SIE 370 Embedded Computer System  
Spring 2015

Instructor:  Yuetong Lin

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Office Hours: MWF 3:00–4:00, and by appointment  

Lecture Time and Location: MWF 2:00 PM - 2:50 PM, Chavez Room 400  

Lab room: Old Engineering Room 256  

Teaching Assistant: Mr. Yifei Yuan

Office: Room 306  
Email: yifeiyuan@email.arizona.edu  
Office hours: By appointment  

Grader: Mr. Dhruva Kapoor

Office: Room 306  
Email: dhruvakapoor@email.arizona.edu  
Office hours: Tuesday- 1:00 PM to 3:00 PM  
Thursday- 11:00 AM to 1:00 AM  

Course Catalog Information: Boolean algebra, combinational and sequential logic circuits, finite state machines, simple computer architecture, assembly language programming, and real-time computer control. The computer is used as an example of systems engineering design; it is analyzed as a system, not as a collection of components.  

Course Learning Outcomes: Students should be able to  

• Understand number systems, Boolean algebra, Karnaugh maps, and digital logic design program so that you can design, build and test digital circuits.
• Know how to devise a state machine to describe the actions of a microprocessor based system.
• Understand how to translate a software implementation of a system into a hardware implementation or vice-versa.
• Construct actual microprocessor systems using integrated circuit devices, clocks, and other electrical components.
• Know how to analyze a problem that can be solved using a digital logic system and successfully design that system.

Prerequisites: ENGR102 and ENGR 211M or ECE 207.


Required Equipment: Arduino Uno Rev3: The Arduino Uno is a microcontroller board based on the ATmega328. They can be bought from Amazon.com, eBay, and various other internet vendors. You can even find them locally at RadioShack, or hobby and specialized electronics stores.

Class Website: Course material, announcements, grades and other pertinent course information will be posted on the course’s D2L website (http://www.d2l.arizona.edu). Students should regularly visit the D2L site to stay up-to-date with the course announcements.

Homework: Homework will be assigned on a regular schedule. Late homework will not be accepted (unless it is the result of an officially excused absence).

Laboratory Sessions: This is a 4 credit course for a reason. There are eight (tentative) laboratory assignments. The meeting times of laboratory periods will be determined in the second week of class. You will work in pairs. You can choose your partner. There will be a separate syllabus for the laboratory sessions, and it will be discussed in the first laboratory meeting.

Working Together: It is acceptable to work together on homework assignments. However, no copying is allowed. Each student must turn in their own homework assignment in his/her own words. All parties involved in homework copying will receive zero grade on the assignment.
**Academic Dishonesty and Plagiarism:** All UA students are responsible for upholding the Code of Academic Integrity, available through the office of the Dean of Students and online (http://deanofstudents.arizona.edu/codeofacademicintegrity).

**Grading Policy:** Semester grades will be based on five components:

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Homework</td>
<td>20%</td>
</tr>
<tr>
<td>First Midterm</td>
<td>15%</td>
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<tr>
<td>Second Midterm</td>
<td>15%</td>
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<tr>
<td>Lab Assignments</td>
<td>30%</td>
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<tr>
<td>Comprehensive Final Exam</td>
<td>20%</td>
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</tbody>
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**Grade Dispute:** You can dispute your grade (including homework, labs, and exams) and get it resolved within ONE week after the graded work is returned, after which time grading issues regarding that specific assignment, report, or exam will no longer be accommodated. All grading questions should be addressed to the teaching assistants directly.

**Final Grades:**

<table>
<thead>
<tr>
<th>Grade</th>
<th>Range</th>
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<tbody>
<tr>
<td>A</td>
<td>90 - 100</td>
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<tr>
<td>B</td>
<td>80 - 89</td>
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<tr>
<td>C</td>
<td>70 - 79</td>
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<tr>
<td>D</td>
<td>60 - 69</td>
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<tr>
<td>F</td>
<td>0 - 59</td>
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