

# CS 2810: Computer Organization and Architecture

Fall 2017	Topics	Assignments
Aug 21-25	binary numbers, UNIX, vim	Command-line tutorial
Aug 28-Sep 1	2s comp, octal, hex, floats	Binary quiz
Sep 5-8 ( <i>Labor Day</i> )	binary math, ssh, git	Floats quiz
Sep 11-15		
Sep 18-22	processes, system calls	
Sep 24-29	job control	Shell part 1
Oct 2-6		Shell part 2
Oct 9-11 ( <i>Fall Break</i> )		Midterm exam
Oct 16-20	assembly language (6502)	
Oct 23-27	assembly language (ARM)	Mandelbrot 1, 2
Oct 30-Nov 3		steps 3, 4, 5
Nov 6-10		steps 6, 7
Nov 13-17	caching	step 8
Nov 20-21 ( <i>Thanksgiving</i> )	virtual memory	steps 9, 10
Nov 27-Dec 1	malloc, free, gc	step 11, 12
Dec 4-7	Atari 2600	step 13

Changes to the schedule will be announced in class.

## Resources

- [Syllabus](#)
- [Examples from class](#)
- [Deep Mandelbrot zoom video](#)

## git and ssh

- [How to set up ssh \(public key, firewall\)](#)
- [How to set up ssh forwarding using PuTTY \(for Windows\)](#)
- [git book](#)
- [git cheat sheet](#)
- [git for computer scientists](#)
- [longer cheat sheet](#)
- [How to set up git for a centralized repository](#)
- [25 tips for intermediate git users](#)

## Screencasts

These screencasts are to help you get started with CodeGrinder and with writing ARM assembly language.

- [Installing the grind command and logging in](#)
- [Getting started with grind and git](#)
- [Complete code for reverse itoa function \(step 1\)](#)
- [Getting started with itoa \(step 2, reversing the string\)](#)
- [Getting started with writeHeader \(step 3\)](#)

These screencasts are to help you review floats and 2's complement:

- [Two's complement review \(11:44\)](#)
- [Float review \(13:47\)](#)
- [Converting numbers to floats \(10:23\)](#)
- [Python script to convert 9-bit floats into decimal fractions](#)

## Raspberry Pi

- [Recommended Raspberry Pi 3 kit \(red/white case\)](#)
- [Recommended Raspberry Pi 3 kit \(black case\)](#)
- [Recommended 32GB micro SD card](#)
- [MicroSD card benchmarks](#) (use this to help pick a fast 32GB card)

## Assembly language resources

- [ARM assembly notes](#) [[html](#)] [[pdf](#)]
- [Makefile](#)
- [Assembler directives cheat sheet](#)
- [ARM quick reference](#)
- [Official instruction set quick reference](#)
- [ARM instruction set slides](#)

## Assignments

Most of the projects for this class are managed through Canvas and CodeGrinder. The shell assignment is not:

- [Shell](#) [[html](#)] [[pdf](#)]