

CMPS-502 Computer Organization

Credit: 3 hours

CATALOG DESCRIPTION: Study of the organization of various modern digital computers including both hardware and software requirement; topics in Boolean algebra, switching circuit design and total system design will be included.

COURSE OBJECTIVES: The objective of this course is to provide an in-depth understanding about the structure and function of computer. The main purpose of this course is to present the nature and characteristics of modern computers, their microprocessors and parallel systems.

PREREQUISITE: Knowledge of Discrete Structures, Computer Organization/Architecture.

INSTRUCTOR: Dr.Krutthika Hirebasur Krishnappa, Assistant Professor, Computer Science Department, Henry Thurman Hall, Room N102,
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LECTURES

Day and Time: TR - 2:00PM -3:20PM
Class Location: 130, Henry Thurman Hall

OFFICE HOURS: MW: 10:30AM – 12:30PM 2:00PM – 3:00PM, TR: 10:00PM – 11:00PM

TEXTBOOK:

Computer Organization & Design - The Hardware/Software Interface (Revised Fourth Edition), by David A. Patterson and John L. Hennessey, Elsevier/Morgan Kaufman (2012), ISBN 978-0-12-374750-1.

REFERENCES:

1. Computer Organization & Architecture -Designing for performance, Ninth Edition, by William Stallings, Pearson Publication (2013), and ISBN: 978-0-13-293633-0.
2. Structured Computer Organization, 5/E, A Tanenbaum, Prentice Hall (2005), ISBN: 0-13-148521-0.

TOPICS: The topics that will be covered in this class include, but are not limited to, are: instruction sets, processor structure and function, pipelining techniques, RISC architectures, MIPS programming, control unit operation, and multiprocessors.

CLASS SCHEDULE: Microsoft Teams, date and time will be decided.

EVALUATION AND GRADING: Standard grading scale will be followed. Following is a tentative distribution of various components of the course:

Project	20%	<u>Grading Scale</u>
Midterm	20%	A: 90-100%
Quizzes	25%	B: 80-89%
Assignments	5%	C: 70-79%
Final	30%	D: 65-69%
Total	100%	F: Below 65%

PROJECT OR TERM PAPER:

Each student is required to study a particular topic in depth by surveying the literature, proposing his/her approaches to a problem on the topic, and evaluating the proposed solutions through simulations and/or analytical techniques. The project may be done individually or in a team of two students, provided that the tasks of each team member are clearly identified. All projects must be approved by the instructor. Each student or team must submit a brief project proposal

that outlines project objectives and work plan. Project proposals are due within the first three weeks of classes. You are encouraged to discuss project ideas with the instructor and to submit your proposal as early as possible.

MIDTERM AND FINAL EXAMS:

There will be one midterm and one final examination. **It is mandatory that you take the midterm and final. Make-up exam will be given in extenuating circumstances only.** All examinations missed due to illness or emergency require a **written, verified excuse** or a grade of zero will be assigned.

QUIZES:

Quizzes will be given online at the discretion of the instructor. **No make-up quizzes will be given. At any time without any advance notice, pop-up quiz should be expected.** So, be in time and try not to miss classes.

HOMEWORK:

Homework will be assigned and collected. **Late assignments will not be accepted.** Selected assignments will be graded. The intent of assigning and collecting homework is to evaluate the progress of the students in mastering the concepts presented.

ATTENDANCE:

Students are responsible for all information covered in class. Attendance is strongly recommended and 5% bonus will be assigned.

PLAGIARISM:

Plagiarism in any course work (home works, quizzes, projects, exam, etc.) will not be tolerated. It is a serious academic offense, and can result in a variety of actions, such as, F grade for that course. Identified cases of copying, cheating, or submitting work that is not your own will be acted as per university regulations.

CHANGES IN COURSE REQUIREMENTS:

Since all classes do not progress at the same rate, the instructor may wish to modify the above mentioned requirements or their timing as circumstances dictate. For example, the instructor may wish to change the number and frequency of examinations, or the number and sequence of assignments. If such modification is needed, the student will be given adequate notification. Moreover, there may be non-typical classes for which these requirements are not strictly applicable in each instance and may need modification. If such modification is needed, it will be in writing and conform to the spirit of this policy statement.

DISABILITY STATEMENTS:

Students with documented disabilities who believe that they may need accommodations in this class are encouraged to contact the Disability Services Coordinator in the Office of Disability Services, 246 A.C. Blanks Hall, 225-771-3546 (Voice), 225-771-3949 (Fax), as soon as possible to ensure that such accommodations are implemented in a timely fashion. Students who need accommodations must be registered with the Office of Disability Services. Students are responsible for informing the instructor of any instructional accommodations and/or special learning needs at the beginning of the semester. All discussions will remain confidential.