

CS 2810: Computer Organization and Architecture

Spring 2024	Topics
Jan 8-12	binary, 2s complement, binary logic (ch1), linux, cli, ssh
Jan 15-19 (<i>MLK Day</i>)	ch6: instructions, operands, memory, constants, logical/shift, mul/div, branch & jumps, conditionals & loops
Jan 22-26	gdb basics, floats intro, ch6: arrays, function calls, stack
Jan 29-Feb 2	gdb memory, endianness, float conversions both ways
Feb 5-9	functions, stack frames, memory map
Feb 12-16	more debugger: ch7: microarchitecture, single-cycle processor
Feb 19-23 (<i>President's Day</i>)	ch7: multi-cycle processor, pipelining
Feb 26-Mar 1	ch7: advanced microarchitecture
Mar 4-8	
Mar 11-15 (<i>Spring Break</i>)	-
Mar 18-22	appx C: C overview, compilation
Mar 25-29	appx C: variables, operators
Apr 1-5	appx C: function calls, control flow
Apr 8-12	appx C: pointers, arrays, characters, strings, structs, typedef
Apr 15-19	appx C: dynamic memory allocation, linked lists, standard library
Apr 22-26 (<i>Thursday last day</i>)	8-bit computers

Changes to the schedule will be announced in class.

Resources

- [Syllabus](#)
- [Examples from class](#)
- [Adventure](#) by Warren Robinett

Getting started with Linux, CodeGrinder, GDB

- [Installing Linux on Windows](#)
- [Installing Linux on Mac OS](#)
- [Setting up Linux for CodeGrinder assignments](#)
- [Intro to gdb for assembly language](#)
- [Command-line tutorial](#)
- [The missing semester of your CS education](#)

Assembly, C, and architecture resources

- [RISC-V cheat sheet](#)
- [Modern Microprocessors: A 90-minute Guide](#)
- [Beej's Guide to C Programming](#)

Number conversions

- [Binary and hexadecimal number systems \(Khan Academy\)](#)
- [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](#)

Midterm exam practice

- [Binary/decimal/hex practice problems](#)
- [Two's complement practice problems](#)

- [Float practice problems](#)