EEE1024 – Course Outline (subject to change)

Module:1	**Fundamentals of DC circuits:**		
Basic circuit elements and sources, Ohms law, Kirchhoff's laws, series and parallel connection of circuit elements, Node voltage analysis, Mesh current analysis, Thevenin's and Maximum power transfer theorem.			
Module:2	**Fundamentals of AC Circuits:**		
Introduction to AC circuits and concept of phasors for constant frequency sinusoidal sources. Steady state AC analysis of a RL, RC, RLC Series circuits, AC power calculations, Introduction to Three pahse system			
Module:3	**Digital Systems:**		
Number system, Boolean algebra, Logic circuit concepts, Combinational circuit decoder, Encoder, Multiplexer, Demultiplexer, Half adder, Full adder Computer organization, Memory types, Flip Flops, Counters, Shift registers			
Module:4	**Semiconductor devices:**		
Conduction in semiconductor materials, principle of operation, V-I characteristics of PN junction diode, Zener diode, BJT, half wave rectifier, full wave rectifier			
Module:5	**Microprocessor & microcontroller:**		
Overview of ARM architecture, Different modes of ARM processor, various instructions, 8051 Microcontroller architecture, Applications			
Module:6	**Measuring Instruments and Sensors:**		
Measuring Instruments: Functional elements of an instrument, Classification of instruments and working principle, PMMC & MI, Bridges, Digital & Smart Meters **Sensors:** Transducers classification& selections, Resistive, Inductive and capacitive sensors, Optical and Digital sensors			
Module:7	**Communication systems**		
Modulation and Demodulation – Amplitude, frequency, digital modulation, wired and wireless communication – concept and types			