

# BIOLOGY AREA OF CONCENTRATION WITHIN STEM A.S. (TRANSFER)

Program website ([https://www.frederick.edu/programs/science,-technology,-engineering,-and-math-\(stem\)/biology.aspx](https://www.frederick.edu/programs/science,-technology,-engineering,-and-math-(stem)/biology.aspx))

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## Program Description

Provides the courses typically required of biology majors during their first two years of college. Students who earn degrees in biology go on to work in many different fields including: health care professions, pharmaceuticals, biotechnology, wildlife biology, environmental biology, ecology, research, and teaching. Students interested in courses of study such as pre-medical, pre-dental, pre-veterinary, pre-pharmacy, pre-physician assistant, or other related programs should follow the STEM A.S. Degree: Biology or Chemistry Area of Concentration and meet with an academic advisor.

## Program Learning Outcomes

- Articulate central themes of discipline.
- Apply science as a process.
- Demonstrate scientific inquiry (e.g. use models).
- Communicate scientific knowledge.
- Integrate discipline specific technology.
- Demonstrate appropriate quantitative skills.
- Analyze science's role in society.

## Program Requirements

- Students must complete their credit **English and Mathematics** within the first 24 credits.
- One course must meet the cultural competence graduation requirement (<https://frederick-public.courseleaf.com/general-education-core/#cultural>).
- **CORE: The General Education CORE** is that foundation of the higher education curriculum providing a coherent intellectual experience for all students. Students should check with an advisor or the transfer institution (ARTSYS) before selecting General Education CORE requirements. <http://artsys.usmd.edu/>
- In some General Education categories (Mathematics, Biological & Physical Sciences), a 4-credit course selected from the GenEd course list will satisfy the requirement in place of a 3-credit course. Students should check with an advisor before selecting these courses.
- For the Physical Education, Health, or Nutrition requirement, a 3-credit PHED, HLTH, or NUTR course may satisfy the requirement in place of a 1-credit course. Students should check with an advisor before selecting this course.
- Students must earn a grade of "C" or better in ENGL 101 English Composition.
- Students must complete a minimum of nine credits at the 200-level.

Code	Title	Credits
<b>English</b>		
ENGL 101	English Composition	3
<b>Mathematics</b>		
MATH 185	Calculus I	4
<b>Social &amp; Behavioral Sciences</b>		
Social & Behavioral Sciences Elective (Gen Ed course list) ( <a href="https://frederick-public.courseleaf.com/general-education-core/#social-behavioral">https://frederick-public.courseleaf.com/general-education-core/#social-behavioral</a> ) - select two courses from different disciplines		6
<b>Arts &amp; Humanities</b>		
Arts Elective (Gen Ed course list) ( <a href="https://frederick-public.courseleaf.com/general-education-core/#arts">https://frederick-public.courseleaf.com/general-education-core/#arts</a> )		3
Humanities Elective (Gen Ed course list) ( <a href="https://frederick-public.courseleaf.com/general-education-core/#humanities">https://frederick-public.courseleaf.com/general-education-core/#humanities</a> )		3
Communication Elective (Gen Ed course list) ( <a href="https://frederick-public.courseleaf.com/general-education-core/#communication">https://frederick-public.courseleaf.com/general-education-core/#communication</a> )		3
<b>Biological &amp; Physical Sciences</b>		
CHEM 101	General Chemistry I	4
BSCI 150	Principles of Biology I	4
<b>General Education Elective</b>		
General Education Elective (Gen Ed course list) ( <a href="https://frederick-public.courseleaf.com/general-education-core/#general">https://frederick-public.courseleaf.com/general-education-core/#general</a> )		3
<b>Physical Education, Health, or Nutrition Requirement</b>		
Select one PHED, HLTH, or NUTR course		1
<b>Concentration Courses</b>		
BSCI 160	Principles of Biology II	4
CHEM 102	General Chemistry II	4
CHEM 201	Organic Chemistry I	4
CHEM 202	Organic Chemistry II	4
BSCI 240	Genetics (Spring)	4
<b>Electives</b>		
Select six credits in consultation with an advisor. <sup>1</sup>		6
PHYS 121	Fundamentals of Physics I (Fall) (recommended)	
PHYS 151	General Physics I (recommended)	
MATH 195	Calculus II (recommended)	
Total Credits		60

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Students transferring to University of Maryland-Shady Grove must take BSCI 263 Elements of Microbiology or BSCI 223 Microbiology for Allied Health at FCC, as it is not offered at Shady Grove.

