Introduction to Mechatronics

• T-Th 2:00 – 3:45 PM, Physical Sciences #114
• Lab: JBE 111, 113, and 115, 24/7 access

• Instructor: Prof. Gabriel Hugh Elkaim
• TA’s: Max Lichtenstein and Marcello Guarro
• Tutors: Alexis Bartels, Eric Cao, Junheng Chen, Gordon Keller, Stephanie Owyang, Oliver Rene
Lab Sections

- Times when TA’s and Tutors are guaranteed to be in the labs:
  - Mondays 10 AM - 1 PM
  - Tuesdays 12-2 PM, 5-7 PM
  - Wednesdays 10-11 AM, 2-4 PM
  - Thursdays 11 AM – 2 PM, 5-7 PM
  - Fridays 10-11 AM, 2-4 PM
  - Saturdays 2-4PM (Oh, yes, we’ll be there)
Textbooks


Optional Textbooks (good references):

- “Mechanical Devices for the Electronics Experimenter,” by Britt Rorobaugh
- “The Cartoon Guide to Computer Science” by Larry Gonick
# Syllabus/Readings

**UNIVERSITY OF CALIFORNIA, SANTA CRUZ**  
**BOARD OF STUDIES IN COMPUTER ENGINEERING**

**CMPE118(218)/L: INTRODUCTION TO MECHATRONICS**  
**FALL 2015**

<table>
<thead>
<tr>
<th>Lecture</th>
<th>Reading (to be completed before the lecture)</th>
<th>Out</th>
<th>Due</th>
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<tbody>
<tr>
<td>-2 late September</td>
<td>CKO Ch. 9, 10, 11- Basic Electronics</td>
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<td></td>
<td><em>BasicCircuits I, BasicCircuits II, BasicOpAmps</em></td>
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<tr>
<td>-1 late September</td>
<td>CKO Ch. 1, 2, 3, 4- Intro, microprocessors, C code</td>
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<td>Microprocessors</td>
<td>CKO Ch. 31 – Troubleshooting</td>
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<td>0 Thur. 24/Sep/2015</td>
<td>CKO Ch. 5 – Event Driven Programming, event checkers, State Machines</td>
<td>Lab 0</td>
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<td>Course Introduction</td>
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<td>0.5 Last weekend of September</td>
<td>CKO Ch. 6 – Software Design, abstraction, architecture, testing</td>
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<td>ES Framework/HSM for Lab 0</td>
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<td>1 Tue. 29/Sep/2015</td>
<td>CKO Ch. 13 – Sensors</td>
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<td>Event Driven Programming, State</td>
<td>H+H Section 15.02 – Light levels</td>
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Grading

COURSE: 67% Labs and Projects
33% Quizzes, and Exams

QUIZZES, EXAMS: 20% Midterm (Take home)
12% Quizzes (weekly)
1% Participation

LABS AND PROJECT:
8% Lab 0
8% Lab 1
8% Lab 2
8% Lab 3
35% Project
Class Website

- https://classes.soe.ucsc.edu/cmpe118/Fall15/
Piazza (1.2)

https://piazza.com/ucsc/fall2015/cmpe118l/home
Piazza (2.2)

- https://piazza.com/ucsc/fall2015/cmpe118l/home
Lab Work (and what is expected)

- You will spend 20+ hours/week in the lab outside of the lecture
- This will go up for the last five weeks of class during the project
- "Prep work" is much more time efficient than trying to learn it on the fly
- Read (do NOT skim) everything we tell you
- Twice (maybe three times)
Lab Work (tips and hints)

• Do not attempt to “divide and conquer”
  – It is never faster
  – You never learn the parts you don’t do
  – The work is shoddy

• Proper preplanning prevents p***-poor performance
  – Pay attention to the prelabs

• You will make mistakes: it is expected
Academic Integrity

• Presenting someone else’s work as your own.

• Do NOT do it, not worth it
Questions?