

**Department:** CSE

**Course No.:** CSE 210W

**Title:** Digital Logic Design

**Credits:** 4

**Contact:** Marty Wood

**WQ:** W

**Catalog Copy:** CSE 210W Digital Logic Design - Fall semester Four credits Three class periods and one 2-hour laboratory period. Prerequisites: Secondary school physics or PHYS 101 or PHYS 151Q and CSE 110C or CSE 123C or CSE 130C or CSE 133. Open to sophomores or higher.

Representation of digital information. Analysis design, and evaluation of combinational and sequential logic circuits. Debugging techniques. Use of computer facilities for circuit simulation, CAD, and report preparation and presentation. Introduction to structure and operation of digital computers. Design projects. Written reports with revisions are required for each project.

**Course Information:** Debugging techniques. Use of computer applications for circuit design/simulation. Analysis, design and evaluation of combinational and sequential logic circuits. There will be two one-hour preliminary exams and a two-hour final exam. The lowest preliminary exam grade will be dropped and replaced by the final exam grade, if the final exam grade is higher. There will be formal assessment and demonstrations of the implemented lab projects. There will be three major design projects of 3-4 weeks duration. Additionally there will be 5-6 smaller projects implemented in hardware and assessed in the lab. Large Design projects and reports 30% Smaller projects and assessments 30% Exam 1 10% Exam 2 15% Final Exam 15%

**W Criteria:** The laboratory experiments demonstrate principles covered in class and in the reading assignments. Therefore, conducting and documenting the results of an experiment or constructing a device or code helps to clarify these principles. Each student will submit a formal report for each of the three major design projects (30%). Each of these will require weekly interim reports (two or three per project), which will be marked and returned for revisions. These revisions will be incorporated into the final project report (minimum of 15 pages, double spaced, finished pages). Grades for the revised reports will be used to compute the course grade. These grades will be based heavily on the writing as well as the technical content. Other required reports include the documentation for the smaller projects (lab reports plus circuit diagrams 30%) which are also evaluated for writing as well as technical quality. Each student must pass the writing component of the course in order to earn a passing course grade. 2. The primary modes of written instruction to students are: \*Formal classroom instruction supplemented by a handout prescribing a format or an example. \*Written commentary from the teacher of record or faculty project advisor \*Individual/group conferences \*Oral presentation instruction is by

example 3. Each student will submit a formal report for each of the three major design projects. Each of these will require weekly interim reports (two or three per project), which will be marked and returned for revisions. These revisions will be incorporated into the final project report. Grades for the revised reports will be used to compute the course grade. These grades will be based heavily on the writing as well as the technical content. Other required reports include the documentation for the smaller projects (lab reports plus circuit diagrams), which are also evaluated for writing as well as technical quality. Each student must pass the writing component of the course in order to earn a passing course grade.

**Laboratory Courses Description:** -Laboratory work will involve the use of computer tools including LogicWorks, a circuit CAD package, as well as prototyping and testing small digital circuits using SSI and MSI components. Students will work in teams on at least one design project. Additionally, There will be three major design projects of 3-4 weeks duration. Additionally there will be 5-6 smaller homework projects implemented in hardware and assessed in the lab. Thus incorporating theoretical principles and hands-on application and analysis.

**Role of Grad Students:** -The TA's, usually two per section, are responsible for attending and grading pre-lab oral conferences with students and for overseeing laboratory safety and equipment operations during all experiments. They will not grade the written reports unless they attend and complete the W course training provided by the University. They are supervised by the faculty instructors.