

EE244

Course Objectives

Content	Objectives
Number systems	Students will be able to understand different number systems, and be able to their conversions.
Binary arithmetic	Students will be able to perform simple binary arithmetic.
Complement and signed number	Students will be able to understand the concepts of complements and representations of signed numbers, and be able to perform binary arithmetic using signed numbers.
Boolean algebra	Students will understand the definition and basic theorems of Boolean algebra, and be able to simplify Boolean functions using postulates and theorems.
Karnaugh map	Students will understand and apply Karnaugh maps to simplify Boolean functions.
Logic gates	Students will understand the basic logic operations and logic gates, and be able to implement Boolean functions using various logic gates.
Combinational circuit	Students will be able to analyze and design a combination circuit using basic gates, and be able to construct a simple combination circuit using adders, multipliers, encoders, decoders, or multiplexers.
Flip flop and sequential circuit	Students will understand the concepts and characteristics of flip flops, and be able to design a sequential circuit using basic flip flops.
State equation, state table, and state diagram	Students will understand and be able to derive the state equation, state table, and state diagram of a sequential circuit.
Register and counter	Students will understand functions of different registers and counters.
Memory elements	Students will understand the concepts of memory elements.
Programmable logic device	Students will be able to implement a Boolean function using programmable logic devices including PROM, PAL, and PLA.