

# 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))

## 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 |

1

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      |
| Recommended Second Semester  |  | Credits |
| 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) |         |

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|   |  |       |
|---|--|-------|
| 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 |
| <b>Recommended Third Semester</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> )  |  | 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 |
| <b>Recommended Fourth Semester</b>  |  |       |
| 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.

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