

# **ECE1750 Course Syllabus**

## **ECE1750**

### **Introduction to Bioengineering (3-0-3)**

#### **Prerequisites**

None

#### **Corequisites**

None

#### **Catalog Description**

An introduction to the field of bioengineering, including the application of engineering principles and methods to problems in biology and medicine, the integration of engineering with biology, and the emerging industrial opportunities.

#### **Textbook(s)**

No Textbook Specified.

#### **Topical Outline**

1. The cardiovascular system: blood flow dynamics
2. The musculoskeletal system and orthopaedic biomechanics
3. The nervous system and injury biomechanics
4. Imaging modalities
5. Medical device industry and the biomaterials crisis
6. Pharmaceutical industry: drug design and delivery
7. Bioprocessing and the biotech industry
8. The emerging tissue engineering industry
9. Telemedicine
10. The human genome project