## Transfer Note

For more information on careers and transfer, contact the Career and Academic Planning Services office at 301.846.2471 or visit Transfer Services (<https://www.frederick.edu/student-resources/counseling-advising/transfer-services.aspx>).

## Guided Pathway to Success (GPS)

Suggested schedules map your path to degree completion.

Students should meet with an advisor each semester to carefully select and sequence courses based on their specific academic goals and interests. Visit Jefferson Hall or call 301.846.2471 for advising.

Recommended First Semester		Credits
ENGL 101	English Composition <sup>1</sup>	3
MATH 185	Calculus I <sup>1,2</sup>	4
CHEM 101	General Chemistry I (Milestone)	4
BSCI 150	Principles of Biology I	4
Credits		15

## 2 Biology Area of Concentration within STEM A.S. (Transfer)

### Recommended Second Semester

Humanities Elective (Gen Ed course list) ( <a href="https://frederick-public.courseleaf.com/general-education-core/#humanities">https://frederick-public.courseleaf.com/general-education-core/#humanities</a> )	3
Select one of the following in consultation with an advisor:	3-4
MATH 195      Calculus II	
PHYS 121      Fundamentals of Physics I (Fall) (recommended)	
PHYS 151      General Physics I (recommended)	
BSCI 263      Elements of Microbiology (Fall) <sup>3</sup>	
BSCI 223      Microbiology for Allied Health <sup>3</sup>	
BSCI 160      Principles of Biology II (Milestone)	4
CHEM 102      General Chemistry II	4
Physical Education, Health, or Nutrition Requirement	1
Credits	15-16

Fall, Spring, Summer - courses with a Fall, Spring, or Summer notation indicate the course is offered in the specified semester only.

### Recommended Third Semester

Social & Behavioral Sciences Elective (Gen Ed course list) ( <a href="https://frederick-public.courseleaf.com/general-education-core/#social-behavioral">https://frederick-public.courseleaf.com/general-education-core/#social-behavioral</a> )	3
Communication Elective (Gen Ed course list) ( <a href="https://frederick-public.courseleaf.com/general-education-core/#communication">https://frederick-public.courseleaf.com/general-education-core/#communication</a> )	3
CHEM 201      Organic Chemistry I (Milestone)	4
Select an elective in consultation with an advisor:	3-4
PHYS 121      Fundamentals of Physics I (Fall) (recommended)	
PHYS 151      General Physics I (recommended)	
BSCI 263      Elements of Microbiology (Fall) <sup>3</sup>	
BSCI 223      Microbiology for Allied Health <sup>3</sup>	
Arts Elective (Gen Ed course list) ( <a href="https://frederick-public.courseleaf.com/general-education-core/#arts">https://frederick-public.courseleaf.com/general-education-core/#arts</a> )	3
Credits	16-17

### Recommended Fourth Semester

BSCI 240      Genetics (Spring)	4
CHEM 202      Organic Chemistry II	4
Social & Behavioral Sciences Elective (Gen Ed course list) ( <a href="https://frederick-public.courseleaf.com/general-education-core/#social-behavioral">https://frederick-public.courseleaf.com/general-education-core/#social-behavioral</a> ) (in a different discipline from the first)	3
General Education Elective (Gen Ed course list) ( <a href="https://frederick-public.courseleaf.com/general-education-core/#general">https://frederick-public.courseleaf.com/general-education-core/#general</a> )	3
Credits	14
Total Credits	60-62

### 1

Take this course within the first 24 credits.

### 2

Students who have not taken MATH 165 Precalculus should take it as an elective in the first semester before starting the Calculus sequence.

### 3

BSCI 263 Elements of Microbiology or BSCI 223 Microbiology for Allied Health required for University of Maryland – Shady Grove.

## Part-time Students

Part-time students should complete courses in the order listed on the pathway. Please contact program manager for questions about part-time status.

Students who take fewer than 15 credits each semester or who require developmental English or Math coursework will need additional semesters to complete their degrees. Summer term and January session classes may help students to make faster progress.

### Pathway Legend

Milestone - courses with the Milestone notation should be taken within the recommend credit range to stay on track for program completion.