

COURSE TITLE:

Experimental Physics

CALENDAR ENTRY:

Physics 409. (to determined by Dept.) *Experimental Physics* — A laboratory course with a wide choice of experiments for fourth year Honours and Major students. Topics include solid state, nuclear, classical, quantum, electromagnetic and low temperature physics. For six credits, two weekly laboratory periods and completion of a project in second term are required. The Fall term is PHYS 409A; the Spring term is PHYS 409B. *Prerequisites:* PHYS 309 or 319. *Corequisites:* none. [0-3-0; 0-3-0]

TIME AND PLACE: Laboratory: Mon, Wed & Thu 14:00-17:00 in Hebb 50-52 (also used by Phys 352 in Fall)

WEB SITE: <http://www.physics.ubc.ca/~phys409/>

INSTRUCTOR: Jess H. Brewer

E-MAIL: jess@physics.ubc.ca

OFFICE: Hennings 320A: 822-6455

LABORATORY: TRIUMF: 222-1047, ext 6471

OFFICE HOURS: By special appointment,
until an optimum alternative is found.

MARKING:

(TENTATIVE)

ITEM	MARKS
Oral presentation, Experiment 1	15
Draft Report for Experiment 1	5
Final Report for Experiment 1	25
Lab performance & Notebook for Expt. 1	5
Oral presentation, Experiment 2	15
Draft Report for Experiment 2	5
Final Report for Experiment 2	25
Lab performance & Notebook for Expt. 2	5
TOTAL	100

TEXTBOOK: Various on-line documentation, manuals, tutorials, wikis and help files.
You need not spend any money on dead trees in this course.

REFERENCES: The diversity of topics will require numerous sources. A list of Web links to useful references will be maintained on the course's Website.

Physics 409 is designed to be a practical introduction to how experimental physics is performed beyond the undergraduate level, whether it be in industry or within academia. Communications skills are emphasized. P409A is a first term 3 credit course in which students choose between a range of experiments including nuclear magnetic resonance, x-ray diffraction, chaos, positron emission tomography, the speed of light and many others. For each experiment the students are taught how to make a short oral presentation on scientific results and how to prepare a journal article. The lab is open Mon, Wed and Thu 2:00-5:00PM. You should plan on attending at least two of these sessions per week.

Physics 409B is a second term 3 credit course. Those students who have credit for 409A will develop their own experiment or extend an existing experiment. PHYS 409B is also available to those who were not able to take 409A in first term. For these students 409B will be similar to the first term 409A course.

PHYS 409B should *not* be taken at the same time as PHYS 449.

A more detailed description of the course may be found at the Web site listed above.