

BS-MS BIOMEDICAL ENGINEERING

The School of Science and Engineering established the BS-MS program to offer students an opportunity to meet the full requirements of the existing BS and MS degree programs in a shorter time period than the separate degree programs by completing a B.S. degree within four years and then completing an M.S. degree in the fifth year.

- Students admitted to the program will receive the SCE BS-MS Scholarship which will cover the difference between Graduate and Undergraduate tuition rates
- Students are required to maintain full-time undergraduate enrollment (minimum 12 hours/ semester)
- Must be continuously enrolled from BS to MS programs (must enter graduate program the semester following completion of BS degree requirements, summer excepted)
- Students are required to maintain full-time enrollment (minimum 9 hours/semester) in the graduate phase of the program and complete the master's degree within a year of their bachelor's degree completion to continue to receive the BS/MS Scholarship

Admission Requirements for BS-MS Program:

Students must meet the following requirements to be eligible:

- The GRE will be waived for students who meet the qualifications above and are planning to enroll in the BS/MS program
- Students must indicate their interest and apply to the program no later than the end of their junior year
- Students must complete 30 hours at UMKC prior to admission to the BS/MS program
- Students are expected to follow the recommended curriculum (although deviations are possible) and must maintain a UMKC cumulative GPA of 3.00 or higher

This program offers students an opportunity to meet the full requirements of the existing BS and MS degree programs in a shorter time period than the separate degree programs by completing a B.S. degree in Biomedical Engineering within four years, and then completing an M.S. degree in Biomedical Engineering in their fifth year.

Requirements for Graduation

Credit Hour Requirements

The BS and MS program in Biomedical Engineering requires:

- 127 Undergraduate Credit Hours
- 30 Graduate Credit Hours
- 151 Total Credit Hours (6 Elective Hours of Overlap)

For additional details, please contact our Department by e-mail sse@umkc.edu. (sce@umkc.edu)

5 Year BS-MS Map

First Year

| Fall Semester | Credits | Spring Semester | Credits |
|---------------|---------|---------------------------------|-----------|
| MATH 266 | | 4 MATH 268 | 3 |
| CHEM 211 | | 4 PHYSICS 240 | 5 |
| GEFSE 101 | | 3 CHEM 212R | 4 |
| CHEM 211L | | 1 CHEM 212LR | 1 |
| ENGLISH 110 | | 3 COMM-ST 110, 140, 212, or 277 | 3 |
| BMD-ENGR 115 | | 1 | |
| | | 16 | 16 |

Second Year

| Fall Semester | Credits | Spring Semester | Credits |
|-----------------------------------|---------|-----------------|---------|
| MATH 250 | | 4 MATH 345 | 3 |
| PHYSICS 250 | | 5 BMD-ENGR 215 | 1 |
| CIV-ENGR 275 (Satisfies GECRT-SC) | | 3 BIOLOGY 202 | 3 |
| BIOLOGY 108 | | 3 E&C-ENGR 216 | 4 |

| | | | | |
|--|----------------|---|----------------|---|
| BIOLOGY 108L | | 1 MEC-ENGR 285 | | 3 |
| | | GECRT-AH 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 112, 113, or 114 | | 3 |
| | | 16 | 17 | |
| Third Year | | | | |
| Fall Semester | Credits | Spring Semester | Credits | |
| BIOLOGY 304 | | 3 BMD-ENGR 315 | | 3 |
| BIOLOGY 316 | | 3 BMD-ENGR 325 | | 3 |
| E&C-ENGR 380 | | 3 E&C-ENGR 276 | | 3 |
| E&C-ENGR 381 | | 1 E&C-ENGR 277 | | 1 |
| MEC-ENGR 411 | | 3 MEC-ENGR 299 | | 3 |
| ENGLISH 225 | | 3 GECRT-SS 101, 102, 104, 105, 106, 107, 108, or 111 | | 3 |
| | | 16 | 16 | |
| Fourth Year | | | | |
| Fall Semester | Credits | Spring Semester | Credits | |
| BMD-ENGR 335 | | 3 BMD-ENGR 495WI | | 3 |
| BMD-ENGR 415 | | 3 Biomedical UGRD Elective ^{^^} | | 3 |
| MEC-ENGR 406 | | 3 Biomedical UGRD Elective ^{^^} | | 3 |
| MEC-ENGR 492 (Satisfies GECUE) | | 3 HISTORY 101, 102, POL-SCI 210, CJC 364, or HONORS 230 | | 3 |
| Biomedical UGRD Elective ^{^^} | | 3 GECDV 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, or 211 | | 3 |
| | | 15 | 15 | |
| Fifth Year | | | | |
| Fall Semester | Credits | Spring Semester | Credits | |
| BIOLOGY 404, MEDB 5501, or COMP-SCI 5565 | | 3 Biomedical GRD Elective [^] | | 3 |
| Biomedical GRD Elective [^] | | 3 Biomedical GRD Elective [^] | | 3 |
| Biomedical GRD Elective [^] | | 3 Biomedical GRD Elective [^] | | 3 |
| Biomedical GRD Elective or Thesis Credit* | | 3 Biomedical GRD Elective or Thesis Credit* | | 3 |
| | | 12 | 12 | |

Total Credits: 151

**** NOTE:** 2 undergraduate courses (6 credit hours) counted toward the graduate degree for BS-MS students: E&C-ENGR 380 Signals & Systems & MEC-ENGR 406 Introduction to Biomaterials

^^ Undergraduate Electives: at least 1 undergraduate elective course must be an engineering elective & only 1 undergraduate elective can be below the 300 level (see undergraduate elective list)

^ Graduate Electives: Minimum of 9 credit hours of engineering and minimum of 6 credit hours of biology/medical/science (see graduate elective list)

*** Coursework Masters:** 21 Elective Credits OR Thesis Masters: 15 Elective Credits + 6 Thesis Credits