

REQUIREMENTS FOR THE BACHELOR OF SCIENCE **GALLOGLY COLLEGE OF ENGINEERING** THE UNIVERSITY OF OKLAHOMA

| Academic Year |
|---|
| For Students Entering the Oklahoma State System for Higher Education Summer 2021 through Spring 2022 |

| General Requirements | |
|---|------|
| Minimum Total Credit Hours | 129 |
| Minimum Retention/Graduation Grade Point Averages: | |
| Overall - Combined and OU | 2.00 |
| Major - Combined and OU | 2.00 |

| Program |
|------------------------|
| Biomedical Engineering |
| B108 |
| Bachelor of Science |

OU encourages students to complete at least 33 hours of applicable coursework each year to have the opportunity to graduate in 4 years.

Accredited by the Engineering Accreditation Commission of ABET, <http://www.abet.org>

In order to progress in your curriculum in the Gallogly College of Engineering, and as a specific graduation requirement, a grade of C or better is required in each course in the curriculum, including all prerequisite courses.

Two college-level courses in a single world language are required; this may be satisfied by successful completion of 2 years in a single world language in high school. Students who must take a language at the University will have an additional 6-10 hours of coursework.

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

| Year | FIRST SEMESTER | | Hours | SECOND SEMESTER | | Hours |
|-----------|--|---|-----------|------------------------|---|-----------|
| FRESHMAN | ENGL 1113 | Principles of English Composition (Core I) | 3 | ENGL 1213 or EXPO 1213 | Principles of English Composition (Core I) or Expository Writing | 3 |
| | CHEM 1315 | General Chemistry (Core II-Lab) ^{1,3} | 5 | CHEM 1415 | General Chemistry (Continued) (Core II-Lab) ^{1,3} | 5 |
| | MATH 1914 | Differential and Integral Calculus I (Core I) ³ | 4 | MATH 2924 | Differential and Integral Calculus II ³ | 4 |
| | ENGR 1411 | Freshman Engineering Experience ² | 1 | PHYS 2514 | General Physics for Engineering and Science Majors (Core II) ³ | 4 |
| | Approved Elective: First-Year Experience (Core V) ⁵ | | 3 | | | |
| | CREDIT HOURS | | 16 | CREDIT HOURS | | 16 |
| SOPHOMORE | MATH 2934 | Differential and Integral Calculus III | 4 | MATH 3113 | Introduction to Ordinary Differential Equations | 3 |
| | PHYS 2524 | General Physics for Engineering and Science Majors | 4 | C S 1213 | Programming for Non-Majors with Python | 3 |
| | BIOL 1124 | Intro Biol: Molecule/Cell/Phys (Core II-Lab) | 4 | HIST 1483 or HIST 1493 | United States to 1865 (Core IV) or United States, 1865 to the Present | 3 |
| | ENGR 2002 | Professional Development | 2 | ECE 2723 | Electrical Circuits I | 3 |
| | BME 2333 | Biomedical Engineering Fundamentals | 3 | BME 2433 | Signals and Systems for Biomedical Engineering | 3 |
| | | | | ISE 3293 | Applied Engineering Statistics | 3 |
| | CREDIT HOURS | | 17 | CREDIT HOURS | | 18 |
| JUNIOR | BME 3143 | Biomechanics | 3 | BME 3123 | Biotransport | 3 |
| | BME 3722 | Numerical Methods in Biomedical Engineering | 2 | BME 3233 | Biomaterials | 3 |
| | BME 3533 | Biomedical Instrumentation | 3 | BME 4813 | Quantitative Physiology | 3 |
| | BME 3531 | Bioinstrumentation Lab | 1 | | BME Lab 2 | 1 |
| | | BME Lab 1 | 1 | | BME Elective | 3 |
| | | BME Elective | 3 | | BME Elective | 3 |
| | | Upper-Division Biology Elective (per BME faculty approval) ⁴ | 3 | | | |
| | CREDIT HOURS | | 16 | CREDIT HOURS | | 16 |
| SENIOR | BME 4713 | Biomedical Engineering Design I | 3 | BME 4823 | Biomedical Engineering Design II | 3 |
| | | Science, Math, Engineering Elective (Per Advisor Approval) | 3 | | BME Elective | 3 |
| | | Approved Elective: Social Science (Core III) ⁵ | 3 | | Science, Math, Engineering Elective, (Per Advisor Approval) | 3 |
| | | Approved Elective: Western Culture (Core IV) ⁵ | 3 | P SC 1113 | American Federal Government (Core III) | 3 |
| | | Approved Elective: Artistic Forms (Core IV) ⁵ | 3 | | Approved Elective: World Culture (Core IV) ⁵ | 3 |
| | CREDIT HOURS | | 15 | CREDIT HOURS | | 15 |

¹ CHEM 1315 and CHEM 1415 can be substituted with CHEM 1335 (Fall only) and CHEM 1435 (Spring only), respectively.

² Engineering transfer students may take ENGR 3511 in place of ENGR 1411.

³ The prerequisite courses for BME 2333 require a minimum grade of B.

⁴ Pre-medical students should contact the OU Pre-Med Office, 415 Cate Center #1, (405) 325-2457. In addition to pre-med courses in above program, students will need: CHEM 3153, PHYS 1311 and PHYS 1321, PSY and SOC, Cell or Molecular Biology, and Genetics. Recommend BIOL 3103. Students should also plan to take the MCAT in April of their junior year.

⁵ To be chosen from the University-Wide General Education Approved Course List. Three of these 12 hours must be upper-division (3000-4000).

BME AREA CORE LABS

| Code | Title | Credit Hours |
|----------|--|--------------|
| BME 3111 | Bioimaging Lab | 1 |
| BME 3121 | Biotransport Lab | 1 |
| BME 3131 | Bioelectricity Lab | 1 |
| BME 3141 | Biomechanics Lab | 1 |
| BME 3151 | Molecular, Cellular and Tissue Engineering Lab | 1 |
| BME 3161 | Biomedical Micro-/Nano-Technology Lab | 1 |

BME ELECTIVE COURSES

Choose from the following or other courses per advisor approval:

| Code | Title | Credit Hours |
|---------------|---------------------------------|--------------|
| BME 5213 | Biomechanics I | 3 |
| BME 5233 | Biomaterials | 3 |
| BME 5243 | Biochemical Engineering | 3 |
| BME 5293 | Transport in Biological Systems | 3 |
| BME 5373 | Tissue Engineering | 3 |
| ECE 5843 | Medical Imaging Systems | 3 |
| BME 5970 | Special Topics/Seminar | 1-3 |
| ECE 4863/5863 | Bioinstrumentation | 3 |