**401 Quantitative Human Biology**  
Spring. 3(4-0) Interdepartmental with Human Anatomy and Materials Science and Engineering and Radiology. Administered by Biomedical Engineering. P: (MTH 235 and PHY 184) and ((PSL 250 or concurrently) or (PSL 431 or concurrently) or (ANTR 350 or concurrently)) and (CEM 141 or CEM 151) RB: (CSE 131 or concurrently) or (CSE 231 or concurrently) or PSL 410  
Qualitative description and quantitative engineering analysis of selected, tractable human-biological systems. Multi-disciplinary problem-solving among medical and engineering professionals.

**425 Biomaterials and Biocompatibility**  
Spring. 3(3-0) Interdepartmental with Materials Science and Engineering. Administered by Materials Science and Engineering. P: (PSL 250 or concurrently) and MSE 250 SA: MSM 424, BME 424, BME 324, MSE 324  
Materials science of human implants. Design requirements imposed by the human body, and need for bodily protection.

**490 Independent Study**  
Fall, Spring. 3 to 12 credits. A student may earn a maximum of 12 credits in all enrollments for this course. R: Approval of department.  
Individualized reading and research in biomedical engineering or bioengineering.

**490A Independent Study in Clinical Biomechanics**  
Fall. 1 to 3 credits. A student may earn a maximum of 6 credits in all enrollments for this course. R: Approval of department.  
Individualized reading and research in the application of biomechanics to clinical cases.

**490B Independent Study in Biomaterials**  
Spring. 1 to 3 credits. A student may earn a maximum of 6 credits in all enrollments for this course. R: Approval of department.  
Individualized reading and research in the application of biomaterials.

**491 Special Topics**  
Fall, Spring. 3 to 12 credits. A student may earn a maximum of 12 credits in all enrollments for this course.  
Special topics in biomedical engineering or bioengineering.

**495 Tissue Mechanics**  
Spring. 3(3-0) Interdepartmental with Mechanical Engineering. Administered by Mechanical Engineering. P: (ME 222) R: Open only to students in the College of Engineering. SA: MSM 441  
Application of solid mechanics to understanding mechanical responses of biological tissues. Microstructure and biological function for soft and hard connective tissues and muscle.