

Undergraduate Biomedical Engineering Focus within Biosystems Engineering

The Agricultural and Biosystems Engineering department provides an undergraduate focus in the area of biomedical engineering (BME). There is no undergraduate BME program on campus. Students majoring in BE may choose to include an additional emphasis on biomedical aspects of biosystems engineering. If interested in including such a focus, students should talk first with a faculty member involved with the biomedical engineering interdisciplinary program at the U of A. Dr. Joel Cuello, Dr. Chris Choi, Dr. Jeong-Yeol Yoon, and Dr. Mark Riley are ABE members in this program. These advisors will help students to develop their own focus in biomedical aspects of biosystems engineering. Note that this program will satisfy the undergraduate technical electives (both for engineering science and for engineering design). The program will be as follows:

- 1) 15 units of senior-level coursework of technical electives
 - 6 units of upper division biology
 - BME 511 Physiology for Biomedical engineers (3 units, 0 design credit)
 - One of the following:
 - BME 510 Biology for Biomedical Engineers (3 units, 0 design credit)
 - MCB 410 Molecular/Cell Biology (3 units)
 - PSIO 403 Intro to Cell Physiology (3 units)
 - 3 units of upper division BME course
 - BME 517 Data Analysis in Biomedical Engineering (3 units, 0.5 design credit)
 - Or BME 516 Principles of Biomedical Engineering (3 units, 0.5 design credit)
 - 9 units of upper division biosystems engineering courses
 - Could be any upper division biosystems engineering courses including:
ABE 481A & B, ABE 483, ABE 486, ABE 488, ABE 489. It is strongly recommended that students select these from the offered ABE courses, as these will satisfy the required inclusion of engineering design.
- 2) Evidence of BME activity documented by a BME IDP faculty member.
 - Biomedical Engineering Senior Design Project
 - Undergraduate Research Assistantship
 - Participation in BME conferences/journal clubs
- 3) Voluntary participation in other activities:
 - Lab tours
 - Extracurricular activities (such as involvement in the Biomedical Engineering Society (BMES) student group. Dr. Jennifer Barton in BME is the faculty advisor.)

Note that BME 516 has some similarity to the ABE 48* courses, while BME 517 has some similarity to ABE 447. Selection of which BME course to take is left to the student and advisor's discretion as to whether an emphasis should be placed on sensors or on general biomedical knowledge. There are few slots available for undergraduate students in BME 517 due to the laboratory component.

Note: BME Courses can only be taken in your Senior year and need a 3.0 or better GPA to take these courses.

For more information, contact your BE advisor.