

Physics 33400 – Advanced Experimental Physics

Spring 2016

Time: TWTh 01:30 PM - 05:20 PM

Location: KPTC 105

Instructors: Luca Grandi lgrandi@uchicago.edu, Cheng Chin cchin@uchicago.edu,
 Van Bistrow vanb@uchicago.edu, Mark Chantell chantell@uchicago.edu

Class requirements:

- *Two experiments*
- *Two reports*
- *One seminar presentation*
- *Full attendance of the experiment and the presentation sessions*

Course schedule

Week	Date	Time	Location	Schedule
Week 1	3/30	1:30 pm	KPTC 103	Organization meeting
Week 2	4/5,6,7	1:30~5:20pm	KPTC 105	Experiment I
Week 3	4/12,13,14	1:30~5:20pm	KPTC 105	Experiment I
Week 4				Report writing
Week 5	4/26	1:30~4pm	KPTC 103	Presentations
Week 6	5/3,4,5	1:30~5:20pm	KPTC 105	Experiment II, Report I due (5/3)
Week 7	5/10,11,12	1:30~5:20pm	KPTC 105	Experiment II
Week 8				Report writing
Week 9	5/25	1:30~4pm	KPTC 103	Presentations
Week 10	6/1			Report II due (6/1)

Experiment placement

Experiment	I	II
1		
2		
3		
4		
5		
6		
7		

Presentation placement:

4/26:

5/25:

* 25+5 minutes Q&A, content should roughly follow the report, see below.

Lab report requirement:

Physical Review format, 4~6 pages, including figures. Itemize your answers to the questions in the lab manual. Raw experimental data should be provided as an attachment or in a separate file. PDF please (No Microsoft Word).

Content:

- A. Title, author and abstract
- B. Introduction: Significance of this experiment in modern physics.
- C. Theoretical background
- D. Experimental setup and methods
- E. Data (shown in figures with fits/predictions and error bars)
- F. Discussion (discrepancy between measured and literature values, for example.)
- G. Ideas to improve the experiment.

Note: Figures should be large enough to be legible, with labeled axes, the fonts for axis labels and legends large enough for publication, tick marks on all 4 sides, and clear, large, and unique symbols for different types of data or predictions. Lines should be of sufficient weight for publication. The captions are particularly important- they should provide a self-contained complete description of the figure and its meaning.

- Late policy: 10% deduction per day after the deadline
- Reports should be emailed to Cheng, Luca and Van.

Evaluation: lab works 30%, report 50%, presentation 20%