

EEE / CPE 64 - Intro To Logic Design (4 Units)

Covers the following topics: logic gates, binary number system, conversion between number systems, Boolean algebra, Karnaugh maps, combinational logic, digital logic design, flip-flops, programmable logic devices (PLDs), counters, registers, memories, state machines, designing combinational logic and state machines into PLDs, and basic computer architecture. Lab emphasizes the use of software equation entry design tools, the use of a schematic entry, and the use of a logic simulation design tool. Lab assignments are design-oriented. Lecture three hours; laboratory three hours. Prerequisite: CSC 15 or CSC 25 or Engr 50

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.

Topics Covered:

Digital Design - M. Moriris Mano and Michael d. Ciletti Pearson – PrenticeHall 5th edition

- Binary Codes Book Chap. 1.7
- Boolean Algebra and Logic Gates - Book Chap. 2
- Gate Level Minimization - Book Chap.3
- Combination Logic, Circuits and Design - Book Chap.4-1 to 4.11
- Sequential Circuits - Book Chap.Ch 5 except 5.6
- Registers and Counters - Book Chap.6 to 6.5

Structured Computer Organization, Andrew S. Tanenbaum Pearson – Prentice Hall 5th Edition

- Computer organization - Book Chap. Ch 2.1, 2.2 and 2.4.1
- The Microarchitecture Level - Book Chap. 4.1

LABORATORY:

The Laboratory is used to program, test and debug and run various programming assignments. Lab is used mainly to get help from the instructor, for demonstrating student programs, and to turn lab reports in when due. LAB Assignments: to receive full credit for a lab students must demonstrate correctly working programs to the instructor on the day that the demonstration is due.

The total score of lab is 1 /4 (25%) of the total course grade. Each Lab will have a pre lab, lab demo, and lab report.

LECTURES:

Exams: There will be two midterms and a final exam. The midterms and final exam. The lecture exams and Homework assignments will account for 3/4 (75%) of the course grade.

Programming:

Programming will require spending some time on using various Integrated Design Environments (IDE) for editing, loading, running, and debugging. Altera Corporation encourage students to install the IDE application software. (Quartus software is now available for free download.) CpE/E&EE 64 students will need email and Internet access to get licensing files for the application software. CpE/E&EE 64 students will also need an ECS account to use lab computers and class accounts.

Instructor: Prof. Vadhva Office: RVR5022 email vadhva@csus.edu
Office Hours: Tuesdays 12:30 – 1:15 PM and Wednesdays 1:00 -2:00 PM

TEXTBOOKS:

Digital Design - M. Moriris Mano and Michael d. Ciletti Pearson – Prentice Hall 5th Edition

Grading:

The final grade for EEE64 – CpE64 will be a merger of Lecture & Lab (75% for Lecture and 25% Lab).
(Exam 1 - 25%; Exam 2 - 25%; Quizzes 25%)

Important - you must pass **both lecture and lab** independently to pass this course!

Final Exam Schedule:

Thursday, May 17 at 12:45 – 2:45 PM in RVR 1006

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](http://library.csus.edu/) 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.

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](http://www.csus.edu/writingcenter) in CLV 128 or call 278-6356. For current Writing Center hours and more information, visit the Web site at www.csus.edu/writingcenter

The descriptions and due dates are subject to change.