ECE498/598: Linux Assembly Language Programming

Credits: 1
Instructor:
Vincent Weaver
Barrows 203
Office Hours: Drop-in or e-mail for appointment

Course Schedule:
Lectures: Tuesday/Thursday 8am-9:15am, Barrows 133

Course Summary:
In this class we will learn how to program modern assembly languages and interact with the Linux kernel via low-level system calls. We will investigate the x86 and ARM architectures and write simple low-level programs. We will look at writing code for smaller 8 and 16-bit systems. Finally we will use our knowledge of 65c816 assembly to program a Super Nintendo system.

Pre-requisites:
ECE271 or permission

Preliminary Schedule:

Week 1	13 November	15 November
	Linux Assembly Intro	**x86 Assembly**
	Low-level Linux Interface	Intro to x86 Assembly
	Generating assembly with gcc	Writing small programs
	Writing Hello World	
Week 2	20 November	22 November
	x86 assembly Continued	**No Class – Thanksgiving**
Week 3	27 November	29 November
	Linux Assembly on ARM	
	Using Qemu to emulate other architectures	
	Brief intro to ARM Assembly	
	Writing Hello World on ARM	
Week 4	4 December	6 December
	8/16 bit Assembly	
	8-bit 6502 Assembly Language	
	16-bit 65c816 Assembly Language	
Week 5	11 December	13 December
	Programming Embedded Systems in Assembly	
	Writing Super Nintendo games/demos in assembly	

Grading:

3 homework assignments (10% each)
1 minor project (70%)

Academic Dishonesty

Academic dishonesty includes cheating, plagiarism and all forms of misrepresentation in academic work, and is unacceptable at The University of Maine. As stated in the University of Maine's online undergraduate "Student Handbook," plagiarism (the submission of another's work without appropriate attribution) and cheating are violations of The University of Maine Student Conduct Code. An instructor who has probable cause or reason to believe a student has cheated may act upon such evidence, and should report the case to the supervising faculty member or the Department Chair for appropriate action.

Accommodation

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.

Special Event

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.