CSCI 150 OUTLINE
ASSEMBLY LANGUAGE/MACHINE ARCHITECTURE
TEXT: Assembly Language for X86 Processors
BY: K. Irinve, 6th Ed. Prentice Hall

Approved: OCTOBER 2011   **Effective: WINTER 2012**

MATERIAL TO BE COVERED	SECTIONS FROM TEXT	TIME LINE
Basic Concepts: Assembly language, applications, virtual machine concept, data representation, binary, hexadecimal, two's complement, Boolean operations.	1.1 - 1.4	2.5 Hours
Processor Architecture: basic design, instruction execution cycle, floating-point unit, memory management (real-address mode and protected mode), major components, input/output system.	2.1 - 2.5	2.5 Hours
Assembly Language Fundamentals: basic elements of Assembly language, assembler (assembling and linking programs), defining data, symbolic constants.	3.1 - 3.5	5 Hours
Data Transfers, Addressing and Arithmetic: data transfer instructions, addition and subtraction, data-related operators and directives, indirect addressing, flags, jump and loop instructions.	4.1 - 4.5	3.75 Hours
Procedures: linking to an external library, stack operations, defiing and using procedures, saving and restoring registers, program design using procedures.	5.1 - 5.6	2.5 Hours
Conditional Processing: Boolean and comparision operators, conditional jumps, conditional loops, conditional structures.	6.1 - 6.5	2.5 Hours
Integer Arithmetic: shift and rotate instructions, multiplication and division, extended addition and subtraction, ASCII and packed decimal arithmetic (optional).	7.1 - 7.7	3.75 Hours
Advanced Procedures: local variables, parameters, pass by value and pass by reference, stack frames, memory models, recursion, creating multi-module programs, Java byte codes (optional).	8.1 - 8.6	3.75 Hours
Strings and Arrays: string primitive instructions, string routines, two-dimensional arrays, searching and sorting (optional).	9.1 - 9.5	2.5 Hours
Structures and Macros: structures and unions, marcos (defining, invoking and examples), macro functions, conditional-assembly directives, defining repeat blocks.	10.1 - 10.4	2.5 Hours
Memory Management, 32-Bit Windows Programming (optional), floating-point arithmetic (optional).	11.1 - 11.4 12.1 - 12.3	2.5 Hours
High-Level Language Interface: general conventions, inline assembly code, linking to C++ programs.	13.1 - 13.4	1.25 Hours
Disk Fundamentals: tracks, cylinders, sectors, partitions, file systems (FAT and NTFS), disk directory, reading and writing disk sectors, system-level file functions, decoding a FAT table (optional).	15.1 - 15.5	2.5 Hours
BIOS-Level Programming and DOS Programming: BIOS-level keyboard input and VIDEO programming (optional), DOS function calls, DOS file I/O services, run-time program structure, interrupt handling, memory organization (cache and virtual memory).	14.1 - 14.3 16.1 - 16.3 17.1 - 17.5	5 Hours

*** 1 Hours = 1 hour of face time.   ****This outline allows for 3 hours review and exams.

16 Week Term: 1 week = 2.8333 hours (face time)   6 Week Term: 1 week = 7.5 hours (face time)

CSCI 150 OUTLINE
ASSEMBLY LANGUAGE/MACHINE ARCHITECTURE
TEXT: Assembly Language for X86 Processors
BY: K. Irinve, 6th Ed. Prentice Hall

Approved: OCTOBER 2011   **Effective: WINTER 2012**

MATERIAL TO BE COVERED	SECTIONS FROM TEXT	TIME LINE

Keep in mind that most holidays affect M/W or MWF classes, so this timeline, NOT the topical outline many need adjustment.

Submitted by: Vo