

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

MAJORS (../MAJOR.HTML)

LIST OF COURSES (COURSES.HTML)

RESOURCES (../RESOURCES/RESOURCE.HTML)

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

MECHE 102B - MECHATRONICS DESIGN (4 UNITS)

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

COURSE OVERVIEW

SUMMARY

Introduction to design and realization of mechatronics systems. Micro computer architectures. Basic computer IO devices. Embedded microprocessor systems and control, IO programming such as analogue to digital converters, PWM, serial and parallel outputs. Electrical components such as power supplies, operational amplifiers, transformers and filters. Shielding and grounding. Design of electric, hydraulic and pneumatic actuators. Design of sensors. Design of power transmission systems. Kinematics and dynamics of robotics devices. Basic feedback design to create robustness and performance.

PREREQUISITES

E 25, E 26 (junior transfers students are exempt from this requirement), E 27, as well as EE 16A or EE 40

TOPICS COVERED

Introduce students to design and design techniques of mechatronics systems; provide guidelines to and experience with design of variety of sensors and actuators; design experience in programming microcomputers and various IO devices; exposure to and design experience in synthesis of mechanical power transfer components; understanding

TIME COMMITMENT

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

Made by Angela Lee, c/o 2019



([https://www.fairclough.com/faircloughbankerjey.edu/ugrad/current-students/peer-](https://www.fairclough.com/faircloughbankerjey.edu/ugrad/current-students/peer-review)

advising-

and-

and-

