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ECS 154A - Computer Architecture

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License and Attribution

Content is licensed under CC BY-NC 4.0. See the [LICENSE](#) file for more information.

Credit for the course layout and some of the content is given to Jason Lowe-Power of UC Davis. Credit for a significant portion of the content is given jointly to Sean Davis and Matthew Farrens of UC Davis.

Class

Lecture

Monday, Wednesday, Friday: 8:00 9:40 AM via [zoom](#)

Note: Some lectures may be replaced with asynchronous lectures entirely. Announcements will be made on Canvas.

Discussions

TBD

There will be discussions during the first week of class.

Description

Introduction to digital design. Interfacing of devices for I/O, memory and memory management. Input/output programming, via wait loops, hardware interrupts and calls to operating system services. Hardware support for operating systems software.

Prerequisites and Unit Restrictions

(ECS 50) or (EEC 70) or the equivalent. Only 1 unit of credit allowed for students who have taken EEC 170.

People

Instructor

Daryl Posnett

Private communication to me should take place solely via [Canvas](#) direct messages. Unsolicited emails about the course will be ignored.

Office Hours

TBD - Online - Zoom Only

Changes to other office hours will be announced on [Canvas](#).

Teaching Assistants

Private communication to the TAs should take place solely via [Canvas](#) direct messages. Unsolicited emails about the course will be ignored.

Websites

GitHub

We will use [GitHub](#) as the main website for the course. It will also contain all of the documents for the course, such as labs, lecture notes, lecture outlines, the schedule, and the syllabus you're currently reading.

The versions of documents found on GitHub are the canonical versions of all documents. If I make changes to those documents, they will appear first here on GitHub. Other downloaded versions of documents may become out of date.

Github link will be uploaded during the first week.

Canvas

We will use [Canvas](#) communication and as the gradebook.

Other Important Information

Accommodations

The exam dates are available on the [schedule](#). Per [official UC Davis policy](#), if you have an accommodation request from the [Student Disability Center](#), or have any conflicts with exam times for religious observances, you must notify me by the **fourth class, Monday, 2020-01-13**.

Student Support

As a student, you may experience a range of issues that can cause barriers to learning, such as but not limited to:

- strained relationships
- increased anxiety
- alcohol/drug problems
- feeling down
- difficulty concentrating
- lack of motivation

These mental health concerns or stressful events may lead to diminished academic performance or reduce a student's ability to participate in daily activities.

UC Davis is committed to advancing the mental health and well-being of its students. If you or someone you know is feeling overwhelmed, depressed, and/or in need of support, services are available. You can learn more about the broad range of confidential mental health services available on campus via [Student Health and Counseling Services](#). In addition, you can learn about a variety of other resources for students at UC Davis on the [Pages tab of Canvas](#).

Academic Misconduct

Academic misconduct is a serious issue. Read the [Academic Misconduct Policy](#) of the Department of Computer Science for more detailed information on what constitutes academic misconduct. Any violations of the [Code of Academic Conduct](#) will result in reporting the violating student(s) to the [Office of Student Support and Judicial Affairs](#).

Public forks of this repository with assignment code in them abet cheating. Any public forks with code in them will be considered academic misconduct.

The labs will allow for partners. Feel free to share ideas with other groups. You may not share code or circuits, however. If you're looking at another group's code or circuits, odds are that you've gone past simply sharing ideas.

Assignments and Tests

Grading Breakdown

Labs (4x)	60%
Final	40%

Labs

You will complete five lab assignments throughout this course. The labs and their due dates can be found in their respective folders on the main page of this [GitHub](#) repository. All together, the labs are worth 60% of your final grade, though some labs may be weighted more than others.

For all labs, you are recommended to work with a partner, but it is not required. You do not have to keep the same partner throughout the whole quarter; you can change who you work with.

Late Assignments

If you turn in a lab late, you will lose points. The percentage of points you will lose is given below, where x is the number of hours you are late.

- $0 \leq x < 24$: 85% credit
- $24 \leq x < 48$: 70% credit
- $48 \leq x$: no credit

This will give you partial points up to 48 hours after the due date. This system is to encourage you to get some sleep and try again in the morning if you miss a deadline, rather than constantly working for hours after the deadline with no sleep as a linear drop-off system encourages.

Final

The final date and procedure will be announced. The final is cumulative. The final is closed-book and closed-note.

Readings and Schedule

Textbooks

The following textbooks are optional:

- *Computer Organization and Architecture* by William Stallings.
- *Digital McLogic Design* by Bryan Mealy and James Mealy.

Problems won't be assigned out of the textbooks; they're just there if you need further reference. Having them might be helpful, but my lecture notes should be sufficient.

For the Stallings book, we will be using the 11th edition but the 9th or the 10th may work for you. Note that I will not align pages for you, if you want to be sure that you have the right material then you should get the 11th edition. An eEdition of the book is fine, you will not need a hard copy unless that works better for you.

You can find a copy of the Mealy and Mealy book on [Canvas](#). See the [schedule](#) for reading dates for both books.

Schedule

See the official [schedule](#) on GitHub. Topics for future dates on the schedule are tentative and subject to change.