## General Requirements

**Minimum Retention/Graduation Grade Point Averages:**
- Overall - Combined and OU: 2.00
- Major - Combined and OU: 2.00
- Curriculum - Combined and OU: 2.00

*A minimum grade of C is required for each course in the curriculum.*

## Engineering Transfer Students

Engineering transfer students may take ENGR 3511 in place of ENGR 1411.

## Grade Requirements

Students must successfully complete prerequisite courses (with a minimum C grade) before proceeding to the next course.

- Two college-level courses in a single foreign language are required; this may be satisfied by successful completion of 2 years in a single foreign language in high school. Students who must take foreign language at the University will have an additional 6-10 hours of coursework.
- Students who wish to take the MCAT in their junior year are encouraged to take the required zoology elective and the chemistry elective during their junior year. Some may also wish to take an additional zoology elective (not required in the curriculum).

## Allowed Substitutions

- AP approved course
- University-Wide General Education Approved Course List
- Students must refer to the Catalog and Advising Center Bulletin Board for additional enrollment limitations.

## University Schedule

OU encourages students to complete at least 33 hours of applicable coursework each year to have the opportunity to graduate in four years.

### Yearly Summary

<table>
<thead>
<tr>
<th>Year</th>
<th>First Semester Hours</th>
<th>Second Semester Hours</th>
<th>Total Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freshman</td>
<td>15</td>
<td>18</td>
<td>33</td>
</tr>
<tr>
<td>Sophomore</td>
<td>18</td>
<td>15</td>
<td>33</td>
</tr>
<tr>
<td>Junior</td>
<td>17</td>
<td>19</td>
<td>36</td>
</tr>
<tr>
<td>Senior</td>
<td>15</td>
<td>15</td>
<td>30</td>
</tr>
</tbody>
</table>

**NOTE:** Engineering transfer students may take ENGR 3511 in place of ENGR 1411.

Courses designated as Core I, II, III, IV, or Capstone are part of the General Education curriculum. Students must complete a minimum of 40 hours of General Education courses, chosen from the approved list.

1. To be chosen from the University-Wide General Education Approved Course List. Three of these 12 hours must be upper-division (3000-4000). See list in the Class Schedule.

2. In the College of Engineering, in order to progress in your curriculum, and as a specific graduation requirement, a grade of C or better is required in each course in the curriculum. Please refer to the General Catalog and Advising Center Bulletin Board for additional enrollment limitations.

3. Students must successfully complete prerequisite courses (with a minimum C grade) before proceeding to the next course.

4. A list of Engineering Science electives is available in the AME Office, FH 212.

5. To be chosen from: Zoology 2204, 3113, 3203, or 3333.

6. Students who wish to take the MCAT in their junior year are encouraged to take the required zoology elective and the chemistry elective during their junior year. Some may also wish to take additional zoology elective (not required in the curriculum).

7. AME courses are sequential and usually offered only in the semester shown. Note prerequisites on the back of this page.

8. This course fulfills the Computer Literacy Requirement for graduation as required by the Oklahoma State Regents for Higher Education.

9. This course fulfills the Computer Literacy Requirement for graduation as required by the Oklahoma State Regents for Higher Education.

10. Students must refer to the Catalog and Advising Center Bulletin Board for additional enrollment limitations.

11. This course fulfills the Computer Literacy Requirement for graduation as required by the Oklahoma State Regents for Higher Education.

12. Students must refer to the Catalog and Advising Center Bulletin Board for additional enrollment limitations.

13. This course fulfills the Computer Literacy Requirement for graduation as required by the Oklahoma State Regents for Higher Education.

14. Students must refer to the Catalog and Advising Center Bulletin Board for additional enrollment limitations.

15. This course fulfills the Computer Literacy Requirement for graduation as required by the Oklahoma State Regents for Higher Education.
3053 Organic Chemistry I: Biological Emphasis. Prerequisite: CHEM 1415 or CHEM 1425. Intended for life science majors. First course in a two-semester sequence (3053 and 3153). This course will cover the concepts of organic structure, nomenclature, and reactivity with an emphasis on biological applications. (F, Sp, Su)

3152 Organic Chemistry Laboratory: Biological Emphasis. Prerequisite: CHEM 3053 or concurrent enrollment. Laboratory course designed to accompany company CHEM 3053 and CHEM 3153. Selected experiments designed to illustrate the fundamental techniques used in organic chemistry, to develop familiarity with the properties of organic compounds and to introduce analytical techniques including spectroscopy. (F, Sp, Su)

3153 Organic Chemistry II: Biological Emphasis. Prerequisite: CHEM 3053 with a grade of C or better. Intended for life science majors. Second course in a two-semester sequence (3053 and 3153). This course will cover the concepts of organic chemical reactivity with an emphasis on carbohydrates, lipids, and proteins. (F, Sp, Su)

