Program Change Request

Date Submitted: 12/05/24 1:24 pm

Viewing: SC-BA-BIOL : Biology, BA

Last approved: 04/29/24 12:58 pm

Last edit: 12/05/24 1:24 pm

Changes proposed by: jbazaz

Catalog Pages Using this Program

Biology, BA

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

Yes

Requestor:

In Workflow

1. **BIOL Program Chair**
2. **SC Curriculum Committee**
3. SC Assistant Dean
4. Assoc Provost-Undergraduate
5. Registrar-Programs

Approval Path

1. 12/05/24 1:26 pm Geraldine Grant (ggrant1): Approved for BIOL Program Chair

History

1. Oct 23, 2017 by clmig-jwehrheim
2. Mar 16, 2018 by rzachari
3. Dec 4, 2018 by Jennifer Bazaz Gettys (jbazaz)
4. Feb 1, 2019 by Jennifer Bazaz Gettys (jbazaz)
5. Mar 11, 2019 by Tory Sarro (vsarro)
6. Feb 10, 2020 by Jennifer Bazaz Gettys (jbazaz)
7. Mar 24, 2020 by Jennifer Bazaz Gettys (jbazaz)

8. Apr 2, 2020 by jriemen
9. Oct 30, 2020 by Tory Sarro (vsarro)
10. Mar 4, 2021 by Jennifer Bazaz Gettys (jbazaz)
11. Oct 1, 2021 by Jennifer Bazaz Gettys (jbazaz)
12. May 10, 2022 by Jennifer Bazaz Gettys (jbazaz)
13. May 17, 2022 by Tory Sarro (vsarro)
14. Jul 14, 2022 by Tory Sarro (vsarro)
15. Jan 25, 2023 by Jennifer Bazaz Gettys (jbazaz)
16. Apr 13, 2023 by Jennifer Bazaz Gettys (jbazaz)
17. Apr 29, 2024 by Jennifer Bazaz Gettys (jbazaz)

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Valerie Olmo	1046	volmo@gmu.edu

Effective Catalog:	2025-2026
Program Level:	Undergraduate
Program Type:	Bachelor's
Degree Type:	Bachelor of Arts
Title:	Biology, BA
Banner Title:	Biology, BA
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):

	Associated Concentrations	Registrar's Office Use Only: Concentration Code
1	Biological Illustration	BIOI
2	Biological Health	BIOH

Registrar/IRR Use Only – Concentration CIP Code

College/School: College of Science

Department / Academic Unit: Biology

Jointly Owned Program? No

Justification

What: Being more specific about which electives can count toward the supporting science category.
Why: Aiding degree audits and enhancing clarity.

What: Reorganizing the core.
Why: To align with the BS-BIOL and to make the core easier to identify for degree audit programming.

Total Credits Required: Total credits: minimum 120

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

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

Admission Requirements:

Admissions

University-wide admissions policies can be found in the Undergraduate Admissions Policies section of this catalog.
To apply for this program, please complete the George Mason University Admissions Application.
For students interested in taking the Biological Health concentration, it is advised that they have already obtained a bachelor's degree; this concentration is primarily intended for students who are interested in changing their careers to one with a biology foundation. The BA's other concentration, or the Biology, BS are great options for students early in their undergraduate studies.

Program-Specific Policies:

Policies

Students must fulfill all Requirements for Bachelor's Degrees, including the Mason Core. Students in this bachelor's program must also complete the additional College Requirements for the BA Degree (see Requirements).
The writing intensive requirement is fulfilled by BIOL 308 Foundations of Ecology and Evolution (Mason Core) or MLAB 300 Science Writing (Mason Core) .

- For post-baccalaureate students enrolled in the Biological Health concentration, BIOL 308 Foundations of Ecology and Evolution (Mason Core) or MLAB 300 Science Writing (Mason Core) are not required.
- ~~Transfer students who have transferred in BIOL 308 Foundations of Ecology and Evolution (Mason Core) but did not meet the writing intensive requirement may take MLAB 300 Science Writing (Mason Core) to meet the writing intensive requirement.~~
- ~~For post-baccalaureate students enrolled in the Biological Health concentration, BIOL 308 Foundations of Ecology and Evolution (Mason Core) is not required.~~

Post-baccalaureate students entering this program are advised to explore the Application for a Second Bachelor's Degree and the AP. 5.3.3 sections of this catalog.
Important information and departmental policies are listed with the Department of Biology.
For policies governing all undergraduate programs, see AP.5 Undergraduate Policies.

