Rensselaer

BIOLOGY B.S. – FALL 2024

This vast field examines the structure, function, growth, origin, evolution, and distribution of living things. Students obtain knowledge in a diverse range of biological sub-disciplines, including molecular and cellular-level biology or ecology and evolution. Together, the curriculum provides a strong background in quantitative, physical, and chemical biology.

FIRST YEAR

Fall '24			Spring '25		
Number	Course	CR	Number	Course	CR
BIOL 1010	Introduction to Biology[1]	3	BIOL 2120	Introduction to Cell & Molecular Biology[1]	3
BIOL 1015 **or** BIOL 1016	Introduction to Biology Lab **or** Intro to Computational Biology Lab[2]	1	BIOL 2125	Intro to Cell & Molecular Biology Lab	1
CHEM 1110	Chemistry I with Advanced Lab	4	CHEM 1200	Chemistry II	4
MATH 1010	Calculus I	4	MATH 1020	Calculus II	4
	HASS Core Elective[3]	4		HASS Core Elective[3]	4

SECOND YEAR

Fall '25			Spring '26		
Number	Course	CR	Number	Course	CR
BIOL 2500	Genetics and Evolution	4	BIOL 4620	Molecular Biology	4
CHEM 2230	Organic Chemistry Lab I	1	CHEM 2240	Organic Chemistry Lab II	1
CHEM 2250	Organic Chemistry I	3	CHEM 2260	Organic Chemistry II	3
PHYS 1100	Physics I	4	PHYS 1200	Physics II	4
	HASS Core Elective[3]	4		HASS Core Elective[3]	4

THIRD YEAR (WITH 3RD YEAR FALL SEMESTER AWAY)

The Arch Summer Semester[4] '26			Spring '27		
Number	Course	CR	Number	Course	CR
BIOL 4760	Molecular Biochemistry I[5]	4	BIOL 4200	Biostatistics	4
BIOL	Advanced Lab Option[6]	6	BIOL	Biology Elective[8]	4
	Free Elective[7]	2		Free Elective	4
	HASS Core Elective[3]	4		HASS Core Elective[3]	4

FOURTH YEAR (WITH 3RD YEAR FALL SEMESTER AWAY)

Fall '27			Spring '28		
Number	Course	CR	Number	Course	CR
BIOL	Biology Elective[8]	4	BIOL	Biology Elective[8]	4
	Free Elective	4	BIOL	Biology Elective[8]	4
	Free Elective	4		Free Elective	4
	Free Elective	4		Free Elective	4

THIRD YEAR (WITH 3RD YEAR SPRING SEMESTER AWAY)

The Arch Summer Semester[4] '26			Fall '26		
Number	Course	CR	Number	Course	CR
BIOL 4200	Biostatistics	4	BIOL 4760	Molecular Biochemistry I[5]	4
BIOL	Biology Elective[8]	4	BIOL	Advanced Lab Option[6]	6
	Free Elective	4		Free Elective[7]	2
	HASS Core Elective[3]	4		HASS Core Elective[3]	4

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FOURTH YEAR (WITH 3RD YEAR SPRING SEMESTER AWAY)

Fall '27			Spring '28		
Number	Course	CR	Number	Course	CR
BIOL	Biology Elective[8]	4	BIOL	Biology Elective[8]	4
	Free Elective	4	BIOL	Biology Elective[8]	4
	Free Elective	4		Free Elective	4
	Free Elective	4		Free Elective	4

This curriculum requires a minimum of 128 credit hours.

FOOTNOTES

1. Students who apply Advanced Placement credits in place of BIOL 1010/1015 may take BIOL 2120 & BIOL 2125 in its place.
2. Students must take 1 of the following Laboratory courses alongside BIOL 1010 Introduction to Biology: BIOL 1015 Introduction to Biology Laboratory **OR** BIOL 1016 Introduction to Biology Computational Laboratory. Biology, Biochemistry and Biophysics, Biological Neuroscience majors, and/or students seeking a hands-on wet-lab experience are recommended to register for BIOL 1015. Computational Biology majors, Non-biology students, and/or students who seek to enhance their skills in data analysis are recommended to register for BIOL 1016. Students cannot get credit for both BIOL 1015 and 1016.
3. **Humanities and Social Sciences (HASS) Core Electives:** A total of 24 credits of HASS Core Electives should be taken. Students should take an Inquiry course during their first year. For a listing of HASS Inquiry courses go to: https://info.rpi.edu/hass-inquiry. In addition, students should take a HASS Communications Intensive course during their first three semesters.
4. For students who have applied for and been granted an exception, The Arch Summer courses would be taken during the fall semester. For listing of the exception process go to: http://info.rpi.edu/arch/students/#ExceptionProcess
5. Cannot be satisfied with transfer credits.
6. Communication Intensive and Culminating Experience Requirement cannot by satisfied with transfer credits and must be fulfilled via the **Advanced Laboratory requirement**.
7. An additional 2-CR elective may be satisfied by mentoring, research (e.g. BIOL 2900, 2930, 2940, 4940, 4970), or any other elective. This credit may be taken at any time, not necessarily at the time shown in the template.
8. **Biology Elective Requirement (16 Credits):** Biology electives may include any BIOL courses, and up to 1 BCBP course. No 1000 or 2000 level courses can serve as Biology electives. Only 4 credits from research courses may count toward this requirement (Students must be enrolled in a minimum of 2 research credits in a semester to count towards this requirement). No more than one 4000-level elective can be met with transfer credits

BIOLOGY ELECTIVES

Careful selection of biology electives in the third and fourth years may contribute significantly to preparation for various professional goals. Students who anticipate working on a senior thesis are strongly urged to take BIOL 4200 Biostatistics as soon as possible and one of the following advanced laboratory courses (BIOL 4320, 4710, BIOL 4720, BIOL 4740) in their junior year, since these courses offer excellent preparation for independent laboratory work. and meet the communication intensive requirement.

ADVANCED LABORATORY COURSES

BIOL 4320	Microbiology Laboratory	BIOL 4720	Molecular Biology Laboratory
BIOL 4710	Biochemistry Laboratory	BIOL 4740	Adv. Cell Biology Laboratory