

# PHYSIOLOGY: PRE-MEDICAL SCIENCES, BS

## Degree Requirements

**Requirements for Students Matriculating in or before Academic Year 2025-2026.** Learn more about University Academic Regulation 3.1 (<http://catalog.okstate.edu/university-academic-regulations/#matriculation>).

**Minimum Overall Grade Point Average: 2.50**

**Total Hours: 120**

| Code   | Title  | Hours |
|--|--|-------|
| <b>General Education Requirements</b>  |  |       |
| <i>English Composition</i>   |  |       |
| See Academic Regulation 3.5 ( <a href="http://catalog.okstate.edu/university-academic-regulations/#english-composition">http://catalog.okstate.edu/university-academic-regulations/#english-composition</a> )  |  |       |
| ENGL 1113  | Composition I                                      | 3     |
| or ENGL 1313   | Critical Analysis and Writing I                    |       |
| Select one of the following:   |  | 3     |
| ENGL 1213  | Composition II                                     |       |
| ENGL 1413  | Critical Analysis and Writing II                   |       |
| ENGL 3323  | Technical Writing                                  |       |
| <i>American History &amp; Government</i>   |  |       |
| HIST 1103  | Survey of American History                         | 3     |
| or HIST 1483   | American History to 1865 (H)                       |       |
| or HIST 1493   | American History Since 1865 (DH)                   |       |
| POLS 1113  | American Government                                | 3     |
| <i>Quantitative Thought &amp; Logical Reasoning (Q)</i>  |  |       |
| MATH 2144  | Calculus I (Q) <sup>1</sup>                        | 4     |
| STAT 4013  | Statistical Methods I (Q) <sup>1</sup>             | 3     |
| or STAT 2013   | Elementary Statistics (Q)                          |       |
| or STAT 3023   | Statistical Reasoning for Medical Applications (Q) |       |
| <i>Understanding Humanities-Human Heritage &amp; Cultures (H)</i>  |  |       |
| Courses designated (H)   |  | 6     |
| <i>Reasoning in the Natural Sciences (N)</i>   |  |       |
| Must include one Laboratory-Based Inquiry (L) course   |  |       |
| PHYS 1114  | College Physics I (LN) <sup>1</sup>                | 4     |
| or PHYS 2014   | University Physics I (LN)                          |       |
| PHYS 1214  | College Physics II (LN) <sup>1</sup>               | 4     |
| or PHYS 2114   | University Physics II (LN)                         |       |
| <i>Exploring Society &amp; Human Behavior (S)</i>  |  |       |
| Course designated (S)  |  | 3     |
| <i>Diversity (D)</i>   |  |       |
| Courses designated (D)   |  | 3     |
| <i>Global Cultural Competency (G)</i>  |  |       |
| Courses designated (G)   |  | 3     |
| <i>Additional General Education</i>  |  |       |
| Additional general education credit hours may be required to meet the total 40-hour minimum of general education credit if courses carry more than one general education designation and can be used to meet multiple general education designation hour requirements above. |  |       |

