KALINGA INSTITUTE OF INDUSTRIAL TECHNOLOGY (KIIT)
(Deemed To be University)
BHUBANESWAR

School of Electronics Engineering

AUTUMN/SPRING SEMESTER 2022-2023

Course Handout

Program: B. Tech

Subject Code: EC- 10001

Credit: 2

Subject Name: Basic Electronics

Semester: 1st /2nd (All branches)

Day	Topic
1.	Introduction to the subject and applications of the theories to be taught. Discussion about text book, reference book and course flow
2.	Introduction to Energy band concept of materials, difference between metal, insulator and semiconductor. Intrinsic and extrinsic semiconductors (n-type & p-type)
3.	Current conduction mechanism in Semiconductor. Summary of the chapter and tutorial
4.	Operation of p-n junction diode, diode characteristics
5.	Diode Equation, resistance and Equivalent model.
6.	Operation of Half-wave and full-wave rectifiers
7.	Performance measurement of Rectifiers.
8.	Rectifiers with C, LC filter and LC π filter. Breakdown mechanisms in diode.
9.	Zener diode and voltage regulator . **Assignment-1**
10.	BJT constructions and its operations.

11.	BJT configurations and α, β & γ relationship.
12.	CE, CB, CC configurations and characteristics
13.	Dc load line analysis and Q-point
14.	BJT Biasing and amplifiers.
15.	JFET concept
16.	MOSFET concept **Assignment-2**
17.	**Summary of the chapter and tutorial Quiz-1**
18.	Idea OPAMP, virtual ground, Concept of differential and common mode gain, CMRR
19.	Inverting, Non-inverting and Summing amplifiers
20.	Differential amplifier, Comparator. **Summary of the chapter and tutorial**
21.	Number systems, conversions and codes
22.	Logic gates & truth tables (OR, AND, NAND, EX-OR), Universal gates
23.	Qualitative description of adder, substractor,
24.	Multiplexer and de-Multiplexer, **Assignment-3**
25.	Introduction to Flip-flop, RS flip-flop, D flip-flop, JK flip-flop
26.	Shift register and Asynchronous (ripple) counter. **Summary of the chapter and tutorial**
27.	SCR, opto-electronic devices
28.	Fiber techniques, Introduction and describing sensor performance
29.	Fundamentals of AM. **Assignment-4**
30.	Fundamentals of FM. **Summary of the chapter and tutorial Quiz-2**