# BIOLOGY, BA

**Banner Code: SC-BA-BIOL**

**Academic Advising**

1200 Exploratory Hall
Fairfax Campus

Website: https://science.gmu.edu/academics/departments-units/biology/biology-ba

The Bachelor of Arts in Biology provides a sound liberal arts education with substantial experience in quantitative and analytical thought, along with preparation for related professions. The program provides the strong background necessary for not only graduate study in the life sciences, but also enables students to develop careers in a wide variety of disciplines, including teaching, environmental management, microbiology, molecular biology, biotechnology, genetics, wildlife management, fisheries biology, and marine science. Furthermore, our curriculum prepares students for careers in the health sciences including medicine, dentistry, veterinary science, and related allied health disciplines.

## Admissions & Policies

# Admissions

University-wide admissions policies can be found in the Undergraduate Admissions Policies (https://catalog.gmu.edu/admissions/undergraduate-policies/) section of this catalog.

To apply for this program, please complete the George Mason University Admissions Application (https://www2.gmu.edu/admissions-aid/apply-now/).

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 (https://catalog.gmu.edu/colleges-schools/science/biology/biology-bs/) are great options for students early in their undergraduate studies.

# Policies

Students must fulfill all Requirements for Bachelor's Degrees (https://catalog.gmu.edu/policies/academic/undergraduate-policies/#ap-5-3-2), including the Mason Core (https://catalog.gmu.edu/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) (https://catalog.gmu.edu/mason-core/) or MLAB 300 Science Writing (Mason Core) (https://catalog.gmu.edu/mason-core/).

- For post-baccalaureate students enrolled in the Biological Health concentration, BIOL 308 Foundations of Ecology and Evolution (Mason Core) (https://catalog.gmu.edu/mason-core/) or MLAB 300 Science Writing (Mason Core) (https://catalog.gmu.edu/mason-core/) are not required.

Post-baccalaureate students entering this program are advised to explore the Application for a Second Bachelor's Degree (https://catalog.gmu.edu/admissions/undergraduate-policies/#text) and the AP. 5.3.3 (https://catalog.gmu.edu/policies/academic/undergraduate-policies/#ap-5-3-3) sections of this catalog.

Important information and departmental policies are listed with the Department of Biology (https://catalog.gmu.edu/colleges-schools/science/biology/).

For policies governing all undergraduate programs, see AP.5 Undergraduate Policies (https://catalog.gmu.edu/policies/academic/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.

## 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 (https://catalog.gmu.edu/colleges-schools/education-human-development/school-education/secondary-education-biology-6-12-undergraduate-certificate/) offered by the College of Education and Human Development (https://catalog.gmu.edu/colleges-schools/education-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 (https://catalog.gmu.edu/colleges-schools/education-human-development/school-education/curriculum-instruction-med/#acceleratedmasterstext) (Secondary Education Biology Concentration) or select traditional Master's programs. Please contact the undergraduate advisor in the College of Education and Human Development (https://catalog.gmu.edu/colleges-schools/education-human-development/) for more information.

# Requirements

## Degree Requirements

Total credits: minimum 120

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.

### Biology Core Courses

| Code | Title | Credits |
|---|---|---|
| BIOL 102 | Introductory Biology I-Survey of Biodiversity and Ecology (Mason Core) (https://catalog.gmu.edu/mason-core/) | 4 |
| BIOL 103 & BIOL 105 | Introductory Biology II-Survey of Cell and Molecular Biology (Mason Core) (https://catalog.gmu.edu/mason-core/) and Introductory Biology II Laboratory (Mason Core) (https://catalog.gmu.edu/mason-core/) [1] | 4 |
| BIOL 213 | Cell Structure and Function | 4 |
| BIOL 308 | Foundations of Ecology and Evolution (Mason Core) (https://catalog.gmu.edu/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) (https://catalog.gmu.edu/mason-core/), BIOL 105 Introductory Biology II Laboratory (Mason Core) (https://catalog.gmu.edu/mason-core/), BIOL 300 BioDiversity, BIOL 308 Foundations of Ecology and Evolution (Mason Core) (https://catalog.gmu.edu/mason-core/) are not required.
2. Fulfills the writing intensive requirement.

