

Digital Electronics

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Welcome to the Digital Electronics course. Below you will find all the necessary information you need to succeed in this course.

Course Description

The Digital Electronics course introduces students to the fundamental concepts and principles of digital logic circuits and systems. Students will gain practical skills in designing, analyzing, and troubleshooting digital circuits. Through hands-on projects and activities, students will deepen their understanding of how digital electronics work and how they are applied in various fields.

Course Objectives

By the end of this course, students will be able to:

- Understand the basic principles of digital logic and Boolean algebra.
- Design and analyze combinational and sequential logic circuits.
- Implement and troubleshoot digital circuits using logic gates and flip-flops.
- Apply fundamental principles of digital electronics in real-world applications.
- Collaborate effectively in group projects related to digital electronics.

Required Materials

- Safety goggles and appropriate clothing for laboratory experiments including closed toed shoes.
- Calculator
- Notebooks and pencil for notes and tests
- 45\$ Shop Fee (Student will not enter lab of shop is not paid. If cannot be paid, please contact instructor)

Grading Policy

Daily participation grades will be the primary basis for evaluation in this course. Active engagement in class discussions, completion of assigned tasks, test grades, and adherence to safety guidelines will contribute to the overall grade. Make sure you actively engage in class discussions, ask questions, and complete all assigned tasks to receive full credit. Your enthusiasm and commitment will contribute to your overall success in this course. Attendance and punctuality will also be taken into consideration.

Course Policies and Expectations

Digital Electronics

To ensure a safe and productive learning environment, students are expected to:

- Follow all safety rules and guidelines in the lab.
- Wear appropriate clothing and protective gear during lab sessions.
- Respect the equipment and materials provided.
- Respect the instructor and fellow classmates
- Attend all classes regularly and be on time.
- Submit assignments on time and complete them to the best of your ability.
- Actively participate in class activities and discussions
- Maintain a clean and organized workspace
- Respect the opinions and ideas of classmates.
- Seek help or clarification from the instructor when needed.
- Come to class prepared with materials and completed assignments.

Course Coverage

Below is a general outline of the topics we will cover throughout the school year. Please note that this schedule is subject to change based on the pace of the class and other factors.

1. Introduction to digital electronics and binary number systems.
2. Boolean algebra and logic gates.
3. Combinational logic circuits.
4. Sequential logic circuits and flip-flops.
5. Counters, registers, and memory devices.
6. Introduction to microcontrollers and programmable logic devices.
7. Applications of digital electronics in various fields.

We look forward to an exciting and enriching learning journey with you! Good luck. If you have any questions or concerns regarding the course, please feel free to reach out to the instructor.