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
      6. MAT 174 Data Analysis and Statistics 3
      7. MAT 182 Calculus with Analytic Geometry II (4) 3-4
      or PHI 110 Logic (3) 3
      or PHI 210 Symbolic Logic (3) 3
      8. PHY 244 Statistical Analysis and Design 3
      9. PHY 141 General Physics I (Non-Calculus Based) 4
      or PHY 161 Physics I (Calculus Based) 4
      10. PHY 142 General Physics II (Non-Calculus Based) 4
      or PHY 162 Physics II (Calculus Based) 3
      11. TSC 101 Fundamentals of Speech Communication 3

   C. Total for Major 75-77 semester hours

II. Liberal Arts 28 semester hours
    # May be double counted toward Major and Liberal Arts Requirements.

III. General Electives 15-17 semester hours

IV. Total for Degree 120 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.
   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).