Biomedical Engineering

Biomedical engineering is the application of engineering science and practice to the needs of modern medicine and to research problems in the biological sciences.

More than 200 students have completed the requirements for the minor since establishment of the program in 1989. The minor is intended to provide students with exposure to the interdisciplinary nature and applications of biomedical engineering and to broaden their overall academic and technical exposure. It is appropriate for any student with a view toward future employment in the biomedical or healthcare industry. Many graduates have gone on to pursue graduate degrees in biomedical engineering or enroll in medical school.

The minor is particularly suitable for students pursuing an undergraduate degree in a different engineering major, physics, or other applied science who are seeking careers in health-related professions. PHYS 211 GN(4), PHYS 212 GN(4), and calculus through differential equations (MATH 250 or MATH 251) are required for entrance to the minor. Additional prerequisites for the additional and supporting courses may be required and should be researched prior to applying for the minor (e.g., CHEM 112 GN(3)). Students interested in pursuing this minor should contact the biomedical engineering undergraduate office with any questions or for more information.

PROGRAM REQUIREMENTS (18-20 credits)

Additional Courses (6-8 credits):
- Select 3-4 credits of physiology from BIOL 141, BIOL 230W, or BIOL 472
- Select 3-4 credits of molecular/cell biology from BIOL 230W, BMB 251, or BME 201

Supporting Courses (12 credits):
- Select 9-12 credits of biomedical engineering (BME) from 3-credit courses at the 400 or 500 level
- Select 0-3 credits of biomedical engineering-related electives (see department website for complete list)

Examples of biomedical engineering-related electives are listed below and others will be considered upon request.

- B E 308
- B E 468
- CH E 340
- CH E 438
- E E 455/CMPEN 455
- E E 453
- I E 327
- MATSE 403/BME 443
- MATSE 404/BME 444
- M E 491 (offered at Behrend only)
- NUC E 420
- Phys 472

Only 3 credits of independent research (BME 494H or BME 496) may be used toward the minor. 300-level BME courses may be used by petition and with approval of the department.

For more information, contact:
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