EECS150: Components and Design Techniques for Digital Systems

Web Page:  http://www-inst.eecs.berkeley.edu/~cs150

News Group:  ucb.class.cs150

Professor:  Vivek Subramanian
viveks@eecs.berkeley.edu
571 Cory Hall
(510) 643-4535
Office Hours:  Tuesday/Thursday, 9-10am
  Friday, 8-10am

Or by appointment for urgent needs only (Find a free time on my online schedule
(http://www.eecs.berkeley.edu/~viveks/schedule.gif) and email me for confirmation)

Office hours may be cancelled occasionally. Please refer to my online schedule for confirmation
of office hours

My Policy on cheating:

  1) Anyone caught cheating will be failed and/or expelled from the University
  2) Activities classified as cheating include any activities that give you an unfair advantage
     over other students, including, but not limited to:
     a. Copying solutions from other students
     b. Sharing your solutions with other students
     c. Altering laboratory equipment to prevent other students from using it

TAs:

  •  Course Coordinator:  Mike Lowey: mike@lowey.net
  •  Gabriel Eirea:  geirea@eecs.berkeley.edu, Office Hours 297 Cory, Tu 4-5, W 2-3
  •  Mark Feng:  wushufeng@hotmail.com
  •  Jason Hu:  dodragon@uclink4.berkeley.edu
  •  Randy Huang:  rkhuang@uclink4.berkeley.edu
  •  Kerry Kimes:  ttk@eecs.berkeley.edu, Office Hours 297 Cory, M 12-1, Th 1-2
  •  Neha Kumar:  nheah@cory.eecs.berkeley.edu
  •  Richard Lu:  rlu@eecs.berkeley.edu
  •  Richard Pon:  rich98@uclink4.berkeley.edu
  •  Yuh Meei Seah:  ymseah@cory.eecs.berkeley.edu

Readers:

  •  Ming Wai Choy:  mchoy@cory.eecs.berkeley.edu
  •  Cuong (Duke) Hoang:  hanoi_hoang@yahoo.com
  •  Wen Hui Guan:  guanwh@yahoo.com
  •  Lijue Zhong:  lijuez@yahoo.com
Lectures: 10 Evans Hall
Tuesdays & Thursdays, 2:00pm-3:30pm

Discussions:
Section 101 – Mondays, 11:00am-12:00pm, 405 Davis Hall, Neha Kumar
Section 102 – Mondays, 2:00pm-3:00pm, 75 Evans Hall, Jason Hu
Section 103 – Mondays, 3:00pm-4:00pm, 71 Evans Hall, Richard Lu
Section 104 – Wednesdays, 10:00am-11:00am, 9 Evans Hall CANCELLED
Section 105 – Wednesdays, 4:00pm-5:00pm, 71 Evans Hall, Kerry Kimes
Section 106 – Thursdays, 9am-10am, 71 Evans Hall, Gabriel Eirea CANCELLED
Section 107 – Thursdays, 11:00am-12:00pm, 285 Cory Hall, Mark Feng

Lab Lecture: Fridays, 2:00pm-3:00pm, 10 Evans

Laboratories:
Section 011 – Mondays, 9:00am-12:00pm, 204B Cory, Yuh Meei Seah, Jason Hu
Section 012 – Mondays, 5:00pm-8:00pm, 204B Cory, Randy Huang, Mark Feng
Section 013 – Tuesdays, 9:00am-12:00pm, 204B Cory, Richard Lu, Kerry Kimes
Section 014 – Tuesdays, 5-8:00pm, 204B Cory, R. Huang, K. Kimes, R. Poon
Section 015 – Wednesdays, 9:00am-12:00pm, 204B Cory, Y. M. Seah, G. Eirea
Section 016 – Wednesdays, 5:00pm-8:00pm, 204B Cory, Richard Pon, N. Kumar
Section 017 – Thursdays, 9:00am-12:00pm, 204B Cory Hall, R. Lu, Richard Pon
Makup Lab – Fridays, 3:00pm-6:00pm, 204B Cory Hall, Rotating Assignment

• 7x24 lab is in 349 Davis, which is where the first lab will be held.

