

Biomedical Engineering Catalog 2025

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| Fall 16 hours | Math 132 or 141 or 147 (3-4) (QR) FA, SP, SU | EF 142 or 151 or 157 (4) (EI) FA, SP | EF 105 (1) FA, SP | Chem 122(3) and 123(1) or 128 (4) (NS)FA, SP, SU | English 101 or 131 (3) FA, SP, SU |
| | Math 132 Prereq- Math 131 Math 141 Prereq- ACT Math 28 or SAT Math 660 | EF 142 Prereq- EF 141 with C- or better and Math 131 EF 142 Coreq- Math 132 EF 151 Coreq- 141/147 or higher and EECS majors COSC 101/102 | Coreq- EF 152 or 158 | Prereq-Math 119; recommended background in Math 131 | 101 Standard; 131 English as Second Language |
| Spring 17 hours | Math 142 or 148 (4) (QR) FA, SP, SU | EF 152 or 158 (4) (NS and EI) FA, SP, SU | ME 202 (2) FA, SP, SU | Chem 132 (3) and 133(1) or 138 (4) FA, SP, SU | English 102 or 112 or 298 or 132 (3) FA, SP, SU |
| | Prereq- Math 132 or 141 or 147 | Prereq-EF 142/151/157 with C or higher Coreq- Math 142 or 148 and EF 105 or COSC 101 or 102 | Coreq- EF 152 or 158 and Math 142 or 148 | Prereq- Chem 122 and 123 or 128 | 102 Prereq 101; 112 Prereq is AP 101 and Test Scores; 298 Prereq University Honors only; 132 Prereq 131 ESL |
| Fall 16 hours | Math 231 or 237 (3) FA, SP, SU | Math 200 (2) FA, SP | Stats 251 (3) FA, SP, SU | ME 231 (3) FA, SP, SU | Biology 160 or 168 (3) FA, SP, SU |
| | Prereq- Math 142 or 148 | Prereq- Math 142 or 148 | Prereq- Math 142 or 148 | Prereq- EF 152 or 158 and ME 202 with C or better | Strongly recommended students take Chemistry 122 and 123 or 128 prior |
| Spring 16 hours | Math 241 or 247 (4) FA, SP, SU | Physics 231 (3) FA, SP, SU | ME 321 (3) FA, SP, SU | BME 205 (3) SP | Vol Core (3) FA, SP, SU |
| | Prereq- Math 142 or 148 | Prereq- Phys 135/137 or EF 151 and 152 Coreq- Math 142 or 148 | Prereq- ME 202 with C better and Math 142/148 with C better | Prereq-BIOL 160 or 168 | Social Science (SS) |
| Fall 18 hours | BME 363 or 367 (3) FA, SP, SU | BME 341 or 347 (3) FA, SP | BME 474 (3) FA | ECE 301 (3) FA, SP | Vol Core (3) FA, SP, SU |
| | Prereq- EF 230; Math 231/237 and ME 231 with grades of C or better | Prereqs-ME 231 with C or better and Math 241 or 247 with grade of C or better | Junior standing | Prereq- Math 231 or 237 with C or better | Arts and Humanities (AH) |
| Spring 15 hours | BME 315 (3) FA, SP | BME 345 (3) (EI) FA, SP, SU | Technical or BME Elective (3) | Technical or BME Elective (3) | Vol Core (3) FA, SP, SU |
| | Prereq- EF 230 and BME 363/367 or ME 363/367 | Prereq- ME 321 Coreq- AE 341/347 or BME 341/347, and ME 363/367 or BME 363/367, and ECE 301 | | | Expanded Perspectives- choose from AH, AAH, GCUS, GCI, or SS |
| Fall 16 hours | Technical or BME Elective (3) | Vol Core (3) FA, SP, SU | BME 450 (3) (OC) FA | BME 473 or 477 (3) FA | BME 449 (4) (WC) FA |
| | | Expanded Perspectives- choose from AH, AAH, GCUS, GCI, or SS | Coreqs-BME 499, 473/477 AE, BME, ME majors only | Prereq-Biology 160/168; BME 205, EF 230, and ME 231 | Prereq- BME 315, 345, and English 102, 112, 132, or 298 |
| Spring 15 hours | Vol Core (3) FA, SP, SU | Vol Core (3) FA, SP, SU | BME 460 (3) (AOC) SP | BME Elective (3) FA, SP, SU | Technical Elective (3) FA, SP, SU |
| | Global Citizenship United States (GCUS) | Global Citizenship International (GCI) | Prereq- BME 450 AE, BME, ME majors only | | |

