

ECE 190 Course Syllabus Fall 2009

Lecture	Date	Topics	Book Sections
1	Aug 25	Computer systems organized as a systematic set of transformations; representation using bits	Ch 1, § 2.1, 2.2
2	Aug 27	Bits and Operations on Bits: unsigned and signed integers; arithmetic and logical operations; ASCII; floating point; hexadecimal notation	§ 2.3, 2.4, 2.5, 2.6, 2.7
3	Sep 1	Digital Logic Structures: gates; combinational logic; storage elements	§ 3.2, 3.3, 3.4
4	Sep 3	Digital Logic Structures: memory; sequential logic; clock	§ 3.5, 3.6, 3.7
5	Sep 8	The von Neumann Model: basic concepts; instruction processing; sequencing	Ch 4
6	Sep 10	The LC-3: Instruction Set Architecture	§ 5.1, 5.2, 5.3, 5.4
7	Sep 15	The LC-3: Example program in LC-3 machine language; LC-3 datapath	§ 5.5, 5.6
8	Sep 17	Programming: problem solving using systematic decomposition, more examples, debugging	Ch 6
9	Sep 22	LC-3 Assembly Language; examples; assembly process	Ch 7
10	Sep 24	I/O abstractions: input from the keyboard, output to the monitor	§ 8.1, 8.2, 8.3, 8.4
11	Sep 29	Repeated Code: TRAPs and subroutines; Examples	Ch 9
12	Oct 1	Stacks; Executing subroutines with stacks	§ 10.1, notes
13	Oct 6	Introduction to C; Variables and Operators: basic data types, simple operators, examples	§ ch 11, 12.1, 12.2, 12.3
14	Oct 8	Operators: simple operators, memory allocation of variables, examples Control Structures: conditional constructs	§ 12.4, 12.5, 13.1, 13.2
15	Oct 13	Control Structures: iterative constructs, comprehensive examples, problem solving	§ 13.3, 13.4
16	Oct 15	Functions: introduction, syntax, run-time stack	§ 14.1, 14.2, 14.3
17	Oct 20	Functions: activation records, examples	§ 14.3, 14.4
18	Oct 22	Pointers and Arrays: introduction, problem solving, examples	Ch 16
19	Oct 27	Arrays: 2D arrays, examples	Ch 16
20	Oct 29	Testing and Debugging: introduction, error taxonomy, using a debugger	Ch 15
21	Nov 3	Recursion: introduction, basic example, example showing run-time stack	Ch 17
22	Nov 5	Input and Output in C: standard library, basic I/O calls, file I/O, example	Ch 18, notes
23	Nov 10	Basic Data Structures: introduction	§ 19.1, 19.2
24	Nov 12	Basic Data Structures: structures, defining new types, enumerations, dynamic memory allocation	§ 19.3, 19.4
25	Nov 17	Basic Data Structures: linked lists	§ 19.5
26	Nov 19	Basic Data Structures: linked lists, linked structure traversal	§ 19.5
27	Dec 1	Comprehensive Case Study: sorting	notes
28	Dec 3	Simple Guide to C++: Design, abstractions, and implementation	notes
29	Dec 8	Course Wrap-up and Advice for Sophomore System Builders	notes