

**Physics 33400 – Advanced Experimental Physics**

Spring 2011

Time: TWTh 01:00 PM - 05:00 PM

Location: KPTC 105

Instructors: David Schuster [dis@uchicago.edu](mailto:dis@uchicago.edu) and Cheng Chin [cchin@uchicago.edu](mailto:cchin@uchicago.edu)

Laboratory Coordinators: Van Bistrow and Mark Chantell

Email: [vanb@uchicago.edu](mailto:vanb@uchicago.edu), [chantell@uchicago.edu](mailto:chantell@uchicago.edu)Class Website: <https://chalk.uchicago.edu/>

## Class requirements:

- *Two experiments*
- *Two experiment reports*  
(The report should be 10~15 pages, including introduction, goals of the experiment, theory background, experiment procedures, results, data analysis, discussion, conclusion, and answers to relevant questions listed in the manual.)
- *One seminar presentation (20 min. +10 min. Q/A)*
- *Full attendance of the experiment and presentation sessions*

**Course Schedule**

<b>Week</b>	<b>Date</b>	<b>Time</b>	<b>Location</b>	<b>Schedule</b>
Week 1	3/30	1:30 pm	KPTC 103	Organization meeting
Week 2	4/5,6,7	1 ~ 5 pm	Lab	Experiment I
Week 3	4/12,13,14	1 ~ 5 pm	Lab	Experiment I
Week 4				Report writing
Week 5	4/27			Report I due
Week 5	4/27	2 ~ 3:30 pm	KPTC 103	Presentations
Week 5	4/28	2 ~ 3:30 pm	KPTC 103	Presentations
Week 6	5/3,4,5	1:00 ~ 5pm	Lab	Experiment II
Week 7	5/10,11,12	1:00 ~ 5 pm	Lab	Experiment II
Week 8				Report writing
Week 9	5/25			Report II due
Week 9	5/25	2 ~ 3:30 pm	KPTC 103	Presentations
Week 9	5/26	2 ~ 3:30 pm	KPTC 103	Presentations

Experiment	Expt. 1	Expt. 2
Mossbauer		Soke / Kartik
Compton	Andrew / Kok-Meng	Federico / Nanyoon
Raman	Nanyoon / Kartik	Brian / Kok-Meng
Zeeman	Federico / Soke	Andrew / Brandon
NMR	Brandon / Brian	
Atom trapping	Mike / Jen	

**Presentation placement:**

4/27 and 4/28: Andrew, Kartik, Federico, Brandon, Jen

5/25 and 5/26: Soke, Nanyoon, Brian, Kok-Meng, Mike

Lab report structure:

Should be about 10-15 pages, single line, 12 pt. font, including figures, excluding raw data, which should be attached.

Format:

- A. Introduction: Why are we doing this experiment?
- B. Theoretical background
- C. Itemized questions to be answered or quantities to be measured
- D. Experimental methods
- E. Data (shown in figures with fits/predictions) supporting F.
- F. Final result for C.
- G. New ideas and ways to improve the exp.

- Late policy: 10% deduction / day after the deadline
- Presentation 20+5 mins, style should roughly follow 2.
- Grade: lab 30% report 50% presentation 20%