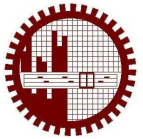


Description of Course CSE 210

PART A: General Information

1	**Course Title**	: COMPUTER ARCHITECTURE SESSIONAL
2	**Type of Course**	: SESSIONAL
3	**Offered to**	: DEPARTMENT OF CSE
4	**Pre-requisite Course(s)**	: NONE

PART B: Course Details

1. Course Content (As approved by the Academic Council)

Sessional based on CSE209; A short project work will be included such as the following: Booth Multiplier Design and Implementation, Small Microprocessor Design and Implementation, FPGA programming

2. Course Objectives

The students are expected to:

i. Investigate different aspects of MIPs and ARM instruction set
ii. Understand the details of the processor design.
iii. Study computer memory organizations in depth.
iv. Compare and analyze different types of multi processors and parallel processors.

3. Knowledge required

Technical

- System design and development
- Language Programming

Analytical

- None

4. Course Outcomes (COs)

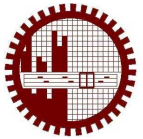
CO No.	CO Statement After undergoing this course, students should be able to:	Corresponding PO(s)*	Domains and Taxonomy level(s)**	Delivery Method(s) and Activity(-ies)	Assessment Tool(s)
CO1	**Understand** and **apply** MIPS programming.	PO1 and PO2	C3	Lecture, Demonstration, and hands-on	Quiz
CO2	**Implement** hardware systems applying the basics of logical design.	PO3 and PO4	C3, A5	Lecture, Demonstration, and hands-on	Assignments and Quiz
CO3	**Design** and **develop** different processing components.	PO6	C6, P7	Lecture, Demonstration, and hands-on	Project and Quiz

***Program Outcomes (POs)**

PO1: Engineering knowledge; PO2: Problem analysis; PO3: Design/development of solutions; PO4: Investigation; PO5: Modern tool usage; PO6: The engineer and society; PO7: Environment and sustainability; PO8: Ethics; PO9: Individual work and teamwork; PO10: Communication; PO11: Project management and finance; PO12: Life-long learning.

****Domains**

C-Cognitive: C1: Knowledge; C2: Comprehension; C3: Application; C4: Analysis; C5: Synthesis; C6: Evaluation
A-Affective: A1: Receiving; A2: Responding; A3: Valuing; A4: Organizing; A5: Characterizing
P-Psychomotor: P1: Perception; P2: Set; P3: Guided Response; P4: Mechanism; P5: Complex Overt Response; P6: Adaptation; P7: Organization



5. Mapping of Knowledge Profile, Complex Engineering Problem Solving and Complex Engineering Activities

COs	K1	K2	K3	K4	K5	K6	K7	K8	P1	P2	P3	P4	P5	P6	P7	A1	A2	A3	A4	A5
CO1	√	√	√	√					√	√	√					√				
CO2		√	√	√	√	√			√	√	√	√			√	√	√	√		√
CO3		√		√	√	√			√	√	√	√	√		√	√		√	√	√

K-Knowledge Profile:

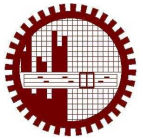
K1: A systematic, theory-based understanding of the natural sciences applicable to the discipline; **K2:** Conceptually based mathematics, numerical analysis, statistics and the formal aspects of computer and information science to support analysis and modeling applicable to the discipline; **K3:** A systematic, theory-based formulation of engineering fundamentals required in the engineering discipline; **K4:** Engineering specialist knowledge that provides theoretical frameworks and bodies of knowledge for the accepted practice areas in the engineering discipline; much is at the forefront of the discipline; **K5:** Knowledge that supports engineering design in a practice area; **K6:** Knowledge of engineering practice (technology) in the practice areas in the engineering discipline; **K7:**Comprehension of the role of engineering in society and identified issues in engineering practice in the discipline: ethics and the engineer's professional responsibility to public safety; the impacts of engineering activity; economic, social, cultural, environmental and sustainability; **K8:** Engagement with selected knowledge in the research literature of the discipline

P-Range of Complex Engineering Problem Solving:

P1: Cannot be resolved without in-depth engineering knowledge at the level of one or more of K3, K4, K5, K6, or K8, which allows a fundamentals-based, first principles analytical approach; **P2:** Involve wide-ranging or conflicting technical, engineering, and other issues; **P3:** Have no obvious solution and require abstract thinking, originality in analysis to formulate suitable models; **P4:** Involve infrequently encountered issues; **P5:** Are outside problems encompassed by standards and codes of practice for professional engineering; **P6:** Involve diverse groups of stakeholders with widely varying needs; **P7:** Are high-level problems including many component parts or sub-problems

A-Range of Complex Engineering Activities:

A1: Involve the use of diverse resources (and for this purpose, resources include people, money, equipment, materials, information and technologies); **A2:** Require resolution of significant problems arising from interactions between wide-ranging or conflicting technical, engineering or other issues; **A3:** Involve creative use of engineering principles and research-based knowledge in novel ways; **A4:** Have significant consequences in a range of contexts, characterized by difficulty of prediction and mitigation; **A5:** Can extend beyond previous experiences by applying principles-based approaches



6. Lecture/ Activity Plan (Tentative):

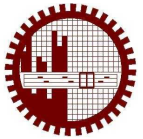
Week	Lecture Topics	Corresponding CO(s)
Week 1-2	Introductory lecture on course overview.	CO1
Week 3-4	Lecture on Assignment 1. Declaration of Assignment 1.	CO1 and CO2
Week 5-6	Evaluation of Assignment 1. Lecture on Assignment 2 & Demonstration class on MIPS programming.	CO1 and CO2
Week 7-8	Evaluation of Assignment 2.	CO2
Week 9-10	Lecture class on Project.	CO3
Week 11-12	Evaluation of the Project.	CO3
Week 13	Quiz	CO1, CO2, and CO3

7. Assessment Strategy

- Class Attendance: Class attendance will be recorded in every class.
- Assignments and Projects: There will be assignments and a project.
- Viva: There will be an individual viva during the evaluation of assignments and the project.
- Quiz Exam: A comprehensive Quiz exam will be held at the end of the semester.

8. Distribution of Marks (Tentative)

Assignment 1:	20%
Assignment 2:	30%
Project:	30%
Quiz Exam:	20%
Total:	100%



9. Textbook/ Reference

a. Computer Organization and Design by David A. Patterson and John L. Hennessy
b. Computer Organization and Design ARM Edition by David A. Patterson and John L. Hennessy