Birla Institute of Technology & Science, Pilani
Hyderabad Campus

SECOND SEMESTER 2022-2023

Course Handout Part II

Date: 16-01-2023

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 F244
Course Title : Modern Physics Lab
Instructor-in-Charge : Meenakshi V
Instructors : Meenakshi V, Aravinda N. Raghavan, Aiswarya N. M., Hiwase Prajakta Mohanrao

Scope and Objective of the Course:

Modern physics is defined as post-Newtonian physics, which unraveled towards the end of the 19th century. A series of experiments sparked and confirmed the quantum nature of light, and matter. In this lab, students will perform some of those experiments. The student will apply the experimental skills learnt in the previous labs which includes collecting reproducible data, estimating errors, to synthesize and analyze non-trivial data arising in these experiments.

Lectures and Experimental Notes

Introductory notes will be given for the experiments and Instrument manual for the experiments will be uploaded on *CANVAS*. It is mandatory to read the material related to your experiment before you come to the lab.

List of Experiments

S.No.	Experiment
1.	Photoelectric effect
2.	Frank Hertz experiment
3.	Millikan Oil drop experiment
4.	Zeeman effect
5.	e/m ratio
6.	Geiger-Muller Counter
7.	Quincke's tube
8.	Electron Spin Resonance and Nuclear Magnetic resonance
9.	Optional: Transverse Electromagnetic Modes in a Laser Cavity and Chaotic dynamics

Evaluation Scheme

Component	Duration	Weightage (%)	Date & Time	Nature of Component
Pre Lab Quiz (Understanding physical theories behind the experiments)	variable	15	Will be announced	Closed Book
Experiment data collection (*Individual*) and Original lab report in the prescribed format, and attendance		70	Second session of every experiment within the announced deadline	Open Book
Post Lab Quiz (Understanding theory, experimentation, analysis)	variable	15	Will be announced	Closed Book

Chamber Consultation Hour: To be announced in class.

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

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

(i) Documents prior to the lab.

(ii) 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 F244