1.	Title of the course	Analog Circuits
2.	Course number	EE301L
3.	Structure of credits	3-1-0-4
4.	Offered to	UG
5.	New course/modification to	Modification To EE3101/8
6.	To be offered by	Department of Electrical Engineering
7.	To take effect from	July 2022
8.	Prerequisite	Nil
9.	**Course Objective(s):** The objective of this course is to introduce the fundamental concepts of analog systems and apply the same in real world applications.	
10.	**Course Content:** Diodes: review; Operational amplifier (op-amp): op-amp based building blocks, linear and non-linear system, feedback theory, negative/positive feedback, stability criterion, ideal op-amp, inverting amplifier, adder, integrator, differentiator, non-inverting amplifier, applications, active-RC analog filters; Bipolar Junction Transistor (BJT): review of BJT operation and dc biasing, small signal model, BJT biasing for discrete circuit design, single stage amplifier analysis, static characteristics, internal capacitances and second order effects; Metal Oxide Semiconductor Field-Effect Transistor (MOSFET): Depletion and Enhancement MOSFET operation, characteristic and DC biasing, MOSFET as amplifier, biasing of MOS amplifier circuits, single stage integrated circuit (IC)-MOS amplifiers, Complimentary MOS (CMOS) logic inverter, MOSFET as switch, Small signal model of MOSFET for high and low frequencies.; Spice model and analysis of FET circuits, frequency response analysis; Output stage and power amplifier: classification of output stages, Class A, Class B, Class AB amplifiers, power BJT, IC power transistors and MOS power transistors; Differential and multistage amplifiers;	
11.	**Textbook(s):** 1. Sedra A and Smith K, *Microelectronic circuits: theory and applications*, Oxford (2017).	
12.	**Reference(s):** 1. Boylestad R L and Nashelsky L, *Electronic devices and circuit theory*, Pearson (2009).	