Pages

ECE 5720 Computer Systems Programming and Architecture

Created by Allen Hill, last modified by Nathanael Weidler on Sep 26, 2016

Announcements

9/22: Take Home Quiz 1

Course Description

This course provides a broad view of computer systems from a programmer's perspective. We will cover various aspects of computer operations including how it executes programs, stores information, and communicates. A key objective is to allow the students become more effective programmers, with a broad exposure in implementation issues such as performance, portability, and robustness. The course also serves as the foundation for the higher level computer engineering courses such Computer Architecture (ECE 5750), and Parallel Computer Architecture (ECE 7720). This page will serve as the syllabus for the course.

We will closely follow the Tentative Schedule, but expect regular updates based on our progress.

Lectures

Tuesdays and Thursdays 3:00-4:15, **ENGR 108**

Tutorial/ Help Session

We will have occasional tutorials. Please see the details below.

Date & Time	Location	Description	Slides/Notes
9/13, in class	ENGR 108	Bomb Lab	pdf / help session slides
10/9		Arch Lab (in class)	pptx

Instructor

Dr. Koushik Chakraborty
Office Hours: TR 10:30-11:30, EL 255B, *or email for appointment*.
Email: *koushik.chakraborty@usu.edu*

TA

Nathanael Weidler (*nweidler@gmail.com)*

Office Hour: Email for Appointment

Textbook

Description	Grade	Weight	Date

Computer Systems: A Programmer's Perspective
Third Edition
Randal E. Bryant and David R. O'Hallaron
ISBN-13: 978-0134092669
ISBN-10: 013409266X

Prentice Hall

Strongly Recommended Text: The C Programming Language, 2nd Edition. Kernighan and Ritchie. 1988.

Course Grading Weights

Description	Weight	Date
Homeworks	50%	Tentative Schedule
Mid-term-I	15%	10/14/2014
Take Home Quiz (2)	15%	9/18/2014 and 11/6/14
Mid-Term-II	15%	**12/3/2015**
Class Participation	5%	-

In this class, asking questions during the lectures is an essential component, and your Class Participation score will be derived from your active presence in the class.

Grading Scale

The grading policy in the class will follow a "Modified Contract," where students scoring in the ranges below are guaranteed the associated grade. The instructor reserves the right to curve the grades up at the end of the semester.

Score	Grade	Score	Grade
93%-100%	A	90%-92%	A-
86%-89%	B+	83%-85%	B
80%-82%	B-	76%-79%	C+
73%-75%	C	70%-72%	C-
66%-69%	D+	63%-65%	D
60%-62%	D-	<59%	F

Exams

There will be two mid-term examinations, and two take home quiz. The mid-term examinations will be held during regular class time. All exams are mandatory, and only official medical excuses will be accepted for missing these exams. In-class examinations (mid-terms) will cover all topics covered till the day of the exam. Take home quiz will cover topics covered between the last examination and the previous day of class.

Take Home Quiz #1

Mid-terms will be open book , open notes: but no electronic devices (laptop, PDA, smartphone) will be allowed.

Homework/Lab Assignments

Date Assigned	Lab	Description	Due Date	Handout	Instructions

The study of computer systems is by nature hands-on: practical applications of the theory learned is critical. The course will require a set of programming-intensive labs, where students will "get their hands dirty" working with the concepts presented in the class. These lab assignments have been given at other universities in similar courses, and students have given very positive reviews about how much they learn with the labs.

- **Homeworks 1-5 are each 10% of your Final Grade**
- **Homework 6 is extra credit, worth 5% of your grade**

Do expect to spend a substantial amount of time on them.

Late Work

Homeworks/Lab assignments are due before the class time on the due date. Completing your assignments in time is critical for your overall grade in the course. However, I will accept late submissions upto **72** hours after the due date. After the due date, you will lose **25%** of your score for every 24 hour period.

Homework Schedule

Date Assigned	Lab	Description	Due Date	Handout	Instructions
9/6/16	Datalab	Bit Manipulation	9/13/16	datalab-handout.tar	datalab.pdf
9/13/16	Bomblab	Diffusing binary bomb	9/27/16	-	bomblab.pdf
9/27/16	Buflab	Stack overflow attacks	10/11/16	-	attacklab.pdf
10/18/16	Archlab	Optimizing processor arch	11/3/16		
11/3/16	Cachelab	Cache Simulator & code optimization	11/17/16		
11/24/16	Malloclab	Dynamic storage allocator	12/8/16		

Academic Honesty

Students in the class must strictly adhere to the University policies on academic honesty. All work in this class must be your own, unless when explicitly allowed by the instructor. Homework solutions must be done all on your own. General discussion on problem solving is encouraged, but do not discuss specific solutions pertaining to your homework assignments. You are expected to reproduce your solution in class. Do not copy other's work in homework or during exams. Students violating these principles (copying, allowing someone to copy, reproducing answers/solutions from the internet) will receive a zero on assignment or exam, and will be docked a full letter grade for the course. Drastic or repeat offences will result in failure of the course.

Disability

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Every effort will be made to accommodate with student's disability. Please contact your instructor if you need special assistance.