|  |  |           |
|--|--|-----------|
| Courses designated (Q), (H), (N), (S), (D), (G), or (F).                           |  | 0         |
| <b>Hours Subtotal</b>  |  | <b>42</b> |
| <b>College/Departmental Requirements</b>   |  |           |
| UNIV 1111  | First Year Seminar (or other approved first year seminar course) | 1         |
| <i>Arts &amp; Humanities</i>   |  |           |
| See note 2.a.  |  | 3         |
| <i>Natural &amp; Mathematical Sciences</i>   |  |           |
| CHEM 1314  | Chemistry I (LN)   | 4         |
| CHEM 1515  | Chemistry II (LN)  | 5         |
| <i>Foreign Language</i>  |  |           |
| See note 3   |  | 0         |
| 0-6 hours  |  |           |
| <i>Upper-Division General Education</i>  |  |           |
| Select 6 hours outside major department  |  |           |
| See note 2.c.  |  |           |
| <b>Hours Subtotal</b>  |  | <b>13</b> |
| <b>Major Requirements <sup>2</sup></b>   |  |           |
| Minimum GPA 2.50 in Major Requirements with a minimum grade of "C" in each course. |  |           |
| <i>Core Courses</i>  |  |           |
| BIOL 1113  | Introductory Biology (N)   | 4         |
| & BIOL 1111  | and Introductory Biology Laboratory (LN)                         |           |
| or BIOL 1114   | Introductory Biology (LN)  |           |
| BIOL 1604  | Animal Biology   | 4         |
| BIOL 3023  | General Genetics <sup>2</sup>                                    | 3         |
| BIOL 3034  | General Ecology  | 4         |
| BIOL 3114  | Vertebrate Zoology   | 4         |
| or BIOL 3214   | Human Anatomy  |           |
| BIOL 3204  | Physiology   | 4         |
| BIOL 4133  | Evolution <sup>2</sup>   | 3         |
| BIOL 4215  | Mammalian Physiology   | 5         |
| BIOL 4223  | Mammalian Physiology Capstone Laboratory                         | 3         |
| BIOL 3653  | Survey of Biochemistry   | 3         |
| CHEM 3053  | Organic Chemistry I  | 3         |
| CHEM 3112  | Organic Chemistry Laboratory                                     | 2         |
| CHEM 3153  | Organic Chemistry II   | 3         |
| MICR 2123  | Introduction to Microbiology                                     | 3         |
| MICR 2132  | Introduction to Microbiology Laboratory                          | 2         |
| MICR 3033  | Cell and Molecular Biology                                       | 3         |
| <i>Related Courses</i>   |  |           |
| Select two courses, including at least one BIOL, from the following:               |  | 6         |
| BIOL 4024  | Histology  |           |
| BIOL 4073  | Principles of Neuroscience                                       |           |
| BIOL 4104  | General Parasitology   |           |
| BIOL 4134  | Embryology   |           |
| BIOL 4253  | Pharmacology   |           |
| BIOL 4273  | Environmental Physiology   |           |
| BIOL 4283  | Endocrinology  |           |
| BIOL 4293  | Behavioral Neuroendocrinology                                    |           |
| BIOL 4363  | Principles of Toxicology   |           |

|   |                                       |            |
|---|---------------------------------------|------------|
| HHP 4064  | Neuroanatomy                          |            |
| MICR 3143   | Medical Mycology                      |            |
| MICR 3223   | Advanced Microbiology                 |            |
| MICR 3253   | Immunology                            |            |
| MICR 3553   | Foundations of Cancer                 |            |
| MICR 4123   | Virology                              |            |
| MICR 4423   | Antibiotics and Antibiotic Resistance |            |
| <b>Hours Subtotal</b>   |                                       | <b>59</b>  |
| <b>Electives <sup>2</sup></b>   |                                       |            |
| Select 6 hours  |                                       | 6          |
| MATH 1513 and MATH 1813 required for students who do not place directly into MATH 2144.   |                                       |            |
| May need to include 6 hours of a foreign language. See note 3   |                                       |            |
| May need to include 6 hours upper-division general education outside major department (see note 2.c.) and 2 additional upper-division hours |                                       |            |
| Recommended courses:  |                                       |            |
| PSYC 1113   | Introductory Psychology (S)           |            |
| SOC 1113  | Introductory Sociology (S)            |            |
| <b>Hours Subtotal</b>   |                                       | <b>6</b>   |
| <b>Total Hours</b>  |                                       | <b>120</b> |

1

College and Departmental Requirements that may be used to meet General Education Requirements.

2

With approval from the advisor and department head and a minimum GPA of 3.0, a maximum of 30 hours from an accredited doctoral health program may be substituted for electives or major requirements other than BIOL 3023 General Genetics and BIOL 4133 Evolution.

Additional requirements for professional school admission exist. View Admission Requirement Sheets at [prehealth.okstate.edu](http://prehealth.okstate.edu) (<http://prehealth.okstate.edu>).

