Birla Institute of Technology & Science, Pilani
Hyderabad Campus

FIRST SEMESTER 2022-2023

Course Handout Part II

Date: 29-08-2022

In addition to part-I (General Handout for all courses appended to the time table) this portion gives further specific details regarding the course.

Course No. : *PHY F214*
Course Title : *Electromagnetism and Optics Lab*
Instructor-in-Charge : *Meenakshi V*
Instructors : *Meenakshi V, Aravinda N. Raghavan, Aiswarya N. M., Hiwase Prajakta Mohanrao*

Scope and Objective of the Course:

The aim of the course is to perform experiments in electromagnetism and optics that provides further clarity to the theories on those topics learnt through core courses. In this process, students will learn to write hypothesis, design experiment, estimate errors and fit the data to ascertain the validity of the models.

Learning outcomes

A. Formulating hypothesis for each experiment and designing the experiment to test your hypothesis.
B. Performing each experiment, trouble-shooting and collecting precise data.
C. Analyzing data, interpreting results and estimating errors in measurements.
D. Documenting the results, and writing lab reports.

Lectures and Experimental Notes

Introductory Video lectures will be given for the experiments and notes (Instrument manual) on the experiments will be uploaded on *CANVAS/ EMO Lab website*. It is mandatory to watch the lectures and read the material related to your experiment before you come to the lab.

List of Experiments

S.No.	Experiment
1.	Error Analysis and Curve fitting
2.	Magnetic Force on Wires
3.	Magnetic Field of Coils
4.	Electromagnetic Induction
5.	Hysteresis Loop
6.	Single and Double Slit Diffraction

7.	Michelson Interferometer - He Ne laser
8.	Michelson Interferometer – Na lamp
9.	Malus Law, Quarter and Half wave plates
10.	Contest: Demonstration of Poisson spot

Evaluation Scheme:

Component	Duration	Weightage (%)	Date & Time	Nature of Component
Original lab report in the prescribed format, and attendance		40	Second session of every experiment within the announced deadline	Open Book
Presentation of hypothesis and design of experiment and attendance (submitted as PPT slides in the prescribed format)		40	First session of every experiment	Open Book
Quiz	variable	20	Will be announced	Closed book

Chamber Consultation Hour: To be announced in class.

Notices: All notices concerning this course will be displayed in CANVAS / Google Classroom

Make-up Policy: It is applicable to the following case and it is permissible on production of evidential documents.

Debilitating illness.

Academic honesty and integrity policy: Academic honesty and integrity are to be maintained by all the students throughout the semester and no type of academic dishonesty is acceptable.

INSTRUCTORS
PHY F214