

Course Plan (Sept 2022 – Feb 2023)

Name of Instructor: Mr. Harison Cota

Program: Bachelor of Engineering [Sem I]

Course Name: Physics Laboratory [FE150]

PHYSICS LABORATORY					
Course Code	FE 150/FE250		Credits	1	
Scheme of Instruction	L	T	P	TOTAL	
Hours/ Week	0	0	2	26 hrs/sem	
Scheme of Examination	IA	TW	TM	P	O
TOTAL = 25 marks	0	25	0	0	0

List of Experiments:

Expt No.	TITLE
1	NEWTON'S RINGS
2	THIN AIR WEDGE
3	ENERGY GAP OF A SEMICONDUCTOR
4	THERMISTOR CHARACTERISTICS
5	WAVELENGTH OF LASER USING DIFFRACTION GRATING
6	NUMERICAL APERTURE OF OPTICAL FIBRE
7	PLANCK'S CONSTANT BY PHOTOCELL
8	B-H CURVE
9	HELMHOLTZ RESONATOR
10	RLC SERIES & PARALLEL RESONANCE
11	HALL EFFECT (VIRTUAL LAB)
12	MAGNETIC FIELD ALONG AXIS OF CURRENT CARRYING COIL (VIRTUAL LAB)

Pre-Requisites: Knowledge of Thin Film Interference, Semiconductors, thermistor, photocell, photodiode, LASER's, optical fibres, magnetic materials, LCR circuits, dielectrics, waves & oscillations

Course Objectives:

1. To give the students a better understanding of theoretical concepts through hands-on practical experiments
2. To train the students to make precise observations, systematically note them and analyse them to draw meaningful inferences.

Course Outcomes:

After completion of the course students will be able to:

- FE150.1 :** Co-relate fundamental and modern physics experiments with the corresponding theoretical concepts.
- FE150.2 :** Perform fundamental and modern physics experiments by following procedures, making physical measurements, tabulating and analyzing them and drawing meaningful conclusions.
- FE150.3 :** Maintain a laboratory notebook and well written laboratory report journal for the fundamental and modern physics experiments performed.
- FE150.4 :** Work in a group to perform the given fundamental and modern physics experiments.

Recommended Reading:

Sr. No	Titles	Author/s	Edition	Unit/Module	Topic
1	A text book of Engineering Physics	M. N. Avadhanulu & P. G. Kshirsagar	9 th Revised Edition	--	All experiments
2	B.Sc. Practical Physics (For B.Sc. and B. Tech Students)	C. L. Arora	2010	--	All experiments
3	Problems in Physics	M.N. Avadhanulu, K.Ramesh Babu, M.P.Joshi	2012	--	All experiments

Assessment Tools:

Assessment Tools	CO	Units	Dissemination Week	Submission Week
Rubrics	FE150.1 to FE150.4	--	--	During / after each experiment

Rubrics for Assessing Course Outcomes for Practicals (25 marks)

Indicators	CO covered	Description and marks			Maximum marks
Viva (based on theory)	FE150.1	Could answer all questions correctly (5 marks)	Could answer 60% questions (3 marks)	Could answer less than 40% questions (2 marks)	05
Experimental work	FE150.2	Proper procedure followed, precise readings, neat tabulations and graphs, correct inferences (10 marks)	Average performance w.r.t. procedure, readings taken, tabulations & graphs & inferences (6 marks)	Very shabby & haphazard work with casual approach (4 marks)	10
Lab book / Journal	FE150.3	Neat lab book and journal, timely submission (5 marks)	Few cancellations in lab book / journal, timely submission (3 marks)	Shabby lab book / journal, late submission (2 marks)	05
Team work	FE150.4	Active participation, collaborates with others in the group to perform given tasks, collective work (5 marks)	Average participation, less collaboration with others in the group, less cooperation (3 marks)	Very little participation, no collaboration/cooperation with others in the group (2 marks)	05
Total marks					25

Instructor In-Charge

Head of Department