

# **ECE571: Advanced Microprocessor-Based Design**

**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/ece571\\_2014f/](http://www.eece.maine.edu/~vweaver/classes/ece571_2014f/)

**Course Schedule:**

Lectures: Tuesday/Thursday 3:30pm-4:45pm, Barrows 133

**Course Listing:**

Includes techniques for developing software and hardware for microprocessor-based systems, computer aided design using a multistation logic development system, use of components commonly found in microprocessor-based systems. Lec 2, Lab 3. (Spring.)

**Content this Semester**

We will investigate modern systems, with a focus on ARM and x86 processors. We will investigate various metrics for evaluating such systems, including performance, power, energy, and code density.

**Pre-requisites:**

ECE471 or permission

**Preliminary Schedule:**

- Hardware Performance Counters
- Operating System / Linux Review
- Computer Architecture Review
- x86 and ARM Architectures
- Floating Point / SIMD / GPU
- Code Density
- Power / Energy Concerns
- Architectural Simulators

**Grading:**

Class Participation (5%)

10 homework assignments (5% each)

1 midterm, week of 21 October (20%)

1 final project (25%)

**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.