

## ECE471: Embedded Systems

**Credits:** 3

**Instructor:**

Vincent Weaver

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Office: Barrows 203

Office Hours: Drop-in (between 10am and 5pm) or e-mail to arrange an appointment

**Course Website:**

[http://www.eece.maine.edu/~vweaver/classes/ece471\\_2014f/](http://www.eece.maine.edu/~vweaver/classes/ece471_2014f/)

**Lectures:** Tuesday/Thursday 9:30am-10:45am, Barrows 130

**Final Exam:** Thursday 18 December 2014, 9:30am-11:30am, Barrows 130

**Course Listing:**

Application of micro-processors to the solution of design problems, including hardware characteristics, peripheral control techniques and system development. Lec 3. (Fall.)

**Content this Semester:**

We will investigate modern embedded systems, with a focus on ARM processors.

**Pre-requisites:**

ECE271 or permission

**Textbook:**

None

**Hardware:**

We will be using a Raspberry Pi Model B (or B+).

You may use your own, otherwise one can be loaned for the duration of the semester.

**Preliminary List of Topics:**

- Intro to Embedded Systems
- Computer Architecture Review
- ARM Processors and Assembly Language
- Embedded Busses and Communication
- Embedded Operating Systems
- Real Time Systems
- Power / Energy Concerns
- Security Concerns

**Grading:**

Class Participation (5%)

11 homework assignments (lowest one dropped) (40% total)

1 project (15%)

1 midterm exam (20%)

1 final exam (20%)

**Late Work:** Late work is penalized at 20% a day.

**Academic Honesty Statement**

Academic honesty is very important. It is dishonest to cheat on exams, to copy term papers, to submit papers written by another person, to fake experimental results, or to copy or reword parts of books or articles into your own papers without appropriately citing the source. Students committing or aiding in any of these violations may be given failing grades for an assignment or for an entire course, at the discretion of the instructor. In addition to any academic action taken by an instructor, these violations are also subject to action under the University of Maine Student Conduct Code. The maximum possible sanction under the student conduct code is dismissal from the University.

**Students with disabilities statement**

If you have a disability for which you may be requesting an accommodation, please contact Ann Smith, Director of Disabilities Services, 121 East Annex, 581-2319, as early as possible in the term.

**Course Schedule Disclaimer (Disruption Clause)**

In the event of an extended disruption of normal classroom activities, the format for this course may be modified to enable its completion within its programmed time frame. In that event, you will be provided an addendum to the syllabus that will supersede this version.