Physics Laboratory PHYB10H 2014

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Structure of the Course

PHYB10H3F is a laboratory course. It consists of experiments intended to prepare students for work in an Intermediate Physics or Electronics lab. The major requirements are formal reports. Their due dates are given in the Timetable below.

a) You are required to complete three experiments—the first of the following experiments and then one from each of the two groups of experiments following. You must complete a formal report for each experiment you do. Except for the first experiment, you will spend four lab periods (12 hours) on each experiment. Attendance is taken to form a lab participation mark.

1 *DC Circuits and Measurements*

2 *Diodes and Rectifiers*
3 *The d'Arsonval Galvanometer*

4 *Wave Filters*
5 *Amplifiers*

b) A penalty of 20% of the mark awarded per working day (to a maximum of 100%) will be assessed against any report handed in after the deadline. You must submit your report in person to the instructor by 5:00 p.m. on the due date.

c) If your report is overdue you will not be allowed to start work on another experiment until you have handed in the overdue report.

Lectures: Wed 10 am – 11 am
Lab Hours: Wed 11 am – 2 pm (P0001) Wed 2 pm – 5 pm (P0002)

Time Table 2014:

Week	Date of Lecture/Lab	Lab #	Lecture	Title of Lecture
01	3 September	No Lab	01	*Dealing with Uncertainties*
02	10 September	01	02	*DC Circuit Elements*
03	17 September	02	03	*DC Circuit Analysis*
04	24 September	03	04	*Writing the Formal Report*
05	1 October(1st report due 5 pm)	04	05	*AC Circuits I: Basics*
06	9 October	05	06	*AC Circuits II: Steady State Signals*
	15 October – READING WEEK			
07	22 October (Quiz 1)	06	07	*Quiz 1*
08	29 October	07	08	*AC Circuits III: Transient Signals*
09	5 November (2nd report due 5 pm)	08	09	*Diodes and Rectifiers*
10	12 November	9	10	*Aspects of Signal Analysis*
11	19 November	10	11	*Amplification*
12	26 November	11	Quiz 2	
	(3rd report due 5 pm Dec. 1)			

Course Credit

3 formal reports	75%
2 quizzes	15%
Lab participation (attendance)	10%

Working in the Intermediate Physics Laboratory

a) When you sign in, the lab Instructor will ascertain that you are prepared.

b) During the lab period the Instructor may quiz you about background, progress and understanding.

c) Your lab notebook may be examined when you sign out (or before the Instructor leaves). The following week's experiment will also be arranged with the Instructor.

d) There will be two quizzes on the dates given in the timetable, which will contribute 15% to the final course grade.

e) The Instructor will grade the lab reports and will maintain a record of the grades awarded

f) PHYA21 is a prerequisite for PHYB10. If you have not passed PHYA21 your registration in PHYB10 will be cancelled.

The instruction manuals for the experiments are posted on the web page. In order that you use your time effectively, you are expected to plan experiments in detail, and to consult with the lab instructor **before** the laboratory period. Because only a limited amount of equipment is available, experiments should be scheduled at least **one week** in advance. You are expected to be present and working in the laboratory for 12 three-hour periods during the term.

You must record all your measurements and observations, and a narrative of what you do in the lab, in a hard bound laboratory notebook. **All readings**, even preliminary ones, should go into it. If some measurements prove to be incorrect, you should write a note next to them explaining why, but **never erase anything from your book**. Calculations and answers to questions asked in the lab manual should also be recorded there. Be sure to plot graphs of your data (where appropriate) **as you go along**. The book must be sufficiently comprehensive and accurate for you later to reconstruct the experiment in your mind, since it will form the basis of your formal report. Your notebook **must be initialed** by the instructor before you leave each lab period.

Grades will be assigned according to the following criteria:

Percentage	Grade	Grade Definition
85-100	A	Exceptional performance with strong evidence of original thinking, good organization, capacity to analyze and synthesize; a superior grasp of the subject matter with sound critical evaluations; evidence of an extensive knowledge base.
80-84	A-	
77-79	B+	Good performance with evidence of a grasp of the subject matter, some evidence of critical capacity and analytic ability, and reasonable understanding of the relevant issues under examination; evidence of familiarity with the literature.
73-76	B	
70-72	B-	
67-69	C+	Intellectually adequate performance of a student who is profiting from his university experience; an understanding of the subject matter and an ability to develop solutions to simple problems found in the material.
63-66	C	
60-62	C-	
57-59	D+	Minimally acceptable performance; some evidence of familiarity with the subject matter and some evidence that critical and analytic skills have been developed.
53-56	D	
50-52	D-	
0-49	F	Inadequate performance in which there is little evidence of even a superficial understanding of the subject matter; in which there is weakness in critical and analytic skills, with limited or irrelevant use of literature.