Birla Institute of Technology & Science, Pilani
Hyderabad Campus

SECOND SEMESTER 2024 - 2025

Course Handout Part II

06.01.2025

In addition to part 1 (General Handout for all courses appended to the timetable), this portion gives further specific details regarding the course.

Course No. : PHY F110
Course Title : Physics Laboratory
Instructor In-charge : Sashideep Gutti
Instructors : Sashideep Gutti, Aranya Bhattacharjee, Asrarul Haque, Prasant Samantray, Subhash Kalberkar, Swastik Bhattacharya, Sutapa Roy, Subramanya Bhima Sankar Davuluri, Viswakannan RK, Anagh Venneti, Rakesh Jha, Anjali Vajiji, Pritam Roy, Aprajita Srivastava, Sai Ruthvik, Akshay Kulkarni, Lekshmi, Debanjan Guha Roy.

Aim

Familiarize the students to the experimental methods in physics and also to integrate theoretical knowledge with practical experience. Students will learn operation of scientific equipment for collecting data from the online videos and do the analysis of collected data.

Learning outcomes

- Identifying and quantifying sources of error in an experiment.
- Fitting experimental data to an expected theoretical expression.
- Error analysis.
- Use of logarithmic graph sheets.
- Usage of optical instruments such as microscopes and spectrometers, through online videos.

Text books

Lab manual (Soft copy), slides and videos
Reference: Relevant reference materials are specified in the lab manual.

Experiments

1. Error analysis and graph drawing
2 Coupled pendulums
3 Kater's pendulum
4 Combination of springs
5 The vibrating string

6 Rotational inertia of flywheel
7 Resonance LCR circuit
8 Newton's rings
9 Calibration of diffraction grating
10 Diffraction grating: separation of sodium lines

Evaluation scheme

Evaluation components Weightage	Duration	Weightage	NATURE OF COMPONENTS	Date And Time
Day to day performance	1 hour 50 min per class	35 %	Open	
Comprehensive written exam	3 hours	20%	Closed	10/05FN
Comprehensive practical exam		45%	Closed	

Day to day performance for each lab class

Activity	Marks
Active participation in lab	10
Calculation and graph. Submit the report by next lab. Late submission will not be considered.	25
Total	35

You must arrive at the lab on time. Marks will be deducted for late arrivals. If you arrive within the first 1-10 minutes, 2 marks will be deducted. If you are late by 10-20 minutes, 5 marks will be deducted. The lab doors will close after 20 minutes, and you will not be allowed entry. No makeup sessions will be provided for labs missed due to late arrivals.

The total marks for day-to-day performance of the labs will be scaled down to the corresponding total marks mentioned in the first row of the previous table.

Students MUST submit the lab report in the specified format for each experiment before the next lab. Late submission will not be counted as SUBMISSION and therefore no marks would be awarded. Students are expected to read the allotted experiments from the manuals before attending the lab, so that they can actively take part in the discussion and answer the quiz.

Pass-Criteria: The student should obtain at least 30% of A cutoff or 40% of the median (whichever is lower) to get a valid grade in this course. If the criteria is not met the student will be awarded NC grade.

Make-up

The schedule of the experiment is very strict: the students are expected to attend all the labs regularly. Make-up will be given only in case of hospitalization/other unavoidable technical issues. More than 2 make-up experiments will not be entertained.

Notice: Notices concerning this course will be displayed on CMS/LMS.

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.

Instructor-In-Charge
PHY F110