

COLLEGE OF CHEMISTRY COURSE GUIDE (../INDEX.HTML)

MAJORS (../MAJOR.HTML)

LIST OF COURSES (COURSES.HTML)

RESOURCES (../RESOURCES/RESOURCE.HTML)

STUDENT LIFE (../STUDENTLIFE/ORGS.HTML)

BIOE C119/MECHE C176 - ORTHOPEDIC BIOMECHANICS (4 UNITS)

(Taken from the UC Berkeley Course Guide (<http://guide.berkeley.edu>))

COURSE OVERVIEW

SUMMARY

Statics, dynamics, optimization theory, composite beam theory, beam-on-elastic foundation theory, Hertz contact theory, and materials behavior. Forces and moments acting on human joints; composition and mechanical behavior of orthopedic biomaterials; design/analysis of artificial joint, spine, and fracture fixation prostheses; musculoskeletal tissues including bone, cartilage, tendon, ligament, and muscle; osteoporosis and fracture-risk predication of bones; and bone adaptation. MATLAB-based project to integrate the course material.

PREREQUISITES

MECHE C85, CIVE C30, or BIOE 102 ([bioe102.html](#)), or equivalent; concurrent enrollment OK. Proficiency in MatLab or equivalent. Prior knowledge of biology or anatomy is not assumed.

WORKLOAD

TIME COMMITMENT

3 hours of lecture and 1 hour of laboratory per week.

Made by Angela Lee, c/o 2019



(<https://www.fsu.edu/college/online/graduate/curriculum/graduate-students/peer-advising>)