

EE 261 Digital Design I - (4 Credits)

Spring, 2004

Klipsch School of Electrical and Computer Engineering
College of Engineering
New Mexico State University

Time	Monday, Wednesday, Friday 8:30 AM - 9:20 AM Thomas and Brown Hall, rooms 104 (Lecture), 305 (Lab)
Instructor	Dr. Krist Petersen Goddard Hall, room 102 (505) 646-2912 kpeterse@nmsu.edu
Office Hours	Monday, Wednesday, Friday 9:30 AM - 10:30 AM Tuesday, Thursday 8:30 AM - 9:30 AM
Course Description	Design of combinational logic circuits. Introduction to state machine design Implementation using programmable logic devices and micro-controllers.
Prerequisite	A grade of `C`, or better, in EE 111 and EE 161.
Corequisite	MATH 192
Required Materials	<u>Fundamentals of Digital Logic with VHDL Design</u> , by Brown and Vranesic EE 261 Lab Kit
Recommended Materials	TTL Data Book, by Texas Instruments (any edition)
Objectives	Upon completion of EE 261 a students will be able to: Work comfortably with binary arithmetic. Manipulate combinational Boolean expressions using theorems. Simplify combinational Boolean expressions using Karnaugh maps. Implement combinational Boolean expressions using TTL logic devices. Design circuits with a mixture of asserted High and asserted Low signals. Understand and draw realistic timing diagrams of TTL logic devices. Use a CAD tool to design and simulate combinational digital logic. Write VHDL descriptions of combinational logic expressions. Design and implement a practical solution to realistic word problems. Use sequential logic devices to store and manipulate values.
Web Address	www.ece.nmsu.edu/~kpeterse/EE261

Relationship of the Course to Program Objectives

The educational program objectives of the Klipsch School of Electrical and Computer Engineering are to provide students the broad educational background and skills necessary for a successful, fulfilling and life long career in electrical and computer engineering. Toward these ends, EE 261 serves as a core course, providing the student with introductory exposure to digital logic systems. Such systems are the basis for all modern designs, and as such, integral to all areas of Electrical and Computer Engineering. Upon completion of EE 261, students may continue their computer engineering education by enrolling in EE 361 or EE 363. In EE 361 students study the design and implementation of sequential digital logic and finite state machines. EE 363 introduces students to the fundamentals of computer architecture.

Grading

		93-100	A
Homework	15%	84-92	B
Exams	60%	73-83	C
Lab	25%	65-72	D
		0-64	F

A grade of `I` (incomplete) will only be issued in circumstances, beyond the student's control, which prevent completion of the required work. Any request for a grade of `I` must be documented, and the cause(s) must occur after March 11, 2004. A student must be passing the class on March 11, 2004 in order to qualify for an `I`.

A grade of `W` (withdrawn) will only be issued prior to March 11, 2004.

Homework

Homework is due at the beginning of the next class period. Late homework is graded 50% off and will be accepted for a period of one week after it was assigned. At least one-half of the homework assignments must be turned-in, on time, to pass the class. Most exam questions are similar (or even identical) to homework problems. The best way to study for the exams is to do the homework. You are encouraged to form study groups and solve the problems together, but each student must turn in their own work.

Quizzes

Quizzes are unannounced and generally cover material from the homework due that day. No make-up quizzes will be given. Quizzes will be averaged in as homework assignments.

Exams

Exams are closed book, closed note (TTL Data Books may be used). The lowest exam grade will be replaced by a duplicate of your final exam grade, thus one exam (other than the final) may be missed without fatal effects. If your final exam score is the lowest, no adjustment will be made. No make-up exams will be given.

- Lab** Labs are an integral part of this class. Any student missing more than three labs will fail the class. The lab and the lecture are not separate classes and may not be taken separately. Failure to pass the lab or the lecture will result in having to repeat both.
- Attendance** No attendance will be taken in lecture. However, inasmuch as the quizzes are unannounced, it will behoove you to attend lecture on a regular basis. Attendance will be taken in lab. Failure to attend lab will result in automatic failure of the class, regardless of other grades.
- Academic Dishonesty** Departmental policy states students found guilty of academic dishonesty (copying, plagiarism, unauthorized collaboration or references, etc.) will be suspended from the university
- Students with Disabilities** If you have or believe you have a disability, you may wish to self-identify. You can do so by providing documentation to the Office for Services for Students with Disabilities, located at Garcia annex (phone 646-6840). Appropriate accommodations may then be provided for you. If you have a condition which may affect your ability to exit safely from the premises in an emergency or which may cause an emergency during class, you are encouraged to discuss this in confidence with the instructor and/or the director of Disabled Student Programs. If you have general questions about the Americans with Disabilities Act (ADA), call 646-3635.