Important Program Requirements

- Biology majors must earn a minimum grade of 'C' in all courses under the "Biology Core Courses" header.
- **Upper-level Courses:** At least 45 credits counted toward the degree must be from 300-400 level courses.
  - At least one of which must be an approved upper-level laboratory.
  - BIOL 495 Directed Studies in Biology, and BIOL 497 Special Problems in Biology do not count toward the upper-level laboratory course requirement. The courses do, however, count as non-laboratory electives.
    - The total limit forBIOL 493 Honors Research in Biology, BIOL 495 Directed Studies in BiologyandBIOL 497 Special Problems in Biologycombined is 3 credits toward the BA.
- Students may **not** count BIOL 124 Human Anatomy and Physiology I and/or BIOL 125 Human Anatomy and Physiology II as a biology elective, but may be taken as a general elective.

- Students who transfer in both BIOL 303 Animal Biology and BIOL 304 Plant Biology will satisfy BIOL 300 BioDiversity plus four credits of biology elective coursework.

~~Students must complete the degree requirements with:~~

- ~~A minimum GPA of 2.00 in the BIOL courses listed in the degree program,~~
- ~~A minimum GPA of 2.00 in the supporting courses listed in the degree program.~~

~~Additionally:~~

- ~~Biology majors must earn a minimum grade of 'C' in all of the biology core courses. A grade of 'C' or better must be earned in BIOL 213 Cell Structure and Function in order to advance to other core requirements.~~
- ~~Students may repeat BIOL 213 Cell Structure and Function once, but a second time only with permission of the Department of Biology.~~
- ~~Students may **not** count BIOL 124 Human Anatomy and Physiology I and/or BIOL 125 Human Anatomy and Physiology II 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.~~
- ~~BIOL 495 Directed Studies in Biology, and BIOL 497 Special Problems in Biology do not satisfy the requirements of the BA degree which state that students must complete at least one upper division course that includes 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 3 credits toward 32 credits for the BA.~~

Teacher Licensure

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 undergraduate advisor in 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.

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

~~Students should refer to the Admissions & Policies tab for specific policies related to this program.~~

~~Biology, BA majors are required to complete the following coursework with the option of also completing a concentration:~~

Biology Core Courses

BIOL 102	Introductory Biology I-Survey of Biodiversity and Ecology (Mason Core)	4
BIOL 103 & BIOL 105	Introductory Biology II-Survey of Cell and Molecular Biology (Mason Core) and Introductory Biology II Laboratory (Mason Core) [1]	4

BIOL 213	Cell Structure and Function	4
~~BIOL 214~~	~~Biostatistics for Biology Majors~~	~~4~~
~~BIOL 300~~	~~BioDiversity~~ [1,2]	~~4~~
BIOL 308	Foundations of Ecology and Evolution (Mason Core) [1,2]	4-5
or BIOL 300	BioDiversity	
BIOL 311	General Genetics	4
Total Credits		20-21

1 For post-baccalaureate students enrolled in the Biological Health concentration, BIOL 103 Introductory Biology II-Survey of Cell and Molecular Biology (Mason Core), BIOL 105 Introductory Biology II Laboratory (Mason Core), BIOL 300 BioDiversity, BIOL 308 Foundations of Ecology and Evolution (Mason Core) are not required.

2 Fulfills the writing intensive requirement.

Supporting Core Courses

Chemistry		
CHEM 211 & CHEM 213	General Chemistry I (Mason Core) and General Chemistry Laboratory I (Mason Core)	4
CHEM 212 & CHEM 214	General Chemistry II (Mason Core) and General Chemistry Laboratory II (Mason Core)	4
Mathematics		
Select one option from the following:		4-6
MATH 111	Linear Mathematical Modeling (Mason Core)	
MATH 113	Analytic Geometry and Calculus I (Mason Core)	
MATH 123 & MATH 124	Calculus with Algebra/Trigonometry, Part A and Calculus with Algebra/Trigonometry, Part B (Mason Core)	
Additional Science		
Select 6 credits from the following:		6
ASTR 103	Astronomy (Mason Core)	
ASTR 111	The Solar System (Mason Core)	
ASTR 113	Stars, Galaxies, and the Universe (Mason Core)	
GEOL 101	Physical Geology (Mason Core)	

