Course Code	Course Title	L	T	P	C
1151EC306	OPTICAL AND MICROWAVE ENGINEERING LAB	0	0	2	1

a) Course Category

Program core

b) Preamble

Optical and Microwave laboratory provides an opportunity to explore the concepts in optical devices and microwave systems in a laboratory setting with an emphasis on measurement techniques.

c) Prerequisite

Nil

d) Related Courses

Optical & Microwave Engineering.

e) Course Outcomes

Upon the successful completion of the course, students will be able to:

CO Nos.	Course Outcomes	Skill Level (Based on Dave's Taxonomy)
CO1	Perform the characteristics of optical sources and detectors	S2
CO2	Perform the mode characteristics of single mode and multimode Optical fiber	S2
CO3	Perform the characteristics of microwave sources.	S2
CO4	Build a microwave bench for measuring various parameters.	S2
CO5	Demonstrate an experiment using microwave bench to measure S parameters of passive components.	S2
CO6	Perform characteristics of active and passive components using MIC	S2

f) Correlation of Cos with POs

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	M	-	-	-	-	-	-	-	M	-	-	-	-	-
CO2	M	M	-	-	-	-	-	-	-	-	-	-	-	-
CO3	M	-	-	-	-	-	-	-	M	-	-	-	-	-
CO4	M	M	-	-	-	-	-	-	M	-	-	-	-	-
CO5	M	M	-	-	M	-	-	-	M	-	-	-	-	-

g) Course Content:

List of Experiments

S.No.	Cycle – 1	CO mapping of Experiments
1	Numerical Aperture determination for optical fiber	CO2
2	V-I and P-I Characteristics of Laser	CO1
3	Analog and Digital Signal Transmission using Laser Source	CO1
4	Mode Characteristics of Reflex Klystron	CO3
5	V-I Characteristics of GUNN Diode	CO3
6	Performance Characteristics of Directional Coupler	CO4
7	S- Parameter Estimation of Magic Tee	CO5 A
	Cycle – 2	
8	Study of Mode Characteristics of Fibers- SM and MM fiber	CO2
9	Measurement of Losses in optical fiber	CO1
10	DC Characteristics of LED and Photodiode	CO1
11	Determination of Frequency and Guide Wavelength	CO4
12	Measurement of VSWR and Impedance of Unknown Load	CO4
13	Measurement of Radiation Pattern and Gain of Microwave Antenna	CO4

14	Frequency Response of Microwave Integrated Circuits	CO5