### Supporting Core Courses

| Code | Title | Credits |
|---|---|---|
| **Chemistry** | | |
| CHEM 211 & CHEM 213 | General Chemistry I (Mason Core) (https://catalog.gmu.edu/mason-core/) and General Chemistry Laboratory I (Mason Core) (https://catalog.gmu.edu/mason-core/) | 4 |
| CHEM 212 & CHEM 214 | General Chemistry II (Mason Core) (https://catalog.gmu.edu/mason-core/) and General Chemistry Laboratory II (Mason Core) (https://catalog.gmu.edu/mason-core/) | 4 |
| **Mathematics** | | |
| Select one option from the following: | | 4-6 |
| MATH 111 | Linear Mathematical Modeling (Mason Core) (https://catalog.gmu.edu/mason-core/) | |
| MATH 113 | Analytic Geometry and Calculus I (Mason Core) (https://catalog.gmu.edu/mason-core/) | |
| MATH 123 & MATH 124 | Calculus with Algebra/Trigonometry, Part A and Calculus with Algebra/Trigonometry, Part B (Mason Core) (https://catalog.gmu.edu/mason-core/) | |
| **Computer Science** | | **3** |
| Select one from the following: [1] | | |
| CDS 130 | Computing for Scientists (Mason Core) (https://catalog.gmu.edu/mason-core/) [2] | |
| Any course(s) that fulfill the Mason Core: Information Technology requirement (https://catalog.gmu.edu/mason-core/#information-technology) | | |
| **Additional Science** | | |
| Select 6 credits from the following: | | 6 |
| ASTR 103 | Astronomy (Mason Core) (https://catalog.gmu.edu/mason-core/) | |
| ASTR 111 | The Solar System (Mason Core) (https://catalog.gmu.edu/mason-core/) | |
| ASTR 113 | Stars, Galaxies, and the Universe (Mason Core) (https://catalog.gmu.edu/mason-core/) | |
| GEOL 101 | Physical Geology (Mason Core) (https://catalog.gmu.edu/mason-core/) | |
| GEOL 102 | Historical Geology (Mason Core) (https://catalog.gmu.edu/mason-core/) | |
| PHYS 160 | University Physics I (Mason Core) (https://catalog.gmu.edu/mason-core/) | |
| PHYS 243 | College Physics I (Mason Core) (https://catalog.gmu.edu/mason-core/) [3] | |
| PHYS 244 | College Physics I Lab (Mason Core) (https://catalog.gmu.edu/mason-core/) [3] | |
| PHYS 245 | College Physics II (Mason Core) (https://catalog.gmu.edu/mason-core/) [3] | |
| PHYS 246 | College Physics II Lab (Mason Core) (https://catalog.gmu.edu/mason-core/) [3] | |
| PHYS 260 | University Physics II (Mason Core) (https://catalog.gmu.edu/mason-core/) | |
| **Total Credits** | | **21-23** |

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.
3. Required for students enrolled in the Biological Health Concentration.

### Biology Elective Options

| Code | Title | Credits |
|---|---|---|
| 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) (https://catalog.gmu.edu/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.

## 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.

| Code | Title | Credits |
|---|---|---|
| Select 15 credits from the following: | | 15 |
| AVT 222 | Drawing I (Mason Core) (https://catalog.gmu.edu/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 | |
| **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.

| Code | Title | Credits |
|---|---|---|
| **Additional Chemistry** | | |
| 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 | 4-5 |
| or BIOL 483 | General Biochemistry | |
| **Total Credits** | | **9-10** |

## Mason Core and Elective Requirements

In order to meet a minimum of 120 credits, this degree requires an additional credits (specific credit counts by concentration are shown below), which may be applied toward any remaining Mason Core (https://catalog.gmu.edu/mason-core/) requirements (outlined below), Requirements for Bachelor's Degrees (https://catalog.gmu.edu/policies/academic/undergraduate-policies/#ap-5-3-2), College Requirements for the BA Degree (outlined below), and elective courses. Students are strongly encouraged to consult with their advisors to ensure that they fulfill all requirements.

- Without concentration: 64-71 credits
- BIOI concentration: 49-56 credits
- BIOH concentration: 54-62 credits

### Mason Core

Some Mason Core (https://catalog.gmu.edu/mason-core/) requirements may already be fulfilled by the major requirements listed above. Students are strongly encouraged to consult their advisors to ensure they fulfill all remaining Mason Core (https://catalog.gmu.edu/mason-core/) requirements.

Students who have completed the following credentials are eligible for a waiver of the Foundation and Exploration (lower level) requirement categories. The Integration category (upper level) is not waived under this policy. See Admissions (https://catalog.gmu.edu/admissions/undergraduate-policies/#transfertext) for more information.