## Other Requirements

- See the College of Arts and Sciences Requirements.
- **Upper-Division Credit:** Total hours must include at least 40 hours in courses numbered 3000 or above.

## College of Arts and Sciences Requirements

- Hours in One Department:** For B.A. and B.S. degrees, no more than 54 hours in one department may be required to meet degree requirements. Courses used to satisfy the General Education English Composition, U.S. History, American Government, and Mathematics or Statistics requirements will not count toward the 54-hour maximum required from one department.
- A&S College/Departmental Requirements**
  - Arts and Humanities are defined as any course carrying an (H) designation or courses from AMST, ART, DANC, ENGL (except ENGL 3323 Technical Writing) HIST, MUSI, PHIL (except PHIL 1313 Logic and Critical Thinking (Q), PHIL 3003 Symbolic Logic (Q) and PHIL 4003 Mathematical Logic and Computability), REL, TH, and foreign languages.
  - Natural and Mathematical Sciences are defined as any course from the following prefixes: ASTR, BIOC, BIOL, CHEM, CS (except CS 4883 Social Issues in Computing), GEOL, MATH, MICR, PBIO, PHYS, and STAT; or courses from other departments that carry an (A) or (N) general education designation.
  - Six upper-division hours are required from General Education or any CAS courses outside the student's major department (<http://catalog.okstate.edu/college-arts-sciences-major-departments/>). This requirement may be satisfied by courses also used to satisfy any part of a student's degree program (i.e., in General Education, College Departmental Requirements, Major Requirements or Electives).
  - Non-Western Studies Requirement for B.A. and B.F.A.; One course in Non-Western Studies (N.W.). This requirement may be satisfied by courses also used to satisfy any part of a student's degree program (i.e., in General Education, College Departmental Requirements, Major Requirements or Electives).
  - The College of Arts & Sciences requires a minimum 2.0 GPA in all major requirements and a minimum 2.0 GPA in all major-prefix courses applied to the degree.
- Foreign Language Proficiency**
  - The foreign language requirement for the B.A. may be satisfied by 9 hours college credit in the same language, which must include 3 hours at the 2000-level, or equivalent proficiency (e.g., passing an advanced standing examination; TOEFL exam; presenting a high school transcript which demonstrates the high school was primarily conducted in a language other than English; etc.). Computer Science courses may not be used to satisfy this requirement. Currently Arabic and Mvskoke are not offered at the 2000-level at OSU.
  - The foreign language requirement for the B.S., B.M. and B.F.A. may be satisfied by presenting a high school transcript which demonstrates two years of study of a single foreign language (passing grades at second-year level of study). It may also be satisfied by 6 hours college credit in the same language, which must include language courses 1713 and 1813, or equivalent proficiency (e.g., passing an advanced standing examination; TOEFL exam; presenting a high school transcript which demonstrates the high school was primarily conducted in a language other than English; etc.). Computer Science courses may not be used to satisfy this requirement.
  - In addition to a. and b., students pursuing teacher certification must meet novice-high foreign language proficiency by presenting a high school transcript which demonstrates two years of study of a single foreign language with no grade below B. Or, students may complete 3 hours college credit in a single language with no grade below C (or pass an advanced standing examination, College Level Examination Program (CLEP) exam, or Oral Proficiency Interview developed by the American Council on the Teaching of Foreign Languages, equivalent to 3 hours of college credit.) Or, students may meet the requirement by transfer of documentation of meeting the foreign language competency from one of the teacher education programs in the State of Oklahoma approved by the Oklahoma State Regents for Higher Education.
- Exclusions.** Courses with ATHL or LEIS prefixes and leisure activity courses may not be used for degree credit.

## Additional State/OSU Requirements

- At least: 60 hours at a four-year institution; 30 hours completed at OSU; 15 of the final 30 and 50% of the upper-division hours in the major field completed at OSU.
- Limit of: one-half of major course requirements as transfer work; one-fourth of hours earned by correspondence; 8 transfer correspondence hours.
- Students will be held responsible for degree requirements in effect at the time of matriculation and any changes that are made, so long as these changes do not result in semester credit hours being added or do not delay graduation.
- Degrees that follow this plan must be completed by the end of Summer 2031.

