EEE64 / CpE64 Course Syllabus

Instructor:

Dennis Dahlquist dahlquist@ecs.csus.edu
Office RVR3030 (916) 278-6185
Zoom Office hours https://csus.zoom.us/j/339311473

Course Websites:

Course site, ECS (Moodle): https://moodle.ecs.csus.edu/
Canvas information: https://csus.instructure.com/
Course Zoom link: https://csus.zoom.us/j/861758427

General information: https://athena.ecs.csus.edu/~cpe64

COURSE PREREQUISITES:

This course does not require any calculus, physics, or chemistry background, but students must meet a programming prerequisite: either CSc 15 or CSc 25 or Engr 50. A high school course in "C" or Java is sufficient. In addition, students are expected to have Windows and Internet access experience.
The difficulty level of CpE/EEE 64 will match junior and senior level engineering design courses; students should reserve plenty of time to prepare for the labs and study time for this course.

COURSE OBJECTIVES to learn and be able to design with:

1. Binary number system.
2. Combinational and sequential logic.
3. Logic circuits and Trouble shoot them
4. Programmable Logic Devices: registers, memories and counters.

COURSE DESCRIPTION:

This course covers the following topics: logic gates, binary number system, conversion between number systems, Boolean algebra, Karnaugh maps (K-maps), digital combinational logic design, flip-flops, programmable logic devices (PLDs), counters, registers, memories, state diagrams, state machines, designing state machines circuits and transferring them into PLDs, and basic computer architecture. Lab emphasizes the use of software equation entry design tools, and the use of a logic simulation design tool. Lab assignments are design-oriented. Cross-listed as EEE 064. 4 units.

Specific type of circuits covered: Integrated circuits using digital logic gates and Programmable Logic Devices (PLDs) these include FPGAs.

Application software: National Instruments Multisim, Integrated Design Environment (IDE), Quartus from Intel for Verilog compilation and downloading to the PLD/FPGA and Mod Sim for simulation. (note: Quartus can be downloaded for free from www.Intel.com).

Cross listed course:

This is course is a cross listed course, EEE64 and CpE64 are combined course.
The format for the course is in a lecture and lab. Both the lecture and lab sections must be passed to pass the course. The lab grades are reported to the lecture instructor, the lecture grade is combined with the lab grade for an overall course grade.

LECTURE:

Exams: There will be two midterms and a final exam. The midterms and final exam will be open book. The Homework assignments and quizzes summed together are equivalent to a midterm score, as is the final project for the course. The lecture exams and homework assignments and project will account for 3/4 (75%) of the course grade.

Lecture Course Format: The course maybe listed as hybrid and/or online. In order to meet various student learning needs the course is design to be flexible. The lecture section is in a flexible course format (modality) there are recorded videos for review and help sessions that can be attended synchronously or asynchronously. Student are encouraged to work together and help each other. For course help there are; recorded lectures, course notes and videos, help sessions, course question and discussion forum, commination with the instructor the instructor (during class, email, help sessions), and office hours - appointments with the instructor.
Attendance is not mandatory, but course assignments must be done to complete the course.

LABORATORY:

The Laboratory is used to program, test and debug and run various lab assignments. Lab is for getting help from the instructor, for demonstrating student lab assignments, and to turn in lab reports in when due.

Labs: You will want to refer to your lab instructor for lab assignments . The total score of lab is 1 /4 (25%) of the total course grade. Each Lab will have lab demos, and lab report.

Programming:

Programming will require spending some time on using various Integrated Design Environments (IDE) for editing, loading, running, and debugging.

Grading: The final grade for EEE64 – CpE64 will be a merger of Lecture & Lab (75% for Lecture and 25% Lab).

Important - you must pass **both lecture and lab** independently to pass this course!
Homework and Quizzes: Homework and quizzes assignments will be made. It is helpful to know how to do the assignments because many similar problems will appear on the exams.

