

Course Type	Course Code	Name of Course	L	T	P	Credit
DSC	NECC102	Introduction to Electronics Engineering Lab	0	0	2	1

Course Objective
<ul style="list-style-type: none"> The objective of the course is to familiarization with the electronic components and laboratory instruments. To design and analyze various electronics circuits, which will be further useful to build the understanding in the advanced practical knowledge of Electronics and communication engineering.
Learning Outcomes
<p>Upon successful completion of this course, students will:</p> <ul style="list-style-type: none"> Acquire a basic knowledge of the electronic components and laboratory instruments. Develop the understanding of the application of diodes, transistor and op-amp and their characteristics Have the knowledge of some electronic components useful for amplification and mathematical operation.

Unit No.	Name of experiments.	Practical Hours	Learning Outcome
1	Familiarization with the electronic components and laboratory instruments.	02	To be able to identify components along with their specifications and learn the usage of the instruments required for the experiments.
2	Study of V-I characteristics of diode (1N4007).	02	Develop an understanding of the diode characteristics.
3	Design the half wave rectifier & Full Wave rectifier circuit using diodes.	02	Develop an understanding of the diode application in rectification.
4	Realization of various clipper's circuit using diode	02	Develop the understanding of diode applications in wave shaping and ability to design simple diode based circuits.
5	Realization of various clamper's circuit using diode	02	Develop the understanding of diode applications in wave shaping and ability to design simple diode based circuits.
6	Study of output characteristics of BJT in common emitter configuration	02	Develop the understanding of the basics of BJT and its characteristics in common emitter configuration.
7	Design a common emitter amplifier and its application as a switch.	02	To be able to understand the basics application of BJT as an amplifier and switch.
8	Design a circuit to perform Inverting/Non-inverting action of operational amplifier using IC741.	02	Acquire an understanding of the main features of an operational amplifier and its important applications.
9	Design of op-amp based circuit for performing various mathematical operations (Differentiator & Integrator).	02	Acquire an understanding of the main features of an operational amplifier and its application in mathematical operations.
10	Realization of logic gates using universal gate (IC7400).	02	Develop a basic understanding of logic gates and to appreciate how various kinds of applications can be realized using the universal gates.

Reference material and books:

- [1] Electronics engineering laboratory manual.
- [2] Electronic Devices and Circuit Theory by Boyleston & Nashelsky, Pearson Education, 2013.
- [3] Integrated Electronics by J. Millman, C. Halkias and Parikh, Second Edition, Mc Graw Hill Publication, 2017.

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