

## ECE230: Digital Logic Fundamentals Fall 2018

Instructor: Dr. Wen Li  
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Class Hours: M W F: 8:00 – 8:50 am  
Classroom: 100 Packaging Bldg  
Course Website: <https://d2l.msu.edu/d2l/home>  
Office Hours: MW: 4:00-5:30pm or by appointment  
RM2308A Engineering Building

**Prerequisite(s):** CSE 131 or CSE 231

### **Required Text**

Brown, Vransic. “Fundamentals of Digital Logic with VHDL Design,” Third Edition, McGraw-Hill, 2009, ISBN= 0077221435.

### **Reference Books**

1. Marcovitz, “Introduction to Logic Design,” McGraw-Hill, 2002. ISBN: 0-07-247699-0. (Reserved in the Main Library)
2. Katz, “Contemporary Logic Design,” Benjamin Cummings Publishing Company, 1994, ISBN: 0-8053-2703-7. (Reserved in the Main Library)
3. Perry, “VHDL Programming by Example,” McGraw-Hill, 2002. ISBN: 0-07-140070-2. (Electronic resource through the MSU Library)

### **Course Outline**

Chapter 1: Design Concepts  
Chapter 5: Number Representation and Arithmetic Circuits  
Chapter 2: Introduction to Logic Circuits  
Chapter 4: Optimized Implementation of Logic Functions  
Chapter 6: Combinational Circuits Building Blocks  
Chapter 7: Flip-Flops, Registers and Counters  
Chapter 8: Synchronous Sequential Circuits  
Chapter 9: Asynchronous Sequential Circuits  
Chapter 10: Digital Circuit Design

### **ABET Syllabus:**

[http://www.egr.msu.edu/ece/courses/syllabi/ece230\\_syllabus.html](http://www.egr.msu.edu/ece/courses/syllabi/ece230_syllabus.html)

## **Grading Policy**

There will be 3 50-minute exams, 6 projects (5 individual, 1 group), and various homework assignments. Graded homework assignments and projects will be returned. Exams will be returned in class and then re-collected. For regrades, please see “Regrade Policy” section. In the event that you must miss an exam (for any reason), the makeup exam will be arranged with the instructor. The request for the makeup oral exam must be made prior to the exam day and approved by the instructor.

## **Grade Breakdown**

Exams:	60% total (3 exams, 20% each)
Homework:	10% total (30 points each, normalized)
Mini Projects:	15% total (individual projects, 3% each)
Final Project:	15% (group project)

Exam Dates: Sept. 26<sup>th</sup> (Exam 1), October 31<sup>st</sup> (Exam 2), December 5<sup>th</sup> (Exam 3)

Final Exam: There is no final exam. The final project will take place of the final exam.

## **Grading Scale (Not on a curve)**

≥ 90% = 4.0	≥ 85% = 3.5
≥ 80% = 3.0	≥ 75% = 2.5
≥ 70% = 2.0	≥ 65% = 1.5
≥ 60% = 1.0	< 60% = 0.0

## **Attendance Policy**

Attendance is required. Spartan Life, Section 2.3.3: “The student shares with the faculty the responsibility for maintaining the integrity of scholarship, grades, and professional standards”

## **Academic Integrity**

Student Life, Section 2.3.3: “The student shares with the faculty the responsibility for maintaining the integrity of scholarship, grades, and professional standards”. In addition, the (insert college/department/school name) adheres to the policies on academic honesty as specified in General Student Regulations 1.0, Protection of Scholarship and Grades, and in the all-University Policy on Integrity of Scholarship and Grades, which are included in Spartan Life: Student Handbook and Resource Guide.

All course work should be completed entirely on your own. You are encouraged to discuss general concepts and ideas in homework or lab assignments.

Students who commit an act of academic dishonesty may receive a 0.0 on the assignment or in the course.

## **Classroom Policy**

Spartan Life, Section 2.3.5: "The student's behavior in the classroom shall be conducive to the teaching and learning process for all concerned." This means that I do not appreciate sleeping, reading the paper, ringing cell phones, etc. Please try to develop your professional skills while in this class.

## **Regrade Policy**

If you would like for me to look at the grading of an assignment, please send me an e-mail which details the reason why you feel you deserve more credit. Then, re-submit the assignment to me and I will reply to your e-mail with my decision. Be aware that I randomly make photocopies of your assignments.

## **E-Mail Policy**

All e-mails to me regarding this course should start the subject with "ECE230". E-mail questions will be replied to within 24 hours of receipt (during the semester). I reserve the right to respond on Monday to e-mails sent to me on Friday. If you wish to request a meeting with me via e-mail, I suggest e-mailing me more than 24 hours in advance. Please send me three days/times that you can meet.

## **Calculator Policy**

Calculator is permitted in the exams unless it has features described on the "Prohibited" list below. A list of approved calculators can be found in D2L course website.

- Pocket organizers
- Handheld or laptop computers
- Electronic writing pads or pen-input devices
- Calculator built into cell phones or other electronic communication devices
- Calculators with a typewriter keyboard (key in QWERTY format)

## **Assignment Policy**

1. **All assignments are collected at the beginning of class. It will be closed in FIVE minutes after the class starts! No exceptions!**

(a) In the case that you have a special event (doctor's appointment, etc.) scheduled during the class time, you should turn your assignment in early (see below). This will account for situations where you get stuck in traffic, etc. It is your responsibility to get the assignment to me on time.

(b) If you are sick, you need to show me a doctor's note stating that you were unable to attend class. I will then accept your late assignment.

(c) If you have a family emergency, please e-mail me as soon as possible. We can make arrangements at a later date. Family comes first.

2. Write neatly.

3. 1 staple, upper left corner.

4. Box answers, when applicable.

You are strongly encouraged to make a copy of your assignments before turning them in. This is advice that you may want to use in all of your courses. There are at least 2 benefits to this:

- In case the instructor loses your assignment, at least you have a copy.
- In case the instructor is unable to return the graded assignment in time for an exam, you have a copy.

Note: You are also encouraged to turn assignments in early.

Also, if I find the assignment under my office door when I get back from lecture, it will not be accepted.