SU DEPARTMENT OF COMPUTER SCIENCE
SYLLABUS
COSC 250 Microcomputer Organization

Description: Organization and internal behavior of microcomputer hardware: digital logic, Boolean algebra, switching networks, design of memories and ALUs, controllers, microprocessor architecture, introduction to machine code and assembly language.

Objectives: To study the inner workings of a digital computer system. To study the architecture of various microprocessors.

Prerequisite: COSC 116, COSC 117 or COSC 120.

Texts: Optional: Fundamentals of Logic Design, any edition, by Charles H. Roth, Cengage Learning Press, ISBN: 1133628478.

	Weeks
Unit 1 Combination Logic	6.0

Introduction to computer system. Number systems (Binary, octal and hexadecimal), conversion and arithmetic. Negative number representation. Logic gates (minterm and maxterm combinations). NAND and NOR logic. Boolean operations, function and algebra; K-map simplification. Adders, subtractors, decoders and multiplexers.

Unit 2 Sequential Logic and CPU Organization	4.0

Sequential circuits (flip flops); sequential circuit analysis and design procedure; Resistors and counters. Memory organization and types of memory components. Organization of various microprocessors.

Unit 3 CPU Design, Machine-level Instructions and Assembly Language	3.0

CPU architecture, Machine instructions. Wait states and machine cycles.

Tests	<u>1.0</u>
	14.0

EVALUATION
Homework 20%
Tests 60%
Lab 20%

NOTE: ONCE A STUDENT HAS RECEIVED CREDIT, INCLUDING TRANSFER CREDIT, FOR A COURSE, CREDIT MAY NOT BE RECEIVED FOR ANY COURSE WITH MATERIAL THAT IS EQUIVALENT TO IT OR IS A PREREQUISITE FOR IT.

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