

ECE 272 – Digital Logic Design Laboratory

Catalog Description: Laboratory to accompany ECE 271, Digital Logic Design. Illustrates topics covered in the lectures of ECE 271 using computer-aided design, verification tools, and prototyping hardware.

Credits: 1 **Terms Offered:** Fall, Spring

Prerequisites: ECE 112 or ENGR 201, and ECE 271 (concurrent enrollment in ECE271 acceptable)

Courses that require this as a prerequisite: None

Structure: One 170-minute laboratory section per week. Students must study and prepare the experiments before coming to the lab sections, and prepare a report on their work due one week after the section when they completed their lab section.

Instructors: M. Shuman

Course Content:

- Electronic design tools
- Logic reduction and implementation
- Combinational logic and modules
- Mixed signal design
- State machines
- Serial communications

Measurable Student Learning Outcomes:

At the completion of the course, students will be able to...

1. **Design** combinational and sequential system using integrated circuits available in the market (ABET Outcomes: A,C,K)
2. **Implement and test** the designed circuits using current laboratory equipment and testing techniques (ABET Outcomes: A,C,K)
3. **Develop** a small project, which usually consists of the design of a digital controller. The controller specification is provided in text form, and the students are exposed to all design phases: formal specification, design of gate networks, implementation, and test (ABET Outcomes: A,B,C,E,K)
4. **Report** the development of the experiments and laboratory results in written form (ABET Outcome: G)

Learning Resources:

- Laboratory Notes and Manuals: <http://eecs.oregonstate.edu/education/courses/ece272>
- TekBot upgrade kit, cost included in course fee

Students with Disabilities:

Accommodations are collaborative efforts between students, faculty and Disability Access Services (DAS). Students with accommodations approved through DAS are responsible for contacting the faculty member in charge of the course prior to or during the first week of the term to discuss accommodations. Students who believe they are eligible for accommodations but who have not yet obtained approval through DAS should contact DAS immediately at 737-4098.

Link to Statement of Expectations for Student Conduct:

<http://oregonstate.edu/admin/stucon/achon.htm>

Revised: 9/1/07

Revised Students with Disabilities: 2/15/11