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**FIRST SEMESTER 2022 - 2023**

# **Course Handout Part II**

18.10.2022

In addition to part‑I (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 : K V S Shiv Chaitanya

Instructors : Souri Banerjee, Asrarul Haque, Subrahmanya Bhima Sankar, Rahul Nigam , Swastik Bhattacharya, Sabur Ahmed Barbhuiya , Sreeshna S, Urjjarani Patel, Priyanka Mitra, Geetika Sahu, Anamika Avinash Pathak, Debanjan Guha Roy, Anagh Venneti, Sajia Yeasmin, Suraj Kumar Maurya, Subhash Karbelkar

**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 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** | **Date & Time** |
| Day to day performance | 1 hour 50 min per class | 30 % |  |
| Comprehensive lab exam |  | 40% |  |
| Comprehensive exam |  | 30% | 17/02FN |

**Day to day performance for each lab class**

|  |  |
| --- | --- |
| **Activity** | **Marks** |
| Active participation in lab (Discussion/quiz) | 10 |
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| Calculation and graph (submission within 72 hours) | 20 |
| Total | 30 |

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 within 72 hours of the class. 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.

**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.

**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**