Advanced Laboratory I
PHY 334 Spring 2006

Class Hours
Tuesday (SLN 43981) Thursday (SLN 75734))
12:40–1:30 in PSF 306 12:40–1:30 in PSF 306
1:40–3:30 in PSF 377 1:40–3:30 in PSF 377

INSTRUCTOR: Dr. Gary B. Adams
E-MAIL: gary.adams@asu.edu
WEB PAGE: http://www.public.asu.edu/~gbadams

CLASSES OFFICE HOURS (tentative)
PHY 111 10:40–11:30 MWF PSF-101 2:40–1:30 MWF PSF-462 (PSF-306 on W)
PHY 131 1:40–2:30 MWF PSF-173 11:40–12:30 TTH PSF-306
PHY 334 12:40–3:30 TTH PSF-377 3:40–4:30 W PSH-352 Help-Study

NOTE: All Office Hours are open to all of my students.

Teaching Assistant
Jim Ball, JAMES.P.BALL@asu.edu, Office hours: TBA

Course Objective:
Development of experimental techniques and data analysis skills; introduction to report writing; laboratory notebook usage. Students should purchase two full-size bound laboratory notebooks (you should be able to tape or paste 8.5x11 sheets into your notebook). Each student will maintain his/her own laboratory notebook and will submit an individual lab report.

Experiments:
Four to five experiments will be performed in groups of three to four students. The lab schedule is attached to this syllabus. Descriptions of the experiments are available at

http://www.public.asu.edu/~gbadams/spr06/334/334syl1.html
Location:
PSF306 (Tuesdays and Thursdays 12:40-1:30) are reserved for any necessary meetings of the full class. These meetings will be announced as necessary. However, most weeks the entire three hour class time will be spent in PSF-377.

Email:
Your ASU email address will be used to disseminate information. Students are responsible for receiving it. Make sure that your ASU email address is functional and that your spam filter, if operating, allows emails from both instructors and from our TA.

Reference Books:
The following books have been requested on the Reserve List at Noble Library:
* Adrian C. Melissinos, Experiments in Modern Physics
  The 1966 version has both Thermionic Emission and Compton Scattering.
  There are also several copies available in PSF377.
* John R. Taylor, An Introduction to Error Analysis
* Bevington and Robinson, Data Reduction and Error Analysis
  If you plan to be an experimental physicist, it is worthwhile to purchase a personal copy of Bevington. It is a standard and often-used reference. In the 3rd edition, the rules for propagation of errors are on pages 48-49.
* J.J. Brehm and W.J. Mullin, Introduction to the Structure of Matter
  Brehm and Mullin contains useful information for both the X-Ray Physics and Compton experiments.

Grading:
The due dates for each lab are available on the Lab Schedule. For each lab, each student will turn in their lab notebook plus a 2-3 page summary of the lab, which should indicate where, in the lab notebook, all relevant data, calculations, graphs, etc. can be found. The lab grade will consist of the instructor’s evaluation of both the student’s lab notebook and the written summary. For the Astrophysics Labs, these instructions will be superseded by instructions from Paul Scowen.