

4	Oscillators 4.1 Types of feedback(Positive and Negative) 4.2 Principles of oscillation. 4.3 Oscillators: Hartley and Colpitts	08	15
5	Cables, Connectors and Measuring Instruments 5.1 Analog and Digital display. 5.2 Cables: coaxial cable, twisted pair cable and fiber optic cable 5.3 Connectors: coaxial cable connectors, RJ45, RS-232, HDMI connectors 5.4 Multimeters: Analog and digital multimeter 5.5 CRO: front panel controls and application	08	20

SUGGESTED LIST OF EXERCISES/PRACTICAL/EXPERIMENTS:

Sr. No.	Practical Exercise	Approx Hours Required
1	Perform Basic operations on MultiSIM/ Electronic Workbench	04
2	Measure voltage and current of a given circuit using analog and digital multimeters.	02
3	Test performance of P-N junction diode.	02
4	Operate all controls of CRO front panel.	02
5	Measure voltage and frequency of any given signal using oscilloscope.	02
6	Test performance of bridge rectifier.	02
7	Measure parameters of various signals	02
8	Test performance of transistor as a switch	02
9	Test the performance of the T-filter	02
10	Test the performance of the π -filter	02
11	Test various cables for different applications	04
12	Identify various connectors & Draw their diagram	02

Text Books / Reference Books:

Sr. No.	Title of Books	Author	Publication
1.	Principle of Electronics	V.K.Mehta	S.Chand & Co., latest edition
2.	Electronics Principles	Albert Paul Malvino	McGraw Hill, latest edition
3.	Electronics Devices and Circuit Theory	Robert L. Boylestad	Pearson, latest edition
4.	Electronic	H.S.Kalsi	McGraw Hill, latest edition
5.	Cables and Connectors	John Kadick	AVO International, latest edition

List of Open Source Software/learning website:

- <https://www.vlab.co.in>
- <https://www.electronics-tutorials.ws>
- <https://www.instructables.com/>

Course Learning Outcomes (CLO): On completion of this course, the students will be able to:

CLO	Description	Bloom's Taxonomy Level
CLO1	Distinguish between conductors, non conductors and semiconductors based on energy band theory and classify different types of semiconductors.	2 Understanding 4 Analyze
CLO2	Demonstrate the operating principle and output characteristics of pn junction diodes, Zener diode, Vector diode, BJT, rectifiers and different diode circuits.	2 Understanding
CLO3	Employ the concept of Energy Band Theory and Fermi Levels to explain the operating principle of semiconductors.	2 Understanding 3 Applying
CLO4	Design simple circuits and mini projects.	3 Applying 6 Creating
CLO5	Know the benefits of feedback in amplifier.	2 Understanding
CLO6	Compare and classify oscillators.	4 Analyze

Course Learning Outcomes	Program Outcomes(Pos)											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CLO1	M											
CLO2	M											
CLO3	H						M					
CLO4	M					M						
CLO5	M	M		L			H					
CLO6	H	M		M								M

H: High, M: Medium, L: Low