BIOLOGICAL SCIENCES (B.S.)

The Bachelor of Science degree is for those students who wish to follow a career in the sciences and/or those planning to enter post-graduate professional schools. Students contemplating a major program in biological sciences should consult with a Departmental undergraduate advisor no later than the beginning of the sophomore year.

Admission Requirements

Admission requirements for this program are satisfied by the general requirements for undergraduate admission (http://bulletins.wayne.edu/undergraduate/general-information/admission/) to the University.

Program Requirements

Candidates must complete 120 credits in course work including satisfaction of the University General Education Requirements (http://bulletins.wayne.edu/undergraduate/general-information/general-education/) and the College of Liberal Arts and Sciences Group Requirements (http://bulletins.wayne.edu/undergraduate/college-liberal-arts-sciences/bachelors-degree-requirements/), as well as the departmental major requirements cited below. All course work must be completed in accordance with the regulations of the University (http://bulletins.wayne.edu/undergraduate/general-information/academic-regulations/) and the College (http://bulletins.wayne.edu/undergraduate/college-liberal-arts-sciences/academic-regulations/) governing undergraduate scholarship and degrees. Students must receive a grade of C-minus or better in all biology courses. A grade point average of 2.0 (C) in both biology and general required courses is required for graduation.

Major Requirements

A minimum of 40 credits of BIO starting at BIO 1500 are required of the major as defined below. Courses through the 6000 level may be elected providing the proper prerequisites have been successfully completed.

Code	Title	Credits
BIO 1500 & BIO 1501	Basic Life Diversity and Basic Life Diversity Laboratory	4
BIO 1510 & BIO 1511	Basic Life Mechanisms and Basic Life Mechanisms Laboratory	4
BIO 2600	Introduction to Cell Biology	4
BIO 2700	Evolution: Basic Concepts and Applications	3
BIO 3070	Genetics [2]	4-5
Students must complete additional coursework in BIO courses to reach 40 credits in BIO. Electives in BIO must be at the 3000 level or above. One course must include an upper level lab. One course must include Scientific Communication. Undergraduate research may be applied up to a max of 6 credits including the research seminar, UG research credits and honors thesis. [1]		
Courses that include upper level labs. BIO 3070 (satisfies the lab requirement only when elected for 5 credits), BIO 3250 & BIO 3251, BIO 3800, BIO 4120, BIO 4130, BIO 4350, BIO 4630, BIO 5040, BIO 5100, BIO 5440, BIO 5610.		
Courses that include Scientific Communication. BIO 4110, BIO 4120, BIO 4130, BIO 4370, BIO 5150, BIO 5240, BIO 5280, BIO 5610/ BIO 5620.		

1 Courses required to complete major requirements listed above cannot also be used as BIO elective credit.

2 If elected for honors credit, BIO 3070 is 5 credits and includes a lab.

Cognate Requirements

Code	Title	Credits
CHM 1100 & CHM 1130	General Chemistry I and General Chemistry I Laboratory	5
CHM 1140 & CHM 1150	General Chemistry II and General Chemistry II Laboratory	5
CHM 1240	Organic Chemistry I	4
CHM 2220	Organic Chemistry II	4
Select one of the following sequences:		10
Option 1		
PHY 2130 & PHY 2131	Physics for the Life Sciences I and Physics for the Life Sciences Laboratory	
PHY 2140 & PHY 2141	Physics for the Life Sciences II and Physics for the Life Sciences Laboratory	
Option 2		
PHY 2170 & PHY 2171	University Physics I for Scientists and Engineers and University Physics I Experimental Laboratory	
PHY 2180 & PHY 2181	University Physics II for Scientists and Engineers and University Physics II Experimental Laboratory	
MAT 2010	Calculus I [1]	4
MAT 2020	Calculus II	4
or STA 2210	Probability and Statistics	

1 Students must start in the appropriate math course based upon placement exam or valid SAT/ACT scores. Students may attempt to place into a higher MAT course by taking the Placement Examination of the Department of Mathematics upon entry into the university.

Biological Sciences Honors (B.A. and B.S. Programs)

The Department participates in the honors program and works with individual students to develop a curriculum that satisfies honors degree requirements. Students interested in an honors degree should contact the departmental honors advisor.

Program Requirements: To achieve honors designation with the Bachelor of Arts or Bachelor of Science in Biological Sciences, students are required to complete all University and major requirements (see above) including fourteen honors credits in Biology and an honors seminar (HON 4200-HON 4280).

The fourteen credits in Biological Sciences are comprised of:

Code	Title	Credits
8 credits of BIO courses with honors [1]		**8**
BIO 1500	Basic Life Diversity	
BIO 1510	Basic Life Mechanisms	
BIO 2600	Introduction to Cell Biology	
BIO 3070	Genetics	
BIO 3100	Cellular Biochemistry	
BIO 3200	Human Physiology	
BIO 3500	Ecology and the Environment	
BIO 6890	Introduction to Research Practice - Honors	1
BIO 6893	Honors Undergraduate Research in Biological Sciences (Student needs 3 credits of honors research (BIO 6891, 6892, 6893, 6894). Credits can be spread across multiple terms but must total a minimum of 3 cr. Honors UG research.)	3

BIO 6999	Honors Undergraduate Research Thesis	2
Total Credits		**14**

Code	Title	Credits
Honors Seminar		**3**
HON 4200	Seminar in Philosophy and Letters	
HON 4230	Seminar in Physical Science	
HON 4250	Seminar: Global Perspectives on Historical Studies	
HON 4260	Seminar in Foreign Culture	
HON 4280	General Honors Seminar	
Total Credits		**3**

To be awarded a BIO honors degree, students must accumulate seventeen honors credits as defined above. Students must also maintain a cumulative g.p.a. of at least a 3.3. Students completing department honors must also maintain a 3.3 g.p.a in BIO coursework.

[1] BIO courses without an honors section may be used if the professor is willing to do an honors option. Paperwork to do an honors option on a course is available from the Honors College.