

























MICROBIOLOGY, EMPHASIS

 - General Education Course

 - Milestone course: a key success marker for your major. See your advisor to discuss the importance of this course in your plan of study.

Major

The Core Curriculum is designed to foster critical thinking skills and introduce students to basic domains of thinking that transcend disciplines. The Core applies to all majors. Information on specific classes in the Core can be found at <https://www.marshall.edu/gened/>.

| Code | Title | Credit Hours |
|---|--------------------------------------|--------------|
| Core Curriculum | | |
| <i>Core 1: Critical Thinking</i> | | |
| FYS 100 | First Yr Sem Critical Thinking | 3 |
| | Critical Thinking Course | 3 |
| | Critical Thinking Course | 3 |
| <i>Core 2</i> | | |
| ENG 101  | Beginning Composition | 3 |
| ENG 201  | Advanced Composition | 3 |
| CMM 103  | Fund Speech-Communication | 3 |
| MTH 140  | Applied Calculus | 3 |
| BSC 120   | Principles of Biology ¹ | 4 |
| | Core II Humanities | 3 |
| | Core II Social Science | 3 |
| | Core II Fine Arts | 3 |
| <i>Additional University Requirements</i> | | |
| | Writing Intensive | 3 |
| | Writing Intensive | 3 |
| | Multicultural or International | 3 |
| BSC 491  | Capstone Experience ² | 2 |
| Major-Specific | | |
| BSC 121   | Principles of Biology ¹ | 4 |
| CHM 211   | Principles of Chemistry I | 3 |
| CHM 217   | Principles of Chem Lab I | 2 |
| CHM 212   | Principles Chemistry II | 3 |
| CHM 218  | Principles of Chem Lab II | 2 |
| CHM 355  | Organic Chemistry I | 3 |
| CHM 356 | Organic Chemistry II | 3 |
| CHM 361 | Intro Organic Chm Lab | 3 |
| PHY 201  | College Physics I | 3 |
| PHY 202  | General Physics I Laboratory | 1 |
| PHY 203  | College Physics II | 3 |
| PHY 204  | General Physics 2 Laboratory | 1 |
| BSC 491  | Capstone Experience (C) ² | 2 |
| Area of Emphasis-Specific | | |
| BSC 324  | Principles of Genetics | 4 |
| BSC 302 | Principles of Microbiology | 3 |

| | | |
|--------------------------------|---------------------------|----|
| BSC 304 | Microbiology Lab | 2 |
| BSC 443 | Microbial Genetics | 3 |
| BSC 320 | Principles of Ecology | 4 |
| or BSC 322 | Principles Cell Biology | |
| CHM 365 | Introductory Biochemistry | 3 |
| Advisor Approved Course | | 4 |
| <i>AoE Elective</i> | | |
| Select three of the following: | | 10 |
| BSC 417 | Biostatistics | |
| BSC 424 | Animal Parasitology | |
| BSC 438 | Emerging Infect Diseases | |
| BSC 448 | Introductory Immunology | |
| CHM 467 | Intermediate Biochemistry | |
| Free Elective | | 3 |
| Free Elective | | 3 |
| Free Elective | | 3 |
| Free Elective | | 3 |
| Free Elective | | 2 |

¹ BSC 104 Introduction to Biology and BSC 105 Human Biology will not substitute for BSC 120 Principles of Biology and BSC 121 Principles of Biology for a major in the Department of Biological Sciences.


² **Capstone Experience:** It is the responsibility of each student to consult his/her advisor regarding details of meeting the capstone requirement. The capstone may be a traditional independent study research project under the supervision of a faculty member selected by the student, participation in a classroom-based capstone course, or the development and implementation of an internship, co-op, or community-based project.

Major Information

- Students must pass BSC 120 Principles of Biology and earn a grade of C or better in BSC 121 Principles of Biology, CHM 211 Principles of Chemistry I, and CHM 212 Principles Chemistry II before they can enroll in any upper-level BSC course except BSC 227 Human Anatomy, BSC 228 Human Physiology and BSC 250 Microbiol & Human Disease.
- In addition to the Core General Education requirements, the College of Science requires 3 hours of Calculus, and 40 hours of upper level credit.
- The CHM coursework provides a Chemical Sciences minor.
- Coursework listed as "elective" may vary for each student. Students are encouraged to use elective hours toward a 2nd minor or toward prerequisites.
- Students are strongly encouraged to select courses that meet two or more Core or College requirements. For example, a writing intensive literature course could satisfy the Core II Humanities requirement as well as the University writing intensive requirement.
- Course offerings and course attributes are subject to change. Please consult each semester's schedule of courses for availability and attributes.
- MTH 140 Applied Calculus requires ACT Mathematics score of 24 or higher. Students with an ACT Mathematics score less than 24 will be placed in the appropriate mathematics courses.