Biomedical Engineering Elective- Restricted to any 300-500 biomedical engineering course not required for the degree or Chemistry 260 or 268 or 360 or 368.

Technical Elective- Must be preapproved based on selected Track. There are four (4) tracks: (1) Diagnostics, (2) Medical Devices Design, (3) Therapeutics, and (4) Pre-Med. The technical and BME elective courses for each Track are:

- (1) Diagnostics Track: BME 480, BME 494; Math 300/307, Math 323 and ECE 472; ECE 315, ECE 316 and ECE 415; ECE 202 and ECE 335; Math 405; BIOL 159, BCMB 415 and BCMB 416.
- (2) Medical Device Design Track: BME 494; ECE 202 and ECE 335; ME 405; ME 451; MSE 201/207 and ME 366; ME 366 and ME 469; ME 366 and ME 469; ME 457; ME 331; BIOL 159, BCMB 415 and BCMB 416.
- (3) Therapeutics Track: BME 494; BME 409; BME 405; BME 486; NE 433 and NE 490; CHEM 260/268; CHEM 360/368; CHEM 269; CHEM 359; BCMB 401 and CHEM 260/360; BCMB 461; MICR 330; BIOL 159, BCMB 415 and BCMB 416.
- (4) Pre-Med Track: BME 494; BIOL 150/158; BIOL 159; CHEM 260/268; CHEM 269; CHEM 360/368; CHEM 359; BIOL 240; BCMB 401 and CHEM 260/360.

Full Status Progression

A lower-division student may apply for progression to upper division after completing EF 152/158, CHEM 122 and 123 or 128, MATH 231, ME 202, ME 231, and ME 321 with a grade of C or better in each, and an overall GPA of at least 2.4. Students who have not satisfied the requirements for full status will be dropped from departmental class rolls in upper division courses.

Provisional Status Progression

Students who have completed EF 152/158, CHEM 122 and 123 or 128, MATH 231, ME 202, ME 231, and ME 321 with a grade of C or better and have an overall GPA between 2.0 and 2.4 may apply for provisional status. The granting of provisional status is based on the availability of space in departmental programs after full status students have been accommodated. Provisional status students are required to demonstrate their ability to perform satisfactorily in upper-division by attaining a minimum GPA of 2.0 in the first 12 hours of 300-level required engineering courses. Award of upper-division full status is dependent upon this performance. Students with an overall GPA less than 2.0 will not be admitted to upper-division. Students who have not progressed to upper-division will be dropped from departmental class rolls.

Transfer Students

Students transferring more than 26 hours from another institution are considered transfer students. Transfer students must meet the same criteria as non-transfer students, using transfer grades for acceptable substitutions. Transfer courses with grades below a C will not be accepted to fulfill any degree requirements.

Departmental Academic Standing

The faculty of the Department of Mechanical, Aerospace and Biomedical Engineering expect all students who enter to make progress toward graduation. To graduate from the department, a student must earn a minimum grade point average of 2.0 in all departmental courses counted toward the degree. Students not meeting the required departmental GPA may be dropped from their major. In addition, the University Academic Good Standing Policies apply to all students.

BME Graduation Requirements

A minimum GPA of 2.0 in all departmental courses counted toward the degree taken at the University of Tennessee, Knoxville, is required for graduation. No more than two departmental courses in which a C- or lower is the highest grade earned may be counted toward graduation. This is in addition to the university's graduation requirements.

Students also have opportunities for an Honors Concentration and/or a five year BS/MS program. See the Undergraduate Catalog for details and requirements.

Volunteer Core courses highlighted in light orange.