GEOL 102	Historical Geology (Mason Core)	
PHYS 160	University Physics I (Mason Core)	
PHYS 243	College Physics I (Mason Core) [1]	
PHYS 244	College Physics I Lab (Mason Core) [1]	
PHYS 245	College Physics II (Mason Core) [1]	
PHYS 246	College Physics II Lab (Mason Core) [1]	
PHYS 260	University Physics II (Mason Core)	
Total Credits		18-20

[1] Required for students enrolled in the Biological Health Concentration.

Biology Elective Options

~~Biology Electives~~

~~Complete 8-12 credits of additional biology courses [1,2]~~	~~8-12~~
Students must complete 8-12 credits of additional biology courses, at least 1 credit of which must be in an upper-level laboratory, and no more than 4 credits can be in lower-level courses:	8-12

Non-lab Courses [1]

BIOL 101	Biology Freshman Seminar	
BIOL 177	Introductory Ecology for Environmental Engineers	
BIOL 302	Alternative Careers in Biology	
BIOL 305	Biology of Microorganisms	
BIOL 309	Oceanography	
or EVPP 309	Oceanography	
or GEOL 309	Oceanography	
BIOL 312	Biostatistics for Bioinformatics	
BIOL 318	Conservation Biology	
BIOL 322	Developmental Biology	
BIOL 326	Animal Physiology	
BIOL 331	Invertebrate Zoology	

BIOL 334	Vertebrate Paleontology
or GEOL 334	Vertebrate Paleontology (Mason Core)
BIOL 336	Invertebrate Paleontology
BIOL 345	Plant Ecology
BIOL 350	Freshwater Ecosystems
or EVPP 350	Freshwater Ecosystems
BIOL 377	Applied Ecology
or EVPP 377	Applied Ecology
BIOL 382	Introduction to Virology
BIOL 385	Biotechnology and Genetic Engineering
BIOL 404	Medical Microbiology
BIOL 408	Mushrooms, Molds and Society
or EVPP 408	Mushrooms, Molds and Society
BIOL 412	Phage Genomics
BIOL 413	Histotechniques
BIOL 417	Selected Topics in Molecular and Cellular Biology
BIOL 420	Vaccines
BIOL 421	Genetics of Human Diseases
BIOL 423	Biology of Obesity and Weight Loss
BIOL 425	Human Physiology
BIOL 426	Mechanisms of Aging
BIOL 427	Conservation Medicine
or EVPP 427	Conservation Medicine
BIOL 429	Biological Foundations of Pharmacology
BIOL 432	Clinical Applications in Human Physiology
BIOL 435	Selected Topics in Biology
BIOL 443	Tropical Ecology
BIOL 449	Marine Ecology
BIOL 450	Marine Conservation

BIOL 452	Immunology
BIOL 454	Marine Mammal Biology and Conservation
BIOL 457	Reproductive Strategies
BIOL 460	Infectious Diseases Wildlife
or EVPP 460	Infectious Diseases of Wildlife
BIOL 472	Introductory Animal Behavior
BIOL 482	Introduction to Molecular Genetics
BIOL 483	General Biochemistry
EVPP 419	Marine Mammal Biology and Conservation
EVPP 421	Marine Conservation
EVPP 449	Marine Ecology
EVPP 451	Fungi and Ecosystems
CONS 472	Introduction to Animal Behavior
CONS 480	Primate Behavior, Ecology and Conservation

Upper-level Laboratory Courses [1,2]

BIOL 303 & BIOL 306	Animal Biology and Biology of Microorganisms Laboratory
BIOL 304	Plant Biology
BIOL 305 & BIOL 306	Biology of Microorganisms and Biology of Microorganisms Laboratory
BIOL 322 & BIOL 323	Developmental Biology and Environmental Effects on Embryonic Development
BIOL 377 & BIOL 378	Applied Ecology and Applied Ecology Laboratory
BIOL 385 & BIOL 486	Biotechnology and Genetic Engineering and Molecular Biology and Biotechnology Laboratory
BIOL 401	Phage Discovery
BIOL 405	Microbial Genetics
BIOL 407	Microbial Diversity
BIOL 430	Advanced Human Anatomy and Physiology I [2]

