BIOMEDICAL ENGINEERING (BME)

Courses

BME 5150. Nanobiomaterials. 3 Credits.
Covers the classes of nanomaterials used biomedically, the biological response, and material testing. Content includes applications of nanomaterials in drug delivery, nano-topography of surfaces, sensors, and imaging as well as the topic of nanotoxicity. Pre/Co-requisites: ME 2110, BME 3000, or equivalent with Instructor permission.

BME 5440. Biothermodynamics. 3 Credits.
Inter-disciplinary; guides the student through the thermodynamics of living organisms, comprised of the study of energy transformation in the life sciences. Designed for students from the STEM disciplines. Covers Gibbs free energy, statistical thermodynamics, binding equilibria, and reaction kinetics. Prerequisites: ME 2231, ME 2111, or BME 3600. Cross-listed with: ME 5440.

BME 5990. Special Topics. 1-18 Credits.
See Schedule of Courses for specific titles.

BME 6391. Master's Thesis Research. 1-18 Credits.
Research for the Master's Thesis.

BME 6710. Brain-Computer Interfaces. 3 Credits.
Includes writing Python software to analyze data from the human brain and decode it to develop brain-computer interfaces (BCIs) that can predict a person's response/intent from brain activity alone. Includes work with real examples of neural data, particularly non-invasive electroencephalography (EEG) recordings. Discusses the design and ethics of real-world BCIs. Prerequisites: At least 2 semesters of coding, at least 1 of these semesters in Python or Matlab.

BME 6930. Graduate Seminar. 1 Credit.
Presentation and discussion of advanced problems, research, and current topics in Electrical Engineering by faculty, Graduate students, and outside guest speakers.

BME 6990. Special Topics. 1-18 Credits.
See Schedule of Courses for specific titles.

BME 6993. Independent Study. 1-18 Credits.
A course which is tailored to fit the interests of a specific student, which occurs outside the traditional classroom/laboratory setting under the supervision of a faculty member, for which credit is awarded. Offered at department discretion.

BME 6995. Graduate Independent Research. 1-18 Credits.
Graduate student work on individual or small team research projects under the supervision of a faculty member, for which credit is awarded. Offered at department discretion.

BME 7491. Doctoral Dissertation Research. 1-18 Credits.
Research for the Doctoral Dissertation.

BME 7990. Special Topics. 1-18 Credits.
See Schedule of Courses for specific titles.

BME 7993. Independent Study. 1-18 Credits.
A course which is tailored to fit the interests of a specific student, which occurs outside the traditional classroom/laboratory setting under the supervision of a faculty member, for which credit is awarded. Offered at department discretion.