- All Biological Science majors are required to complete a minimum of 40 hours of credits in the Department of Biological Sciences.

 - General Education Course

 - Milestone course: a key success marker for your major. See your advisor to discuss the importance of this course in your plan of study.

Four Year Plan


The Department of Biological Sciences is committed to teaching students about the science of life from molecular to global scales. A degree in Biological Sciences prepares students for careers and graduate study in diverse fields such as human and veterinary medicine, dentistry, biomedical and pharmaceutical research, environmental consulting, wildlife ecology, and K12 or higher education. Students completing the Area of Emphasis in Microbiology will be prepared for a wide range of careers including environmental, pharmaceutical, and industrial microbiology. Students will also be prepared to continue specialization at the graduate level in medical, food and dairy, and industrial microbiology, as well as soil and sanitary bacteriology.

| Course | Title | Credit Hours |
|--|--|--------------|
| First Year | | |
| First Semester | | |
| BSC 120  | Principles of Biology | 4 |
| MTH 140  | Applied Calculus | 3 |
| ENG 101  | Beginning Composition | 3 |
| Free Elective | | 3 |
| UNI 100 | Freshman First Class | 1 |
| Credit Hours | | 14 |
| Second Semester | | |
| BSC 121  | Principles of Biology | 4 |
| FYS 100 | First Yr Sem Critical Thinking | 3 |
| Core II Fine Arts | | 3 |
| CMM 103  | Fund Speech-Communication | 3 |
| Free Elective (MTH 122 rec for PHY PR) | | 3 |
| Credit Hours | | 16 |
| Second Year | | |
| First Semester | | |
| BSC 302 | Principles of Microbiology | 3 |
| BSC 304 | Microbiology Lab | 2 |
| CHM 211  | Principles of Chemistry I | 3 |
| CHM 217  | Principles of Chem Lab I | 2 |
| ENG 201  | Advanced Composition | 3 |
| PSY 201  | Introductory Psychology (CT) (Core II | 3 |
| or SOC 200  | Social Science or Introductory Sociology (CT) | |
| Credit Hours | | 16 |
| Second Semester | | |
| CHM 212  | Principles Chemistry II | 3 |
| CHM 218  | Principles of Chem Lab II | 2 |
| BSC 324  | Principles of Genetics | 4 |
| Core I Critical Thinking | | 3 |

| | |
|---------------------|-----------|
| Free Elective | 3 |
| Credit Hours | 15 |

Third Year

First Semester

| | | |
|---|---------------------|---|
| BSC 443 | Microbial Genetics | 3 |
| CHM 355  | Organic Chemistry I | 3 |
| AoE Elective | | 4 |
| Multicultural or International (CT) | | 3 |
| Free Elective | | 2 |

Credit Hours

15

Second Semester



| | | |
|--------------------|----------------------------|---|
| CHM 356 | Organic Chemistry II | 3 |
| CHM 361 | Intro Organic Chm Lab | 3 |
| Core II Humanities | | 3 |
| BSC 320 | Principles of Ecology | 4 |
| or BSC 322 | or Principles Cell Biology | |
| Free Elective | | 2 |

Credit Hours

15

Fourth Year




First Semester

| | | |
|--|------------------------------|---|
| CHM 365 | Introductory Biochemistry | 3 |
| Advisor Approved Course | | 4 |
| PHY 201  | College Physics I | 3 |
| PHY 202  | General Physics I Laboratory | 1 |
| Writing Intensive | | 3 |

Credit Hours

14

Second Semester

| | | |
|---|------------------------------|---|
| BSC 491  | Capstone Experience (C) | 2 |
| Writing Intensive | | 3 |
| AoE Elective | | 3 |
| AoE Elective | | 3 |
| PHY 203  | College Physics II | 3 |
| PHY 204  | General Physics 2 Laboratory | 1 |

Credit Hours

15

Total Credit Hours

120