BIOL 431	Advanced Human Anatomy and Physiology II [2]
BIOL 437	Ornithology
or EVPP 437	Ornithology
BIOL 438	Mammalogy
or EVPP 438	Mammalogy
BIOL 439	Herpetology
or EVPP 439	Herpetology
BIOL 440	Field Biology
or CONS 440	Ecology Field Skills
BIOL 443 & BIOL 444	Tropical Ecology and Tropical Ecology Laboratory
BIOL 452 & BIOL 453	Immunology and Immunology Laboratory
BIOL 465	Histology
BIOL 472 & BIOL 473	Introductory Animal Behavior and Introductory Laboratory in Animal Behavior
BIOL 485	Cell Signaling Laboratory
EVPP 441	Protist Diversity and Ecology
CONS 332	Insect Biology
CONS 402	Applied Conservation
CONS 404	Biodiversity Monitoring
CONS 405	Landscape and Macrosystems Ecology
CONS 406	Small Population Management

1 For the Biological Health concentration, the full 12 credits must be chosen in upper-level courses, and at least one course must include a laboratory.

2 Students completing the Biological Illustration Concentration should select BIOL 430 Advanced Human Anatomy and Physiology I and BIOL 431 Advanced Human Anatomy and Physiology II to fulfill the biology elective requirements for the major.

~~Chemistry~~

CHEM 211 & CHEM 213	General Chemistry I (Mason Core) and General Chemistry Laboratory I (Mason Core) (Natural Science course)	4
CHEM 212 & CHEM 214	General Chemistry II (Mason Core) and General Chemistry Laboratory II (Mason Core) (Natural Science course)	4
Total Credits		0

Math

Select one from the following:		4-6
MATH 111	Linear Mathematical Modeling (Mason Core) (Quantitative Reasoning courses)	
MATH 113	Analytic Geometry and Calculus I (Mason Core)	
MATH 123 & MATH 124	Calculus with Algebra/Trigonometry, Part A and Calculus with Algebra/Trigonometry, Part B (Mason Core)	
Total Credits		0

Computer Science

Select one from the following: [1]		3
CDS 130	Computing for Scientists (Mason Core) [2]	
Any course(s) that fulfills the Mason Core: Information Technology requirement		
Total Credits		0

1 For post-baccalaureate students enrolled in the Biological Health concentration, the Computer Science requirement is not required.

2 Recommended by the Department of Biology

BA without Concentration

Students who are interested in a career in secondary science education, or in the business of biology are well suited for this degree option.

Natural Science		
Select 6 credits from the following Mason Core: Natural Science Courses:		6
ASTR 103	Astronomy (Mason Core)	
ASTR 111	The Solar System (Mason Core)	
ASTR 113	Stars, Galaxies, and the Universe (Mason Core)	
GEOL 101	Physical Geology (Mason Core)	

~~GEOL 102~~	~~Historical Geology (Mason Core)~~	
~~PHYS 160~~	~~University Physics I (Mason Core)~~	
~~PHYS 243~~	~~College Physics I (Mason Core)~~	
~~PHYS 245~~	~~College Physics II (Mason Core)~~	
~~PHYS 260~~	~~University Physics II (Mason Core)~~	
~~Total Credits~~		~~0~~

Concentration in Biological Illustration (BIOI)

This optional concentration consists of a selection of courses designed to address the needs and interests of students who wish to study biology and simultaneously have the aptitude to draw, animate, or design art for textbooks, videos, papers, etc. This concentration has significant biology, chemistry, and physics components like all biology majors, and includes art classes that will prepare students for the opportunity to use their love of biology and art in one degree.

~~Natural Science~~		
~~Choose 6 credits from the following Mason Core: Natural Science Courses~~		~~6~~
~~ASTR 103~~	~~Astronomy (Mason Core)~~	
~~ASTR 111~~	~~The Solar System (Mason Core)~~	
~~ASTR 113~~	~~Stars, Galaxies, and the Universe (Mason Core)~~	
~~GEOL 101~~	~~Physical Geology (Mason Core)~~	
~~GEOL 102~~	~~Historical Geology (Mason Core)~~	
~~PHYS 160~~	~~University Physics I (Mason Core)~~	
~~PHYS 243~~	~~College Physics I (Mason Core)~~	
~~PHYS 245~~	~~College Physics II (Mason Core)~~	
~~PHYS 260~~	~~University Physics II (Mason Core)~~	
~~Art and Visual Technology~~		
~~Choose 21 credits from the following:~~		~~21~~
~~AVT 180~~	~~New Media in the Creative Arts (Mason Core)~~	
Select 15 credits from the following:		15
AVT 222	Drawing I (Mason Core)	
AVT 323	Drawing II	

