

INSTITUTE OF COMPUTER SCIENCE & TECHNOLOGY (CSE CBA/CS/BDA)

Course Execution Plan

Faculty Name	: Prof. Usman Sindhi / Prof. Aniket Patel
Subject	: Computer Organization (2CSE205)
Semester	: 2 nd Semester
Lectures	: 3 (3 Hour)/ week
Laboratory	: 1 (2 Hour)/ week
Credit	: 4

Course Overview :

This course provides detail of computer system's functional components, their characteristics, performance and interactions including system bus, different types of memory and input/output organization and CPU. This course also covers the architectural issues such as instruction set program and data types. It provides the detail of representation of data and instructions, how instructions are translated from human-understandable form into machine-understandable form, and how they are fetched, decoded, and executed. In addition, we will look at several alternative designs for CPUs, including CISC (Complex Instruction Set Computers) and RISC (Reduced Instruction Set Computers) architectures. On top that, the students are also introduced to the increasingly important area of parallel organization. This course also serves as a basic to develop hardware related projects. And hence it is an important course for all students of computer science and engineering branch.

Learning Outcome :

After successful completion of this course, students will be able to :

- Understand the organization of a Computer system
- Apply the knowledge of combinational and sequential logical circuits to design a computer architecture
- Understand instruction set architecture and data types
- Understand the input / output and Memory related concepts

Course Outline:

This course moves very quickly. To keep up, it is essential that you complete the assigned readings prior to class, and that you work through the end-of-chapter problems along the way. Solutions to internal exams and quizzes included in the course packet will be posted on the moodle.

Month	Week	Topics	Assign ment	MidSem	Practical	Seminar
March	1	Introduction to Computer Organization & Architecture			1	
	2	Basic computer Organization			1	
April	3	Basic computer Organization			2	
	4	Register Transfer			3	
	5	Microoperations and Microprogrammed Control			4	
	6	Microprogrammed Control	1		5	
	7	Central Processing Unit			6	1
1 st Internal Exam						
May	9	Central Processing Unit			Revision /Practical Test	
	10			1		
	11	Pipelining			7	
June	12	Pipelining/computer arithmetic			8	
	13	computer arithmetic			9	
	14	I/O Organization			9	
	15	I/O Organization / Memory Organization	2		10	
	15	Memory Organization			10	
July	17	2 nd Internal Exam		2		
	18	Practical Exam				

Grading Policy:

The course consists of the activities shown below, which are weighted as indicated to compute the final grade:

Theory Component	Weightage	Practical Component	Weightage
Mid Sem exams	20 %	Practicals	10 %
Assignments	10 %	Attendance	5 %
Attendance	10 %	Practical / Viva	20 %
University Exam	60%	Quiz	10%

		Seminar	5%
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Course grade will be graded out of 150. Theory marks out of 100 will be based on the relative performance in theory components. Practical marks out of 50 will be based on the relative performance in practical components. Specific components have various numbers as shown in course outline. For each component average is calculated and final grade is based on weighted average of respective component head. The grades will be in accordance with Ganpat university policy.

Text Books:

1. Computer System Architecture By M. Morris Mano, Pearson Publication
2. Computer Organization and Architecture By Stallings, Pearson Publication

Reference Books:

1. Computer Architecture and Organization By Hayes, Tata McGraw Hill
2. Structured Computer Organization: By Tanenbaum, PHI Publication
3. Computer Organization and Design by P. Pal Chaudhury, PHI Publication

Supplementary materials* :

In case, if text book sounds uncomfortable or due to lack of access of text book if any one fail to follow the text book then supplementary materials will be provided on moodle as and when the topic covered in class

“*” denotes optional readings.

Pre-requisites:

Students are requested to go through the content covered in digital electronics.

End Semester Exam:

Ganpat University will conduct end semester exam and cover the entire course.

Internal Exam:

The internal exam will be in class. Announcement of the date will be done in class and on the web page when the term starts. It is mandatory.

(Note: These exams may be offered as open book exam).

Academic Honesty

It is a shame that this must be stated at all, but there are always a few students who do not abide by the rules of proper academic conduct. For the record:

- Unless otherwise stated on the assignment handout, assignments are intended to be completed by you alone.
- You may obtain assistance from others on general concepts and procedural details (e.g., how to run the simulator, syntax of instructions, etc.). No assistance beyond this level is acceptable.
- The corollary is that you may not do someone else's work for them either. A willing supplier of the material is as guilty of academic dishonesty as the receiver. Related to this is the problem of *duplicate submission* (sometimes called *self-plagiarism*), which is submitting the same work for credit in two or more courses without prior approval of the instructors for those same courses.
- Any help you receive from someone **must be acknowledged** in the work submitted. Failure to acknowledge the source of a significant idea or approach is considered plagiarism and not allowed.

Cheating in any form will not be tolerated. Penalties can include: receiving a zero on the assignment (the minimum penalty), failing the course, having a note placed in your permanent academic record, suspension, and ultimately expulsion.