

Biology Major Requirements

Total hours required for degree: 128

	Credit Hours	Year Taken
General Education Core	28-46	1, 2, 3, or 4

Biology Major Course Requirements

Essentials of Biology

BIO 211 General Biology I	4	1
BIO 212 General Biology II	4	1
BIO 231 Research Methods in Biology I	3	1
BIO 232 Research Methods in Biology II	3	2
Total	14	

Foundations of Biology (five courses)

Cellular/Molecular Biology (select one course)

BIO 321 Genetics	4	2 or 3
BIO 327 Cell Biology	4	2 or 3

Population Biology (select one course)

BIO 323 Principles of Ecology	4	2, 3 or 4
BIO 329 Evolution	3	2, 3 or 4

Structural/Functional Biology (select one course)

BIO 322 Developmental Biology	4	2, 3 or 4
BIO 324 Animal Physiology	4	2, 3 or 4

Organismal Biology (BIO325 Botany and one other course)

BIO 325 Botany and (select one course)	4	2 or 3
BIO 432 Principles of Microbiology	4	3 or 4
BIO 433 Parasitology	4	3 or 4
BIO 434 Mycology	4	3 or 4
BIO 435 Entomology	4	3 or 4
BIO 436 Biology of Vertebrates	4	3 or 4
Total	19-20	

Upper Level Biology Electives

Biology Elective Courses at the 300, 400, or 500 level*	11	3 or 4
Total	11	

Integrated Biological Experience (select one course)

BIO 450 Senior Research in Biology	3	4
BIO 470 Practicum in Biology	3	4
BIO 495 Senior Seminar	3	4
Total	3	

Total Biology Coursework: 47-48

Major Related Course Requirements*

CHE 211 and CHE 212	8	1 or 2
PHY 151 and PHY 152 or PHY261 and PHY262	8	2 or 3
MAT 112, PSY/SOC 211, or MAT 201	3	1, 2, or 3
Total	19	

Total Major-related Coursework: 19

Total Hours Required in Major: 66-67

*Students should check to determine if these courses require prerequisites. Students may select any 300-400 level elective courses that are not being used to satisfy other degree requirements. 500 level courses require permission of instructor.

Electives

The student must complete sufficient elective courses to earn at least the minimum credits hours for this degree and at least 64 credits of the 128 required must be in the liberal arts and sciences.

Areas of Emphasis

Biology majors and their advisors can tailor the curriculum to help prepare them for their future goals, for example:

Pre-professional and Academic: This emphasis should satisfy the needs of students intending to apply to professional or graduate schools and should include Organic Chemistry (CHE 332 and 332), Calculus (MAT 201), and two semesters of a foreign language. MAT 201 may be required by some professional or graduate schools.

Educational: This concentration encourages those students intending to be secondary or elementary school teachers to meet state certification requirements in areas in addition to biology (i.e. earth science and general science). Students take education and science courses in areas where certification is desired.

General: This emphasis adds flexibility through sampling courses outside the field of biology. Students take six hours of non-biological science courses.

Biology Honors: In order to be considered for Honors in Biology, the following requirements must be satisfied.

1. The student must have Biology GPA of at least 3.4 in all Biology courses taken at Utica College and an overall GPA of at least 3.0.
2. The student must take BIO 450 in their junior or senior year and present their findings at the Annual Undergraduate Research Conference.
3. The Biology Faculty will evaluate the student's credentials and then select those who shall receive Honors. The student's participation in departmental activities will also be considered.
4. If a student wishes to be considered, they must apply by 14 April of their senior year.

For those students selected, the transcript will read *Bachelor of Science with Honors in Biology*.