Birla Institute of Technology & Science, Pilani
Hyderabad Campus

FIRST SEMESTER 2023-2024

Course Handout Part II

Date: 11-08-2023

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 : Aravinda Raghavan
Instructors : Meenakshi V, Greeshma Gopinath, Sreeshna S

I. Scope and Objective of the Course:

This is a skill-focused lab where you will learn to hypothesize, design experiment, estimate errors and fit the data to ascertain the validity of your hypothesis. The context is topics in electromagnetism and optics.

II. 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.

III. Resources

Learning resources including lecture slides, notes and videos pertaining to every experiment is available in the CANVAS website created for the EMO lab. You will have to login to access the resources. It is mandatory to watch the lectures and read the material related to your experiment before you come to the lab.

IV. List of Experiments

S.No.	Experiment
1.	Hypothesis, 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

V. Evaluation Scheme

Component	Duration	Weightage (%)	Date & Time	Nature of Component
Pre-lab Quiz	60 minutes	10	23rd August, 2023	Closed book
Presentation of hypothesis and design of experiment**		40	Submission at the end of the hypothesis Lab	Open Book
Lab report in the prescribed format**		40	Submission by the announced due date (No grace period)	Open Book
Post- Lab Quiz	60 minutes	10	Will be announced	Closed book

**Grading based on pre-announced rubrics.

VI. Chamber Consultation Hour: During the lab hours.

VII. Notices: All notices concerning this course will be displayed in CANVAS/ CMS

VIII. Make-up Policy: It is applicable to the following case and it is permissible on production of evidential Documents: 1. Debilitating illness, 2. Institute approved absence.

IX. 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