- VCCS Uniform Certificate of General Studies
- VCCS or Richard Bland Associate of Science (A.S.), Associate of Arts (A.A.), Associate of Arts and Sciences (A.A.&S.), or Associate of Fine Arts (A.F.A.)

| Code | Title | Credits |
|---|---|---|
| **Foundation Requirements** | | |
| Written Communication (lower-level) (https://catalog.gmu.edu/mason-core/#written) | | 3 |
| Oral Communication (https://catalog.gmu.edu/mason-core/#oral) | | 3 |
| Quantitative Reasoning (https://catalog.gmu.edu/mason-core/#quantitative) | | 3 |
| Information Technology and Computing (https://catalog.gmu.edu/mason-core/#information-technology) | | 3 |
| **Exploration Requirements** | | |
| Arts (https://catalog.gmu.edu/mason-core/#arts) | | 3 |
| Global Contexts (https://catalog.gmu.edu/mason-core/#global-contexts) | | 3 |
| Global History (https://catalog.gmu.edu/mason-core/#global-history) | | 3 |
| Literature (https://catalog.gmu.edu/mason-core/#literature) | | 3 |
| Natural Science (https://catalog.gmu.edu/mason-core/#natural-science) | | 7 |
| Social and Behavioral Sciences (https://catalog.gmu.edu/mason-core/#social-behavioral-science) | | 3 |
| Just Societies (optional) (https://catalog.gmu.edu/mason-core/#justsocieties) [1] | | |
| **Integration Requirements** | | |
| Written Communication (upper-level) (https://catalog.gmu.edu/mason-core/#written) | | 3 |
| Writing Intensive (https://catalog.gmu.edu/mason-core/#wi) [2] | | 3 |
| Mason Apex (https://catalog.gmu.edu/mason-core/#apex) [3] | | 3 |
| **Total Credits** | | **40** |

[1] In addition to covering content related to the designated category, Exploration level courses marked with a Just Societies "flag" are specifically designed to help students learn how to interact effectively with others from all walks of life, including those with backgrounds and beliefs that differ from their own. Students who wish to increase their knowledge and skills in this area may choose to enroll in a Just

Societies-flagged course. Students interested in this approach to completing their Mason Core Exploration Requirements should work closely with their advisor to identify the appropriate Just Societies-flagged courses.

2 Most programs include the writing-intensive course designated for the major as part of the major requirements; this course is therefore not counted towards the total required for Mason Core.

3 Minimum 3 credits required.

## College Requirements for the BA Degree

In addition to the program requirements and the Mason Core (https://catalog.gmu.edu/mason-core/) requirements, students pursuing a BA degree must complete the coursework below. Except where expressly prohibited, a course used to fulfill this college-level requirement may also be used simultaneously to satisfy other requirements such as Mason Core (https://catalog.gmu.edu/mason-core/) requirements, other college-level requirements, or requirements for the major. In some cases, the requirements listed below may be superseded by requirements of the degree program and the Mason Core (https://catalog.gmu.edu/mason-core/).

### Foundational Breadth

Choose two courses from approved Mason Core: Arts (https://catalog.gmu.edu/mason-core/#arts), Mason Core: Literature (https://catalog.gmu.edu/mason-core/#literature), Mason Core: Global Contexts (https://catalog.gmu.edu/mason-core/#global-contexts), and Mason Core: Social and Behavioral Sciences (https://catalog.gmu.edu/mason-core/#social-behavioral-science) courses in addition to those required by the Mason Core (https://catalog.gmu.edu/mason-core/). The two courses used to fulfill the college-level requirements must each be from different Mason Core categories. Additionally, they must be from different disciplines than the courses used to fulfill the University Mason Core requirements.

### Natural Science

Choose one credit in addition to the Mason Core: Natural Science (https://catalog.gmu.edu/mason-core/#natural-science) requirement for a total of 8 credits[1]. This combined college-level and university requirement must be fulfilled by completing two of any approved Mason Core: Natural Science (https://catalog.gmu.edu/mason-core/#natural-science) courses that include a laboratory experience[2].

| Code | Title | Credits |
|---|---|---|
| Select an additional Mason Core Natural Science course | | 1 |

1 For Geography, BA majors, this extra credit is not required.

2 BIOL 124 Human Anatomy and Physiology I and BIOL 125 Human Anatomy and Physiology II may not be used to fulfill this requirement.

