCOC Impact**

**Comments or Notes**

### **Green Leaf Program Designation**

**Is this a Green Leaf program?**

No

Green Leaf



Relationship to

Relationship to

List sustainability-  
focused courses

~~currently required~~

Sustainability-related academic programs either require at least one sustaina

List sustainability-  
related courses

currently required

**Does this program cover material which crosses into another department?**

No

Impacted

Additional  
Attachments

SCHEV Proposal

Executive Summary

Reviewer  
Comments

Additional  
Comments

**Is this course required of all students in this degree program?**

%wi\_required.eshtml%

Attached

Key: 17