Course Code: CE216	Course Title: Digital Logic Design	Classification: R	Coordinator: Prof. Aliaa Youssif **Lecturer:** Prof. Aliaa Youssif Prof. Nashwa El-Bendery	Credit: 3
Pre-requisites: CS111	Co-requisites: None	Schedule: Lecture 2 hrs. Tutorial/Lab 2/2 hrs.		

Office Hours:

Course Description:
This course aims to develop computer science skills in the design and analysis of digital logic circuits with applications to digital computing. It presents: Numbering systems, binary arithmetic and codes, logic gates, Boolean algebra, and logic simplifications. It covers design and realization of combinational circuits.
It also covers functions of sequential logic circuits: Flip-Flops, analysis design, registers, and realization of counters.

Textbook:

Thomas L. Floyd, Digital Fundamentals, Prentice Hall.

References:
1. M. Mano, Digital Design, Prentice Hall.
2. J. F. Wakerly, Digital Design Principles, Prentice Hall.

Course Objective/Course Learning Outcome:	Contribution to Program Student Outcomes:
1. Know the basic differences between analog and digital systems. 2. Use binary numbers and codes. 3. Describe the operation of logic gates. 4. Apply Boolean algebra and K-map to simplify functions. 5. Design combinational and sequential logic circuits.	(SO-2) Design, implement, and evaluate a computing-based solution to meet a given set of computing requirements in the context of the program's discipline. (SO-3) Function effectively as a member or leader of a team engaged in activities appropriate to the program's discipline.
Course Outline: 1. Introduction to Digital Concepts. 2. Numbering systems, Operations and Codes. 3. Logic Gates. 4. Combination Logic Circuits. 5. Truth Tables and Standard Forms. 6. Boolean algebra and Logic simplification. 7. 7th Week Assessment.	8. Simplification using K-map. 9. Basic Adders and Comparators. 10. Decoders and Encoders. 11. MUX and DMUX. 12. 12th Week Assessment. 13. Flip-Flops. 14. Registers and Counters Operations. 15. Revision. 16. Final Examination.

Grade Distribution:

7th Week Assessment (30%):
Mid-Term Exam (20%) + Quizzes 10%

12th Week Assessment (20%):
Project (20%)

Year Work (10%):
Laboratory Assignments 5% + Quizzes 5%

Final Exam (40%)

Policies:

Attendance:
AASTMT Education and Study Regulations (available at aast.edu)

Academic Honesty:
AASTMT Education and Study Regulations (available at aast.edu)