COURSES IN COMMUNICATION (COMM)

3513 Intercultural Communication. Prerequisite: 1113 and junior standing. Introduction to intercultural communication theory, research and selected applications. Topics include conceptualizing intercultural communication theoretically, trends in research, diffusion of innovation, nationality barriers and training for foreign assignments. (F, Sp) [IV-WC]

COURSES IN ENGINEERING (ENGR)

1411 Freshman Engineering Experience. Prerequisite: declared major in Engineering or permission of instructor. Required of all entering freshmen with a declared engineering major. Lecture hours cover a variety of topics including: majors and minors; career planning; advising; and extra-curricular activities. Students also work on multi-disciplinary engineering projects in smaller groups during the lab hour. (F)

2110 Professional Development. Prerequisite: sophomore standing. Develop an understanding of engineering ethics, teamwork, leadership, and professional responsibility through the concepts of contemporary, social, and global issues. (F, Sp)

2431 Electrical Circuits. Prerequisite: Mathematics 2423 and Physics 2524 or concurrent enrollment. Introduction to basic principles of electrical circuits. Topics include circuits (DC circuits, AC circuits, resonant circuits), DC circuits, AC circuits, and topics in static electric fields, static magnetic fields, and electronics (diodes, operational amplifiers). (F, Sp)

2531 Electrical Circuits II. Prerequisite: 2431. Introduction to intermediate principles of electrical circuits. Topics include amplifiers, filters, signal conditioning, A/D and D/A conversion, and communication and analog signal processing. (F, Sp)

3431 Electromechanical Systems. Prerequisite: 2431 and 2531. Introduction to basic principles of electromechanical systems. Topics include physical principles of sensing and actuation, types of sensors and actuators, and interfacing and communication protocols. (Sp)

COURSES IN ENGLISH (ENGL)

3153 Technical Writing. Prerequisite: 1213 and Engineering science majors only. For students of the pure and applied sciences. Focuses on the forms of report writing most frequently encountered in research and industry. (F, Sp)

COURSES IN MATHEMATICS (MATH)

1823 Calculus and Analytic Geometry I. Prerequisite: 1213 at OU, or satisfactory score on the placement test, or, for incoming freshmen direct from high school, satisfactory score on the ACT/SAT. Topics covered include equations of straight lines; conic sections; functions, limits and continuity; differentiation; maximum-minimum theory and curve sketching. A student may not receive credit for this course and 2123. (F, Sp, Su) [I-M]

2423 Calculus and Analytic Geometry II. Prerequisite: 1823. Integration and its applications; the calculus of transcendental functions; techniques of integration; and the introduction to differential equations. A student may not receive credit for this course and 2123. (F, Sp, Su) [I-M]

2433 Calculus and Analytic Geometry III. Prerequisite: 2423. Polar coordinates, parametric equations, curves and surfaces, vector analysis. (F, Sp, Su)

2443 Calculus and Analytic Geometry IV. Prerequisite: 2433. Vector calculus; functions of several variables; partial derivatives; gradients, extreme values and differentials of multivariate functions; multiple integrals; line and surface integrals. (F, Sp, Su)

F3G3113 Introduction to Ordinary Differential Equations. Prerequisite: MATH 2423 or MATH 2924. Duplicates two hours of 3413. First order ordinary differential equations, linear differential equations with constant coefficients, two-by-two linear systems, Laplace transformations, phase planes and stability. (F, Sp, Su)

COURSES IN PHYSICS (PHYS)

2514 General Physics for Engineering and Science Majors. Prerequisite: Mathematics 1823 or Mathematics 1914 with grade of C or better. Not open to students with credit in 1205. Vectors, kinematics and dynamics of particles, work and energy systems of particles, rotational kinematics and dynamics, oscillations, gravitation, fluid mechanics, waves. (F, Sp, Su) [II-NL]

2524 General Physics for Engineering and Science Majors. Prerequisite: 2514 and Mathematics 2423. Not open to students with credit in 1215. Temperature, heat, thermodynamics, electricity, magnetism, optics. (F, Sp, Su)

F3G223 Modern Physics for Engineers. Prerequisite: Mathematics 3113 or equivalent. Relativity, atomic structure, nuclear theory, wave mechanics, statistical physics, solid state physics. (F)

COURSES IN ZOOLOGY (ZOO)

1114 Introductory Zoology. Major biological principles and concepts as illustrated in the structure, function and evolution of animals. Emphasis is on self-regulatory mechanisms, especially in the vertebrates, and their adaptive significance. (F, Sp, Su) [II-NL]

1121 Introductory Zoology. Prerequisite: previous completion or concurrent enrollment in 1114. Laboratory study of structure and development of organ systems. Experiments on physiological process of selected vertebrates and invertebrates. (F, Sp, Su) [II-LAB]