Course Missive

Fall 2015

Time: MWF 11:00 – 11:50 AM
Place: CIT 477 (Lubrano)
Instructor: Steven Reiss (`spr`)
TA: Marcelo Martins (`martins`)
Website: http://cs.brown.edu/courses/csci1600
Mailing List: `cs160.2015-16.f@lists.cs.brown.edu`

1 Course Prerequisites

We expect students taking this course to have a good programming background such as that provided by either CS032 or CS036, as well as a hardware background such as that provided by CS031 or CS033. While we will try to make the course somewhat language-agnostic, some familiarity with C and Java might be helpful. If you have questions regarding your background, please talk to the professor.

2 Topics Covered

The course can be broken down into three different aspects:

1. Hardware
    - Circuit and logic diagrams
    - Device characteristics

- Generally, how hardware constrains the software

2. Software Engineering
   - Programming tools/techniques for writing embedded and real-time systems
   - Appropriate software architectures
   - System modeling
   - Design methodology
   - Verification techniques and debugging
3. System Issues
   - Threads
   - Interprocess communication
   - Real-time operating systems
   - Fault tolerance/recovery
   - Interrupt processing
   - Various forms of task scheduling
   - Security

3 Reading Material

Text: Edward Lee and Sanjit Seshia. *Introduction to Embedded Systems: Architecture, Programming and Design,* 2nd Edition. Available online at http://leeseshia.org

Other readings will be assigned in class as appropriate.

Watch the calendar page of the website for required readings.

4 Collaboration Policy

All the work you turn in should be your own. You may borrow small pieces of code from published articles or the web as long as:

- What is copied is clearly denote in your handins. This should include proper copyright notices and full acknowledgements and references.
- What is copied does not form the majority of the handin or assignment either in size or complexity,

You may work in teams on programming assignments as long as:

- The assignment handout specifically allows it.
- You agree in advance that both parties will get the same grade (no differential grading).
- You acknowledge that we might expect a better handin if there are more people working on a project.
- You ensure that both parties understand all aspects of the code.

5 Late Policy

Assignments should be handed in on the deadline day given on the course calendar. You will be penalized 25% of the assignment's value for each day it is late (but you will not be penalized for more than the assignment's value.)

Extensions might be provided given the permission of the professor.

6 Graded Work

Work for this course will consist of programming assignments, occasional written homeworks, and a final exam. The expected makeup of a CSCI 1600 final grade is as follows:

- Programming assignments: 15% for each
- Final project: 45%
- Final exam: 15%
- Homework and class participation: 10%

Many of the programming assignments will be geared towards your doing embedded and real-time programming needed to breath life into your final project. We expect you to be creative, as we hope to get several interesting ideas out of this course.

Programming assignments should be handed in using the `cs160handin` script located in `/course/cs160/bin`. We will include specific instructions with each assignment.

7 Announcements and Questions

Announcements will be posted on the CSCI 1600 mailing list, and may also be posted on the front page of the web site.