AVT 324	Figure Drawing	
AVT 327	Illustration	
AVT 328	Mixed Media	
AVT 382	2D Experimental Animation	
AVT 383	3D Experimental Animation	
~~AVT 385~~	~~EcoArt (Mason Core)~~	
~~or AVT 497~~	~~Senior Project (Mason Core)~~	
~~AVT 422~~	~~Advanced Drawing~~	
Total Credits		15

Concentration in Biological Health (BIOH)

This concentration is specially designed for students who have a previous four-year degree and wish to change careers to pursue a profession in the health sciences. Students are encouraged to work closely with an advisor on their program of study as it relates to their transfer coursework.

Additional Chemistry		
CHEM 313	Organic Chemistry I	5
& CHEM 315	and Organic Chemistry Lab I	
CHEM 314	Organic Chemistry II	4-5
& CHEM 318	and Organic Chemistry Lab II	
or BIOL 483	General Biochemistry	
~~**Physics**~~		
~~PHYS 243~~	~~College Physics I (Mason Core)~~	~~4~~
~~& PHYS 244~~	~~and College Physics I Lab (Mason Core)~~	
~~PHYS 245~~	~~College Physics II (Mason Core)~~	~~4~~
~~& PHYS 246~~	~~and College Physics II Lab (Mason Core)~~	
Total Credits		9-10

~~Note for Students Expecting to Enter Graduate or Professional School~~

~~Students expecting to enter graduate or professional school are strongly encouraged to complete:~~

~~MATH 113~~	~~Analytic Geometry and Calculus I (Mason Core)~~	~~8~~
~~& MATH 114~~	~~and Analytic Geometry and Calculus II~~	

~~CHEM 313 & CHEM 315~~	~~Organic Chemistry I and Organic Chemistry Lab I~~	~~5~~
~~CHEM 314 & CHEM 318~~	~~Organic Chemistry II and Organic Chemistry Lab II~~	~~5~~
~~PHYS 243 & PHYS 244~~	~~College Physics I (Mason Core) and College Physics I Lab (Mason Core)~~	~~4~~
~~PHYS 245 & PHYS 246~~	~~College Physics II (Mason Core) and College Physics II Lab (Mason Core)~~	~~4~~

Retroactive Requirements Updates:

Elective changes retroactive to Fall 2012.

Plan of Study:

Honors Information:

Honors in the Major

Admissions

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

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

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

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 toward 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

Program Outcomes

Additional Program Information

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

Courses offered via distance (if applicable):

What is the primary delivery format for the program?

Face-to-Face Only

Does any portion of this program occur off-campus?

No

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

No

Related Departments

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

No

Are you adding or removing a licensure component?

No

Additional SCHEV & SACSCOC Information

Is this change a simple retitling of an existing program, with no other changes, to any existing program content, curriculum requirements, etc?

No

Does this change represent a repackaging of content in an existing approved degree/certificate program at the same instructional level (i.e., baccalaureate, master's, or doctoral)?

No

Percentage of total credits containing new course content. ("New course content" is defined by SACSCOC as content that is not currently included in an existing approved degree/certificate program at the same instructiona level. Do not exclude gen ed credits in calculations for undergraduate programs.)

0%-24%

Does this change include the addition of a distance education or face-to-face method of delivery for this program?

No

Does this change include the addition of a course/credit-based competency-based education delivery option?

No

Will any additional equipment/facilities be needed?

No

Will any additional faculty be required?

No

Will any additional financial resources be needed?

No

Additional library/learning resources needed?

No

OAPI Use Only – Determination of SACSCOC Impact

Comments or Notes

Green Leaf Program Designation

Is this a Green Leaf program? No

Does this program cover material which crosses into another department?

No

Additional Attachments

SCHEV Proposal

Executive Summary

Reviewer Comments

Additional Comments

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

%wi_required.eschtml%

Key: 16