• The rest of the labs will be held in 204b Cory, into which the students are allowed only when a TA is present.

• There are also two complete lab setups in the Student IEEE office, 204A Cory.

Lab Policies

Our goal is to provide a safe and reliable environment contributing to your success in the course, and the following rules apply to the use of this lab. Those not following lab policies will be disciplined.

• Be aware of your environment, and take responsibility for your safety, especially when working alone or after dark. In case of an emergency, call 9911 using any Campus Phone.

• Be respectful of others and take good care of the lab and the equipment. Report any equipment problems to your TA, and make a log entry in the posted lab logbook.

• Do not modify any hardware or software.
• No eating or drinking in lab at any time. Lab must be left clean and orderly after each session.

• After the first week you will be given your individual account for which you will be responsible. Do not share your account/password, do not leave without logging out, and do not abuse the privilege.

Class Objectives:

• Understand digital logic at the gate and switch level including both combinational and sequential logic elements.
• Understand clocking methodologies to manage information flow and preservation of circuit state.
• Appreciate digital logic specification methods and the compilation process that transforms these into logic networks.
• Gain experience with computer-aided design tools for implementation with programmable logic devices.

Prerequisites: CS61C, EE 40 or 42


Deliverables:

• Homeworks are posted on Thursdays, collected the following Friday at noon. Submit assignments to CS150 homework box, on door of Cory 218.

• It is excellent practice to complete as much of your laboratory as you can before you actually arrive for your laboratory section in 204B Cory. Computers in 349 Davis are available with cardkey access for your use 24 hours a day/7 days a week (and you can also print out materials from the Course Web Page there).

• During the lab hours, TA's will help with problems and check off labs. If you don't get checked off during your assigned lab time, you can get checked off during the TA's office hours in 204B Cory or during the Make-Up lab Friday PM. Please DO NOT go to another lab section, as all the labs are very full.

• Labs must be checked off by Friday at 6pm (essentially the end of the open lab) during the week it is assigned (that is, one week after it is presented in lab lecture) for you to receive full credit. After that, half credit will be assigned for getting checked off up to one week late. If you don't complete the lab by the Friday of the following week, hand in what you have done for half partial credit.
• Students will work in groups of two for the first 6-7 labs. Your partner can be anyone from your assigned lab section, and can change from week to week.

• For the final project, you MUST select a partner from your lab section. Choose your lab section carefully.

• If you want to change lab sections, you need to find someone who can swap with you. The course coordinator is responsible for all lab section changes.

• The 204B lab is only open during lab sessions and TA office hours. It is reserved at other times for TA/staff maintenance and development. For your convenience, 349 Davis is open 24 hours a day, 7 days a week.

Grading

Homework (graded on effort, not correctness): 10%
Laboratories: 18%
Tests: 21%
Project: 31%
Final: 20%

Letter grades will be assigned based approximately on the following scale:

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<th>Grade</th>
<th>Percentage</th>
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Course Syllabus & Schedule

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<thead>
<tr>
<th>Week</th>
<th>Dates</th>
<th>Topics</th>
<th>Text Chapters (Provided as guide only; you are responsible for ONLY and ALL material covered in class unless specifically noted)</th>
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<td>2</td>
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<td>2.1-2.2, 6.1-6.4, 7.1</td>
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<td>3</td>
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<td>Week</td>
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<td>6</td>
<td>10/2, 10/4</td>
<td>Simplification and State Minimization</td>
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<td>Lab 6: Nasty Realities</td>
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<td>FSM Case Studies</td>
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<td>10/23, 10/25</td>
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<td>Midterm 2 (Covers weeks 6-8)</td>
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<td>10/30, 11/1</td>
<td>Arithmetic Circuits</td>
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<td>Computer Organization</td>
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<td>11/27, 11/29</td>
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<td>Makeup / Spillover / Additional Topics</td>
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<td>12/4, 12/6</td>
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