TEXTBOOKS:

Recommended:
Logic and Computer Design Fundamentals, Mano & Kime. 4rd Edition or 5th edition
ISBN: 0-13-198926-9

Open source books: **Lessons in Electric Circuits** **Volume IV - Digital**

ACADEMIC INTEGRITY:

Please refer to the University Policy Manual for Academic Honesty, Policy & Procedures:
http://www.csus.edu/umanual/student/UMA00150.htm

Library's Plagiarism Website (http://library.csus.edu/content2.asp?pageID=353)
The faculty of the Department of Electrical and Electronic Engineering expects all students to conduct their academic work with the high ethical standards of the engineering profession.

Each exam and programs must represent your own work. You may help other students by discussing assignments, but you must not copy anyone's solution. Violations of these standards of academic integrity will result in appropriate action.

Professionalism:

Employers frequently call faculty before hiring new graduates. The first question generally serves to verify that the student knows the ECS material. All the remaining questions cover the student's professionalism, integrity, punctuality, dependability, ability to work with others, and ability to follow instructions! The faculty at CSUS know many of the employers, and it is .very important to us that our graduates meet the highest standards of professional responsibility. Thus you will absolutely be required to meet the lab deadlines in this class and they must be turned in at the time and date specified. Late assignments will not be accepted; all students must be present for all exams: do not schedule any travel prior to your exams. Failure to meet these standards will result in a grade of 0 for the lab assignment or exam missed. Allowances may be made for verified illness.

ABSOLUTELY NO CHEATING WILL BE TOLERATED! The penalties for cheating may include an F for the exam and/or for the course.

Students with Disabilities: If you are a student with a disability, I encourage you to contact services to Students with Disabilities: by telephone 916-278-6955, or 916-278-7239 (TTY); by email sswd@csus.edu; or on the Web at http://www.csus.edu/sswd .

Sac State Library:

As a Sac State student you have access to the various resources offered by the library such as book checkout, study areas, computer labs, online tutorials, research databases, etc. To learn more about available resources visit the Sac State Library website (http://library.csus.edu/).

Student Computing Labs:

Students can use any of the IRT managed student computer labs on campus. Visit the University Labs website (http://www.csus.edu/uccs/labs/generalinfo/about.stm) for information about locations, hours, and resources available.

Canvas (Sac State's LMS):

Canvas is the course management system used on the Sac State campus for online courses or for courses that have some component online. To access a course on Canvas, you must login from the https://canvas.csus.edu/.

To learn more about Canvas visit the Student Resources webpage (https://www.csus.edu/canvas/students.html) where you can view online Tutorials, FAQ's and other help resources.

Writing Center:

For free, one-on-one help with writing in any class, visit the University Writing Center in Calaveras 128. The University Writing Center can help you at any stage in your reading and writing processes: coming up with a topic, developing and organizing a draft, understanding difficult texts, or developing strategies to become a better editor. To make an appointment or a series of appointments, visit the Writing Center in CLV 128 or call 278-6356. For current Writing Center hours and more information, visit the Web site at www.csus.edu/writingcenter

Some Campus Resources:

The descriptions and due dates are subject to change.

Zoom Netiquette:
Please treat the Zoom meetings as if you are in the classroom.

Here are some tips to follow when joining the Zoom meetings:

- **Mute your microphone**: To help keep background noise to a minimum, make sure you mute your microphone when you are not speaking.
- **Be mindful of background noise**: When your microphone is not muted, avoid activities that could create additional noise, such as shuffling papers.
- **Position your camera properly**: If you choose to use a web camera, be sure it is in a stable position and focused at eye level, if possible. Doing so helps create a more direct sense of engagement with other participants. Use of your webcam is encourage to help build class community and helps all of us in the class to communicate and provide feedback.
- **Limit distractions**: You can make it easier to focus on the meeting by turning off notifications, closing or minimizing running apps, and muting your smartphone.
- **Avoid multitasking**: You'll retain the discussion better if you refrain from replying to emails or text messages during the meeting and wait to work on that PowerPoint presentation until after the meeting ends.
- **Prepare materials in advance**: If you will be sharing content during the meeting, make sure you have the files and/or links ready to go before the meeting begins.
- Please take a look at the following link to review more netiquette practices: **Humboldt State University Communication and Netiquette Expectations**

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