

TECHNICAL ELECTIVES (5/2015)

Students must take 18 credits (usually 6 courses) of Technical Electives. Technical electives in the Bachelor of Biomedical Engineering curriculum provide the students with an opportunity to pursue areas of particular interest. Technical electives must meet the following criteria: (1) being primarily technical, (2) having a skill or theory component, and (3) being above an introductory level or having a high level of technical rigor. Because biomedical engineers work in a wide range of technical areas, the approved list of technical electives includes upper level courses across departments:

At least two courses (6 credits) must be selected from the Biomedical Engineering Technical Electives List:

BMEG 350 Clinical Immersion for Engineers
BMEG 411 Advanced Techniques in Cell & Tissue
BMEG 461/661 Cell Engineering
BMEG 462/662 Engineering Biomedical Nanostructures
BMEG 463/663 Mechanotransduction
BMEG 464 Medical Device Development, Bench to Bedside
BMEG 479 Introduction to Medical Imaging Systems
BMEG 665 Tissue Biomechanics and Modeling
MSEG 460/660 Biomaterials and Tissue Engineering
ELEG 471/671 Mathematical Physiology (cross listed w/ BMEG)
(excluding BMEG 366/466)

At least one course (3 credits) must be selected from the following Engineering list (or the BME list above):

Biomedical Engineering: BMEG 366/466
Chemical Engineering: CHEG 325, 400-699 (except CHEG 473, 474, 595)
Civil and Environmental Engineering: CIEG 301, 302, 305, 311, 331, 351, 400-699 (except CIEG 466)
Computer and Information Sciences: CISC 181, 220, 260, 275, 280, 303, 304, 310, 320, 360, 361, 400-699
Computer Engineering: CPEG 202, 222, 323, 400-699
Electrical Engineering: ELEG 205, 302, 303, 305, 306, 309, 310, 312, 320, 340 400-699 (except ELEG 491)
Materials Science and Engineering: MSEG 400-699 (except MSEG 420, 425, 443, 466, 615)
Mechanical Engineering: MEEG 202, 300-699 (except MEEG 401, 432, 435, 442, 483)

Additional technical elective courses (3 course, 9 credits) **may** be selected from the STEM departments (or from any of the lists above):

Biomedical Engineering: BMEG 366/466
Biology: BISC 208, 300, 302, 312, 400-699 (except BISC 402, 422, 451, 452, 468, 510, 530, 603, 631)
Chemistry: CHEM 322, 400-699 (except CHEM 402, 410, 465, 466, 467, 468, 566,

608, 666)

Kinesiology and Applied Physiology: KAAP 220, 309, 428, 430

Mathematics: MATH 315, 352 or 353, 389, 400-699 (except MATH 580-591)

Medical Laboratory Sciences: MEDT 360, 390, 401, 403, 406, 440

Neuroscience: NSCI 320

Physics: PHYS 309, 310, 313, 400-699

Statistics: STAT 400-699

Thesis: UNIV 401, 402 (topic must be approved by faculty advisor)

Students may take up to 6-credits of Independent Study (BMEG366/466) as engineering and STEM technical electives. The independent study project must be approved by the faculty advisor and by the Undergraduate Director to count as a technical elective. Additional upper-level and graduate-level courses may also be approved by the faculty advisor.