

JOINT BIOMEDICAL ENGINEERING UNDERGRADUATE PROGRAM: SPECIALTY ELECTIVES

PHARMACOENGINEERING

BME 490 S Data Science + Machine Learning in Medicine
BMME 511 S Genetic Engineering
BME 516 S Advanced Drug Delivery
BMME 523 F Biomolecular Engineering
BMME 524 S Biomolecular Sensing Technologies
BMME 527 S Targeting Photomedicine
BME 570 S Immunoengineering
BMME 585 F Biotechnology
BMME 590 F Network Pharmacology

REGENERATIVE MEDICINE

BME 429 F Cellular Engineering
BMME 435 F Biological Physics
BME 448 F Functional Tissue Engineering
BME 483 Tissue Engr. Tech. + BIT / BEC 3** / 4** Biotech
BME 484 S Fund. of Tissue Engineering
BME 490 S Data Science + Machine Learning in Medicine
BMME 511 S Genetic Engineering
BMME 521 S Intro to Synthetic Biology
BMME 572 S Analysis of Tissue Engr. Tech.
TE 463 F Polymer Engineering
<i>Fluids:</i> F/S/U CE 282 Hydraulics or MAE 308 Fluid Mechanics
or BMME 555 F Biofluid Mechanics
<i>Thermo:</i> F/S/U MAE 201 Engr. Thermo I or MSE 301 Intro to Thermo
or BMME 441 F Thermal Physics

REHABILITATION ENG

BME 418 F Wearable Biosensors
BME 425 S Bioelectricity
BME 438 S Bone Mechanobiology
BME 444 F Orthopedic Biomechanics
BME 456 F Rehabilitation Robotics
BME 490 S Data Science + Machine Learning in Medicine
BME 490 S Neural Engineering
BMME 543 F Biomechanics of Movement
BMME 590 S Applied Instrumentation for Movement Analysis

BIO SIGNALS AND IMAGING

BME 412 F Biomedical Signal Processing
BME 418 F Wearable Biosensors
BME 425 S Bioelectricity
BMME 461 F Intro to Medical Imaging
BME 463 even years S Biomedical Optics and Lasers
BME 464 odd years S Microscopy
BME 490 S Data Science + Machine Learning in Medicine
BMME 575 F Machine Learning
BMME 590 F Super Resolution Imaging
ECE 455 F Industrial Robotic Systems
ECE 456 F Mechatronics
ECE 505 F Neural Interface Engineering
MA 501 F/S/U Adv Math. for Eng and Sci I
or MATH 528 F/S Math. Methods for Physical Sci & Eng

MEDICAL MICRODEVICES

BME 412 F Biomedical Signal Processing
BME 418 F Wearable Biosensors
BME 490 S Data Science + Machine Learning in Medicine
BME 522 F Medical Instrumentation
BMME 575 F Machine Learning
E 304 F/S Intro to Nano Science and Tech.
ECE 436 F/S Digital Control Systems
ECE 505 F Neural Interface Engineering
<i>Fluids:</i> F/S/U CE 282 Hydraulics or MAE 308 Fluid Mechanics
or BMME 455 F Biofluid Mechanics
<i>Thermo:</i> F/S/U MAE 201 Engr. Thermo I or MSE 301 Intro to Thermo
or BMME 441 F Thermal Physics

BME students complete FOUR Specialty Electives from 1 or 2 Specialization areas.

Offered at NCSU	F = fall S = spring
Offered at UNC	U = summer

BME 495	BMME 495
Undergraduate Research in BME	
Specialty Elective in any of the five Specialization Areas	
<i>application required</i>	