



Birla Institute of Technology & Science, Pilani
Hyderabad Campus

Second Semester 2018 - 2019

Course Handout (Part II)

Date: 07/01/2019

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: **Prof. Subash N. Karbelkar**

Instructors: Dr. V. Satya Narayana Murthy, Dr. K V S Shiv Chaitanya, Mr. Krishna Prakash Nunna

1. Scope and Objective of the course

The aim of the course is to introduce to students important experiments in Modern Physics which includes Quantum Mechanics, Optics and Nuclear Physics. The objectives are to supplement textbook learning with experimental demonstration and to impart experimental skills with particular emphasis on data collection and analysis of data.

2. Experimental Notes

Experimental notes will be uploaded on COURSE MANAGEMENT SYSTEM where necessary. Students should also consult the lab and instruments manual and follow appropriate experimental procedure.

3. Course Plan

List of Experiments

S.No.	Experiment
1	e/m
2	Millikan oil - drop
3	Photoelectric effect
4	Fabry Perot interferometer
5	Brewster's angle measurement
6	Setting up He-Ne laser
7	Quincke's tube
8	ESR/NMR
9	Frank Hertz experiment
10	Geiger Muller counter



4. Evaluation Scheme

Components	Duration	Weightage (%)	Date and Time
Attendance, day to day performance and record		50	
Quiz (date will be announced in the lab)	60 minutes	20	
Comprehensive Practical Examination	1 hour	30	

5. Make-up policy: It is applicable to the following two cases and it is permissible on production of evidential documents. (i) Debilitating illness, and (ii) Out of station with prior permission from the Institute.

6. Notices: All notices will be displayed on the Physics Group Notice Board._

General conduct rules and guidelines

You need to maintain a *Record Note Book* and each experiment has to be written up according to the format given in the table below. This note book will be evaluated according to the given scheme.

Apart from this you should maintain a *lab note book* in which you will record the sequence and the observations as you perform the experiment which may include successful steps, and erroneous procedures.

Evaluation Scheme for each experiment: Total = 40 Marks

No.	Component	Marks
1	Aim / Objective	5
2	Introduction a) Physics of the phenomenon b) About the Instrument	5
3	Experimental method	5
4	Data Collection	10
5	Analysis & Result a) Curve fitting b) Calculation & Error estimation c) Plotting, labeling the axes and units	10
6	Explanation for the agreement or disagreement of the result with theory	5

1. You should understand the reading material before performing the experiment. There will be a quiz on the day's experiment.
2. You are not allowed to write the quiz if you are late by more than 5 minutes.



3. You should repeat each experiment at least three times to estimate the error in your measurement. Error analysis should be done for all the experiments.
4. You have to write the record in your own words. Copying from internet and from other records is not allowed. If two or more records matter and data are same or copying from some other source is found you will be awarded zero marks for record.
5. Cell phones have to be switched off during the lab hours.
6. In this course, you will be graded for the scientific process and not for the final answer. Therefore, it is important to maintain academic and personal integrity. Ethical violations include cheating on lab data, plagiarism such as copying from sources from the internet, reuse of assignments, unauthorized collaboration, alteration of graded assignments, forgery and falsification, lying, facilitating academic dishonesty. Report any violations you witness to the instructor.
7. **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

