Grading scheme and overview of PHY 331

Physics Lab

Lahore University of Management Sciences

Experiment Number	Title	No. of weeks	Pre-Requisite
2.1A, 2.1B, 2.1C, 2.1D, 1.16, 1.2A	Uncertainties in Measurands	1	
2.2	Introduction to the lock-in amplifier	1	
2.3	Temperature oscillations in a metal: probing aspects of Fourier analysis	2	
2.5	Chaos and nonlinear physics	1	
2.6	Faradays effect	2	2.2
2.9	Michelson interferometery	1	
2.10	Band structure and electrical conductivity in semiconductors	2	
2.11	Tracking Brownian motion through video microscopy	1	
2.12	The magnetic pendulum	1	2.5
2.14	Energy dispersive X-ray fluorescence	2	
2.18	Synthesis of high temperature superconductor using citrate pyrolysis and observing the Meissner effect	1	
2.19	Gamma-ray spectroscopy	2	
2.20	Measuring Muon-lifetime	2	
5.1	Spring Pendulum	1	
5.2	Sliding Friction	1	
5.3	Colliding Pucks on a Carrom Board	1	
5.4	Analyzing Simple Pendulum Phenomenon	1	

Notes

- Every experiment will be performed by students individually. There will be no partners.
- Grading will be carried out on a weekly basis. Each student will be graded on his weekly performance out of total of 15 marks for a week (irrespective of the length of the experiment).
- There will be a quiz on Thursday, 19 September (30 marks) covering different aspects of errors and uncertainties.

- Each experiment carries 15 or 30 marks (former for one week and latter for two week) experiments. The rough distribution of the marks is as follows:

    1. 20% Oral examination that will take place on every Friday pertaining to your allocated experiment
    2. 40% Lab notebook and diary
    3. 40% Experimental procedures (data analysis and interpretation, correlation with theoretical background, uncertainties etc)

- Marks will be deducted for:

    1. Not complying to rules of the lab: one must bring a lab notebook which is defined as a hard bound diary; one must leave the lab on Thursday with all the apparatus in neat and orderly fashion so that it is ready for the next group; leaving cluttered pages and your personal belongings in the lab
    2. Missing a lab session: there will be no make-up labs
    3. **Arriving later than 9 AM.**
    4. Arriving in the lab on Friday **without** reading the experiment manual of the assigned experiment.

- In total, 2 reports must be submitted for 2 experiments by each student. Each report should be 3-4 pages long, preferably typed in LaTeX and supplied in pdf format. Samples of LaTeX files can be provided. The report has to be submitted individually. No copying or consultation with your peers or even with your lab partner is allowed. You can choose which experiment to write a report on. Each report carries 25 marks and the rough distribution of the marks is as follows:

    1. 30% Accuracy of description, scientific correctness
    2. 25% Readability and clarity of the text. Organization of the text: the report must have a title, abstract, general introduction, experimental procedure, presentation of results and a detailed discussion.
    3. 25% Presentation of results in the form of suitable graphs, plots and illustrations with most appropriate labeling, choice of axes, forms of graphs
    4. 20% Evaluation of uncertainties

- The deadlines for the reports are:

    - 31 October 2014, 9 AM: **First report**
    - 02 January 2015, 9 AM: **Second report**

- A summary of the grading scheme for the course is presented below.

Quiz on errors	30
LabVIEW homework	20
Report 1	25
Report 2	25
Uncertainty homework	15
Weekly experimental work	159=135
Total	250