

## **Biology**

### **Bachelor of Science Degree**

I.	Course Requirements for Major		
A.	Program Requirements		35-36 semester hours
1.	#BIO 141	Basic Concepts of the Cell	4
2.	BIO 241	Animal Biology	4
3.	BIO 242	Plant Biology	4
4.	BIO 342	Genetics	4
5.	BIO ____	Approved Electives	15-16
6.	BIO 395	Junior Seminar I	1
7.	BIO 396	Junior Seminar II	1
8.	BIO 495	Senior Seminar I	1
9.	BIO 496	Senior Seminar II	1
B.	Cognate Requirements		40-41 semester hours
1.	CHE 141	General Chemistry I	4
2.	CHE 142	General Chemistry II	4
3.	CHE 241	Organic Chemistry I	4
4.	CHE 242	Organic Chemistry II	4
5.	#MAT 159	Precalculus	4
	or		4
	#MAT 181	Calculus with Analytic Geometry I	
6.	MAT 174	Data Analysis and Statistics	3
7.	MAT 182	Calculus with Analytic Geometry II (4)	
	or		
	PHI 110	Logic (3)	3-4
	or		
	PHI 210	Symbolic Logic (3)	
8.	MAT 244	Statistical Analysis and Design	3
9.	PHY 141	General Physics I (Non-Calculus Based)	
	or		4
	PHY 161	Physics I (Calculus Based)	
10.	PHY 142	General Physics II (Non-Calculus Based)	
	or		4
	PHY 162	Physics II (Calculus Based)	
11.	TSC 101	Fundamentals of Speech Communication	3
C.	Total for Major		<b>75-77 semester hours</b>
II.	Liberal Arts		<b>28 semester hours</b>
	# May be double counted toward Major and Liberal Arts Requirements.		
III.	General Electives		<b>15-17 semester hours</b>
IV.	Total for Degree		<b>120 semester hours</b>
V.	Other Requirements		
1.	Students majoring in Biology must maintain a 2.1 GPA in all required courses (excluding cognate requirements) in the major.		
2.	Biology majors must complete a 16 hour residency at Siena Heights, 12 semester hours of Siena Heights biology courses at the 300-level or higher, and the Junior and Senior Seminar series (BIO395/396/495/496).		
3.	Students seeking Secondary Certification need only complete an additional 4 semester hours of approved Chemistry electives for a Chemistry minor.		

4. Students who are seeking teacher certification must take as one of the four required Biology electives.
5. Students seeking teacher certification must also complete the appropriate science methods course: BIO 372 (Secondary Science Methods) from the Professional Education Sequence.
6. Students seeking secondary certification in teaching must also take NSC110 Earth Science.

### **Minor in Biology**

- I. Course Requirements for Minor
  - A. Program Requirements 20 semester hours
    1. #BIO 141 Basic Concepts of the Cell 4
    2. BIO 241 Animal Biology 4
    3. BIO 242 Plant Biology 4
    4. BIO 342 Genetics 4
    5. BIO \_\_\_ Approved Elective 4
  - B. Total for Minor **20 semester hours**  
# May be double counted toward Minor and Liberal Arts Requirements.
- II. Other Requirements
  1. Biology minors must complete 8 hours of Siena Heights biology courses at the 300 level or higher.
  2. Students who are seeking teacher certification must take BIO 441 or 443 as the required Biology elective.
  3. Students seeking certification must also complete the appropriate science methods course: BIO 372 (Secondary Science Methods) from the Professional Education Sequence.
  4. Students seeking secondary certification in teaching must also take NSC110 Earth Science.
  5. Students minoring in Biology must maintain a 2.1 GPA in all required courses (excluding cognate requirements in the minor).

### **Biology**

#### **Associate of Science Degree**

- I. Course Requirements for Major
  - A. Program Requirements 20 semester hours
    1. #BIO 141 Basic Concepts of the Cell 4
    2. BIO 241 Animal Biology 4
    3. BIO 242 Plant Biology 4
    4. BIO 342 Genetics 4
    5. BIO \_\_\_ Approved Elective 4
  - B. Cognate Requirements 11-16 semester hours
    1. CHE \_\_\_ Approved Electives 8-12
    2. #MAT \_\_\_ Approved Electives 3-4
  - C. Total for Major **31-36 semester hours**
- II. Liberal Arts **13 semester hours**  
# May be double counted toward Major and Liberal Arts Requirements.
- III. General Electives **11-16 semester hours**
- IV. Total for Degree **60 semester hours**
- V. Other Requirements
  1. Students majoring in Biology must maintain a 2.1 GPA in all required courses (excluding cognate requirements in the major).