## Example Plan of Study

### Finish in Four Plan of Study

The plan below is an example of how students can successfully complete degree requirements in four years. This suggested class schedule plan may be used as a guide and can be adjusted based on individual needs. Students are required to meet with an academic advisor prior to enrollment each semester to plan their class schedule, and students are ultimately responsible for completing all degree requirements.

| Course                                | Title   | Hours     |
|---------------------------------------|---|-----------|
| <b>Freshman</b>                       |   |           |
| <b>Fall</b>                           |   |           |
| First Year Seminar                    |   | 1         |
| CHEM 1314                             | Chemistry I (LN)  | 4         |
| MATH 2144                             | Calculus I (Q)  | 4         |
| UNIV 2511                             | Introduction to Health Careers (Suggested)                                  | 1         |
| General Education courses             |   | 5         |
| <b>Hours</b>                          |   | <b>15</b> |
| <b>Spring</b>                         |   |           |
| BIOL 1113<br>& BIOL 1111              | Introductory Biology (N)<br>and Introductory Biology Laboratory (LN)        | 4         |
| CHEM 1515                             | Chemistry II (LN)   | 5         |
| General Education courses             |   | 6         |
| <b>Hours</b>                          |   | <b>15</b> |
| <b>Sophomore</b>                      |   |           |
| <b>Fall</b>                           |   |           |
| BIOL 1604                             | Animal Biology  | 4         |
| CHEM 3053                             | Organic Chemistry I   | 3         |
| MICR 2123<br>& MICR 2132              | Introduction to Microbiology<br>and Introduction to Microbiology Laboratory | 5         |
| UNIV 2611                             | Health Portfolio and Self-Development (Suggested)                           | 1         |
| General Education or Elective courses |   | 2         |
| <b>Hours</b>                          |   | <b>15</b> |
| <b>Spring</b>                         |   |           |
| CHEM 3153<br>& CHEM 3112              | Organic Chemistry II<br>and Organic Chemistry Laboratory                    | 5         |
| PHYS 1114                             | College Physics I (LN)  | 4         |
| General Education courses             |   | 6         |
| <b>Hours</b>                          |   | <b>15</b> |
| <b>Junior</b>                         |   |           |
| <b>Fall</b>                           |   |           |
| BIOC 3653                             | Survey of Biochemistry  | 3         |
| BIOL 3204                             | Physiology  | 4         |
| PHYS 1214                             | College Physics II (LN)   | 4         |
| Major or Elective courses             |   | 4         |
| <b>Hours</b>                          |   | <b>15</b> |

|                                    |  |            |
|------------------------------------|--|------------|
| <b>Spring</b>                      |  |            |
| BIOL 4215                          | Mammalian Physiology                             | 5          |
| MICR 3033                          | Cell and Molecular Biology                       | 3          |
| UNIV 3511                          | Health Profession School Preparation (Suggested) | 1          |
| Major or Elective courses          |  | 6          |
| <b>Hours</b>                       |  | <b>15</b>  |
| <b>Senior</b>                      |  |            |
| <b>Fall</b>                        |  |            |
| BIOL 3023                          | General Genetics                                 | 3          |
| BIOL 4223                          | Mammalian Physiology Capstone Laboratory         | 3          |
| Major or General Education courses |  | 9          |
| <b>Hours</b>                       |  | <b>15</b>  |
| <b>Spring</b>                      |  |            |
| BIOL 3034                          | General Ecology                                  | 4          |
| BIOL 3214                          | Human Anatomy                                    | 4          |
| BIOL 4133                          | Evolution  | 3          |
| Major or General Education courses |  | 4          |
| <b>Hours</b>                       |  | <b>15</b>  |
| <b>Total Hours</b>                 |  | <b>120</b> |