

CCS2103 Introduction to Computer Architecture

COURSE INFORMATION

Prerequisites	Academic Year & Level		Teaching Methods			Credit Hrs.
	Year	Semester	Lecture	Tutorial	Laboratory	
CCS2102	2	3	2	2	0	3

COURSE AIM

- Present the various digital components used in the organization and design of digital computers.
- Explain the detailed steps that a designer must go through in order to design an elementary basic computer.
- Introduce the organization and architecture of the main units of a digital computer.
- Experiment with assembly language programming for a hypothetical machine.

COURSE WEEKLY CONTENTS

- 1 Introduction
- 2 CPU basics and Organization – ALU Design (adders and subtractors)
- 3 CPU basics and Organization – Registers Design
- 4 MARIE Architecture and Data Path
- 5 Instruction Processing
- 6 Extending Instruction Set
- 7 Machine Control
- 8 Instruction Formats
- 9 Instruction Types and Addressing
- 10 Instruction Pipelining
- 11 Types of Memory
- 12 Memory Hierarchy and Cache Memory
- 13 Input/Output Architectures
- 14 Performance Measurement and Analysis
- 15 Revision

STUDENT GRADING & ASSESSMENT

Weeks	Exams	Assign.	Quizzes	Reports	Present.	Lab.	Total
1 to 7	←		30	MARKS		→	30
8 to 12	←		20	MARKS		→	20
1 to 15	←		10	MARKS		→	10
16 or 17	40	Final					40

REFERENCES

- Textbook** Null Linda and Julia Lobur, The Essentials of Computer Organization and Architecture, Jones and Bartlett Publishers.