

## MS Biomedical Engineering Electives

Electives must be selected from course list shown below. Electives must be selected with advisor approval. It is recommended that students take a course sequence in a specific area in order to build depth of knowledge. Elective courses outside of this list must be approved by petition to the faculty of the Chemical and Biomedical Engineering Department. A maximum of one course at the 400-level is permitted.

- **Medical Signal and Image Analysis:** PHY 565 Image Processing, PHY 530 Introduction to Medical Physics, PHY 535 Radiation Therapy Physics, BME 659 Medical Imaging, BME 694 Experimental Methods in Biomedical Engineering, CHE 594 Data Analysis and Rectification, IME 520 Applied Engineering Design, PHY 550 Optics
- **Biomechanics:** BME 651 Biomechanical Engineering, CHE 594 Biofluid Mechanics, CVE 512 Finite Element Analysis I, CVE 612 Finite Element Analysis II, CVE 513 Advanced Strength of Materials, CVE 604/ESC 794 Elasticity
- **Tissue Engineering:** BME 655 Biomaterials, BME 651 Biomechanical Engineering, CHE 586 Fundamentals of Polymers, BME 694 Tissue and Organ Engineering
- **Materials synthesis/characterization/nanotechnology:** CHE 586 Fundamentals of Polymers, CHE 580 Advanced Materials Processing, EEC 693 Nanotechnology, CHE 602 Surface Phase Equilibria
- **Bioprocessing:** CHE 566 Biochemical Engineering, CHE 504 Advanced Chemical Reactor Design, CHE 506 Advanced Transport Phenomena, CHE 508 Advanced Separation Processes, CHE 502 Advanced Thermodynamics, CHE 603 Fundamentals of Adsorption, CHE 606 Advanced Mass Transfer
- **Sensors/MEMs devices:** BME 655 Biomaterials, BME 694 BioMEMS, EEC 693 Biosensors, EEC 693 Nanotechnology, EEC 530 Digital Signal Processing, PHY 660 Electronics
- **Software Engineering:** EEC 525 Data Mining, EEC 517 Embedded Systems
- **Controls:** EEC 645 Intelligent Control Systems, CHE 594 Data Analysis and Rectification