

# BSMSE Approved Technical Electives

## Biology

- BSC 3403C Quantitative Biological Methods (4). *Every Semester*
  - Pre-Reqs: BSC 2010C and CHM 2046
- BSC 5418 Tissue Engineering (3). *Occasional*
  - Pre-Req: Graduate standing
- MCB 3020C General Microbiology (5). *Every Semester*
  - Pre-Reqs: BSC 2010C and CHM 2210 or CHM 2205
- PCB 3063 Genetics (3). *Every Semester*
  - Pre-Reqs: BSC 2011C and CHM 2046
- PCB 3522 Molecular Biology I (3). *Every Semester*
  - Pre-Reqs: BSC 2010C and CHM 2046
- PCB 3703C Human Physiology (4). *Every Semester*
  - Pre-Reqs: BSC 2010C and CHM 2045C or CHM 1032

## Biomedical Engineering

- BME 3211 Engineering Biomechanics (3). *Fall*
  - Pre-Reqs: EGN 3310, EGN 3321, and EGM 3601 all courses with a “C” or better
- BME 5267 Biofluid Mechanics (3). *Fall*
  - Pre-Reqs: EML 3701 and EGM 3601 or C.I.
- BME 6268 Applied and Computational Biofluids (3). *Spring*
  - Pre-Reqs: EML 3701, EGM 3601, and BME 5267, or C.I.

## Chemistry and Biochemistry

- BCH 4053 Biochemistry I (3). *Fall, Spring*
  - Pre-Req: CHM 2211 with a “C” or better
- CHM 3215L Organic Laboratory Techniques II (2). *Fall, Spring*
  - Pre-Reqs: CHM2211 & CHM2211L with a “C” or better
- CHM 4427 Electrochemistry (3). *Odd Fall*
  - Pre-Req: CHM 2046 with a “C” or better
- CHM 4455 Polymer Chemistry (3). *Odd Fall*
  - Pre-Req: CHM 2211 with a “C” or better
- CHM 5305 Bioconjugate Chemistry (3). *Occasional*
  - Pre-Req: BCH 4053 and Grad Status or Senior standing or C.I.
- CHM 5450 Polymer Chemistry (3). *Even Fall*
  - Pre-Req: CHM 2211 and Grad status or Senior standing or C.I.

## Civil Engineering

- CGN 3501C Civil Engineering Materials (3). *Fall, Spring*
  - EGN 3331C and CHS 1140C OR CHM 2045C or CHM 2041 all courses with a “C” or better
- EGN 3331C Mechanics of Materials (3). *Every Semester*
  - Pre-Reqs: MAC 2311C, MAC 2312, MAC 2313, EGN 3310, PHY 2048C or PHY 2048/L, CHM 2045C or CHS 1440C, and PR/Co-Req: MAP 2302 all courses with a “C” or better

## Electrical Engineering

- EEL 4750 Digital Signal Processing Fundamentals (3). *Every Semester*
  - Pre-Req: EEL 3123C with a “C” or better
- EEL 4832 Engineering Applications of Computer Methods (3). *Occasional*
  - Pre-Req: EEL 3123C & EGN 3211 both with a “C” or better
- EEL 5691 Biomedical Sensors (3). *Occasional*
  - Pre-Reqs: EEL 4750 or EEL 4832 or C.I.

## Environmental Engineering

- EES 4111C Biological Process Control (4). *Spring*
  - Pre-Req: ENV 3001 with a “C” or better
- EES 4202C Chemical Process Control (4). *Fall*
  - Pre-Reqs: ENV 3001 and CHM 2046 both with a “C” or better
- ENV 3001 Environmental Engineering (3). *Every Semester*
  - Pre-Reqs: MAC 2312 and CHM 2045C or CHS 1440 or CHM2041 both with a “C” or better

## Materials Science and Engineering

- EMA 3691 Nanomaterials Process Engineering (3). *Occasional*
  - Pre-Reqs: CHM 2045C or CHS 1440C, PHY 2048 or PHY 2053C, and EGN 3365 all courses with a “C” or better
- EMA 4411 Principles of Semiconductor Manufacturing (3). *Fall*
  - Pre-Reqs: EGN 3373 and EGN 3365 or EMA 3706, or PHY 3101, or EEE 3350 all courses with a “C” or better
- EMA 4501C Scanning Electron Microscopy (3). *Occasional*
  - Pre-Req: EGN 3365 or EMA 3706 with a “C” or better
- EMA 4503 Materials Characterization Techniques (3). *Occasional*
  - Pre-Reqs: EMA 3012C and EGN 3365 or EMA 3706 both with a “C” or better
- EMA 4506 Emerging Materials (3). *Spring*
  - Pre-Req: EGN 3365 or EMA 3706 with a “C” or better
- EMA 4511 Materials Science of Microelectronics Metallization and Packaging (3). *Spring*
  - Pre-Reqs: EGN 3373 and EGN 3365 or EMA 3706, or PHY 3101, or EEE 3350 all courses with a “C” or better

## Mechanical and Aerospace Engineering

- EGM 3601 Solid Mechanics (3). *Every Semester*
  - Pre-Reqs: MAC 2311C, MAC 2312, MAC 2313, EGN 3310, PHY 2048C or PHY 2048/L, and CHM 2045C or CHS 1440C all courses with a “C” or better
- EML 3701 Fluid Mechanics I (3). *Every Semester*
  - Pre-Reqs: MAC 2311C, MAC 2312, MAC 2313, MAP 2302, PHY 2048C, EGN 3321 and EGN 3343 all courses with a “C” or better

## Solid State Physics

- PHY 3220 Mechanics I (3). *Fall, Spring*
  - Pre-Reqs: PHY 2048C or PHY 2048 and MAP 2302
- PHY 3323 Electricity and Magnetism I (3). *Fall, Spring*

- Pre-Reqs: PHY 2049 or PHY 2049C and PHZ 3113 or MAP 4341 or MAP4153
- PHY 4324 Electricity and Magnetism II (3). *Fall, Spring*
  - Pre-Req: PHY 3323
- PHY 4424 Optics (3). *Occasional*
  - Pre-Reqs: PHY 3101 and PHY 3323
- PHY 4445 Lasers (3). *Occasional*
  - Pre-Reqs: PHY 3101, MAP 2302, PHY 4424, or C.I.
- PHY 4604 Wave Mechanics I (3). *Fall*
  - Pre-Reqs: PHZ 3113 and PHY 3220
- PHY 4605 Wave Mechanics II (3). *Spring*
  - Pre-Req: PHY 4604

## Zoology

- ZOO 3733C Human Anatomy (4). *Every Semester*
  - Pre-Req: BSC 2010C or equivalent
- ZOO 3744 Neurobiology (3). *Every Semester*
  - Pre-Req: BSC 2010C