

# ECE 373 Description

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## Overview

Primary goals:

1. do basic embedded systems analysis and design, including hardware/software interfacing,
2. understand uncore computer architecture, and
3. experience designing and implementing a substantial embedded system on a team.

Lectures will focus on broadly applicable principles. The lab projects will illustrate these principles using a ARM Cortex M3 based prototyping board. You need to spend a lot of time in the lab in order to complete your projects — this is a lab intensive class.

## Prerequisites

Courses:

1. EECS 270 and
2. EECS 370.

Topics:

1. boolean algebra;
2. combinational logic including multiplexers;
3. sequential logic including latches, flip-flops, and finite state machines;
4. assembly language programming;
5. pipelining,
6. memory and caching,
7. conditional and looping program control structures,
8. functions and procedures including parameter passing,
9. pointer-based data structures, and
10. structured programming.

## General Policies

**The honor code is in force on all assignments and exams. See the Engineering Honor Council web page for more details.**

1. All individual assignments (including but not limited to exams, pre-labs, homework assignments and exams) are to be performed independently.
2. All team assignments (including in-lab work, post-labs, and group presentations) are to be performed only by members of the team. Collaboration among members of different teams is permitted for the purpose of helping classmates to understand concepts and providing insights into the best way to approach the in-lab assignments. However, non-verbal collaboration such as sharing schematics or code is forbidden. You may not help debug another group's hardware or software without consent from the lab or course instructor. You are also not allowed to possess, look at, use, or in any way derive advantage from the existence of code, lab reports, or other material prepared in prior years.

3. Homework solutions will be posted soon after the deadline. Late homework assignments will not receive any credit. To reduce the angst this policy may cause, your lowest homework score for the semester will be dropped.

## Lab Policies

1. Pre-labs are to be done independently. They are due at the start of the lab session. Pre-labs not turned in within the first 10 minutes of lab will be considered to be a day late. Late pre-labs lose 10% credit per school day.
2. In-lab and post-lab assignments are due in lab the week after the lab is assigned unless otherwise noted. Though your in-lab work must be done before the start of lab, in-lab sign-off sheets are due within an hour of the start of lab so you have a chance to have your lab instructor sign off on your in-lab assignment) In-lab and post-lab assignments lose 5% credit for each day that they are late.
3. Most of the variation in lab grades between different students will be due to late penalties and pre-lab questions because the in-lab is graded almost entirely on a done/not done basis.
4. You are expected to attend the lab section for which you are registered. If you would like to switch lab sections, but the section you want is full, you must find someone in that lab section to switch with. Once you have agreed on a switch, send email to [Matt Smith](#). All section switches must be completed before the second week of lab.
5. If there are computers available, you may work in lab during other lab sections. However the lab staff's first priority will be the students who are actually enrolled in that lab section. The one exception is that inlab sign-offs will be given reasonable priority.

## Presentations

Teams will give a 12 minute technical talks in class. Each team will have two graded practice sessions. These presentations have the following goals.

1. Educate students about a wide variety of embedded systems topics,
2. Provide students with the opportunity practice preparing and giving technical talks,

## Grading

Item	Weight
Labs	25%
Project	25%
Midterm	15%
Final	20%
Homework	5%
Presentation	5%

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