ECE 4680/6680 Embedded Computing
Spring 2019

Objective

This course teaches the principles of using computing in the larger context of a system. The student is expected to enter this class with an understanding of computer architecture, assembler, and proficiency programming in the C (or related) language. Emphasis is given to multimedia data (image, sound) as examples of processing found in an embedded system. In concurrent lab work, each student will design and implement many of the ideas that are found in higher end embedded systems.

Upon successful completion of the course, students will be able to apply engineering principles (design, implementation, testing and debugging) to modern embedded computing systems.

Text

No text is required. The majority of course material will be provided during lectures.

Suggested extra reading: Computers as Components: Principles of Embedded Computing System Design, 2nd edition, by Wayne Wolf, Morgan Kaufmann Publishers, 2008.
The course web site is http://www.cecas.clemson.edu/~ahoover/ece468/.

Professor

Dr. Adam Hoover
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656-3377
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office hours walk-in anytime, or by appointment

Topics

Data in embedded systems (1 week)
Displays (1.5 week)
Codecs (2.5 weeks)
Processor, bus, and platform "flavors" (2 weeks)
GPU triangle rendering (1 week)
The boot process (1 week)
Real-time operating system (1 weeks)
Proving schedulability (2 weeks)
Device driver fundamentals (1 week)
Emerging embedded technologies, chips, and ideas (2 weeks)

Grading

60% labs, 20% midterm, 20% final
Midterm and final are presentations/reports

Attendance, Academic Integrity, Access Accommodations

This course follows all the procedures outlined in the ECE Common Course Syllabus.