### Foreign Language

| Code | Title | Credits |
|---|---|---|
| Intermediate-level proficiency in one foreign language is required and may be fulfilled via one of the options below: [1] | | |
| 1. Completing a course in a foreign language numbered 202 (or its equivalent), or higher level courses taught in the language. | | |
| 2. Achieving a satisfactory score on an approved proficiency test. | | |
| 3. Completing a three course sequence in American Sign Language: | | |
| EDSE 115 | American Sign Language (ASL) I | |
| EDSE 116 | American Sign Language (ASL) II | |
| EDSE 219 | American Sign Language (ASL) III | |
| 4. Conferral of a baccalaureate degree. [2] | | |

1 Students who are already proficient in a second language may be eligible for a waiver of this requirement. Additional information on waivers can be found with the college's Office of Academic and Student Affairs (http://cosundergrad.gmu.edu/).

2 This option is only available to students in the Biology, BA with a concentration in Biological Health who have already conferred a baccalaureate degree.

# Honors

# 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 (https://catalog.gmu.edu/colleges-schools/science/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

## Accelerated Master's

# Biology, BA or BS/Secondary Education, Accelerated MEd (Secondary Education - Science Concentration)

## Overview

Highly-qualified undergraduates may be admitted to the bachelor's/accelerated master's program and obtain a BA or BS in Biology (https://catalog.gmu.edu/colleges-schools/science/biology/biology-bs/) (degree without concentration) and an MEd in Secondary Education (Secondary Education - Science concentration) (https://catalog.gmu.edu/colleges-schools/education-human-development/school-education/secondary-education-med/) in an accelerated time-frame after satisfactory completion of a minimum of 143 credits.

See AP.6.7 Bachelor's/Accelerated Master's Degree (https://catalog.gmu.edu/policies/academic/graduate-policies/#ap-6-7) for policies related to this program.

This accelerated option is offered jointly by the Biology Undergraduate Program (https://catalog.gmu.edu/colleges-schools/science/biology/) and the School of Education (https://catalog.gmu.edu/colleges-schools/education-human-development/school-education/).

Students in an accelerated degree program must fulfill all university requirements for the master's degree. For policies governing all graduate degrees, see AP.6 Graduate Policies (https://catalog.gmu.edu/policies/academic/graduate-policies/#text).

## BAM Pathway Admission Requirements

Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in Graduate Admissions Policies (https://catalog.gmu.edu/admissions/graduate-policies/) and Bachelor's/Accelerated Master's Degree (https://catalog.gmu.edu/policies/academic/graduate-policies/#ap-6-7) policies. For information specific to this accelerated master's program, see Application Requirements and Deadlines (https://cehd.gmu.edu/bachelors-accelerated-masters-program/).

Students will be considered for admission into the BAM Pathway after completion of a minimum of 60 credits, and additional unit-specific criteria.

Students who are accepted into the BAM Pathway will be allowed to register for graduate level courses after successful completion of a minimum of 75 undergraduate credits and course-specific pre-requisites.

## Accelerated Master's Admission Requirements

Students already admitted in the BAM Pathway will be admitted to the MEd program, if they have met the following criteria, as verified on the Bachelor's/Accelerated Master's Transition form:

- 3.0 overall GPA
- Completion of specific undergraduate coursework
- Successfully meeting Mason's requirements for undergraduate degree conferral (graduation) and completing the application for graduation.

## Accelerated Pathway Requirements

To maintain the integrity and quality of both the undergraduate and graduate degree programs, undergraduate students interested in taking graduate courses must choose from the following which can be taken as Advanced Standing or Reserve Graduate credit (https://catalog.gmu.edu/policies/academic/graduate-policies/#text) (to be determined by the student and their advisor):

| Code | Title | Credits |
|---|---|---|
| EDRD 619 | Literacy Across the Disciplines | 3 |
| EDUC 545 | Teaching Science and Engineering Practices | 3 |
| SEED 522 | Foundations of Secondary Education | 3 |
| SEED 540 | Human Development and Learning: Secondary Education | 3 |
| SEED 573 | Teaching Science in the Secondary School | 3 |
| SEED 673 | Advanced Methods of Teaching Science in the Secondary School | 3 |
| One of the following: | | |
| SEED 507 | Assessing Learning and Teaching in the Secondary Classroom | |
| SEED 508 | Creating Advocacy with Adolescent Learners | |
| SEED 509 | Perspectives on Extraordinary Teaching | |
| SEED 510 | Secondary Education in International Contexts | |

For more detailed information on coursework and timeline requirements, see AP.6.7 Bachelor's/Accelerated Master's Degree (https://catalog.gmu.edu/policies/academic/graduate-policies/#ap-6-7) policies.