

## **P429A Course Outline**

Course Web page (Brightspace): <https://bright.uvic.ca/d2l/home/150153>

Submit completed reports in PDF format via “Assignments “ in Brightspace Shell

Course Instructors :

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### **Scheduled Lab Times:**

Officially the lab is open Mondays 2:30 – 5:30 pm, however the lab will also be open Thursdays 2:30-530 pm and will be opened upon request throughout the week.

The lab is spread across several rooms: Elliott 123, Elliott 122, Elliott 042 and Elliott 013

### **Course Description:**

Introduction to research, with several research-oriented experiments and with instruction on experimental techniques and theory of measurement.

### **Course Prerequisites:**

Normally open only to fourth year Honours students.

**This is an experimental physics course. All labs/experiments are hands-on and there is no provision for strictly theoretical or computational projects. P429A is a full year course and it runs from September to April.**

Students will be required to complete 6 experiments throughout the year. These can be chosen from a wide selection of subjects spanning across atomic, quantum and classical optical, solid-state, and nuclear physics, microscopy, fluid dynamics, and geophysics. The regular experiments are expected to take 3 weeks but students will be permitted up to 4 weeks, to complete their write up.

**All labs have to be completed in order to pass the course and there will be a 10% penalty per week for late submissions.** Because of the fourth, “contingency” week, this rule will be strictly enforced, barring special circumstances.

Reports will follow the Physical Review style (4 pages) for experiments. It is recommended that students use *LaTeX* to typeset their experiments, as this is the current convention among all major journals.

Upon completion of each lab, each student will participate in a one-on-one interview with one of the course instructors to go over the experiment and the report.

Experiments will be marked as follows: 50% for the report, 20% for lab engagement and 30% for the oral defense. Markers will be assigned when a student selects an experiment or project, and both student and marker will be notified.

Overall marking distribution is as follows:

84% Lab work (6 reports, see above)

16% Oral Presentations

The practical exercise requires completion during the first weeks of class. Failure to complete the exercises will result in a deduction of 10% off of your final mark.

The oral presentation component will be worth 16% of the course grade. It will consist of two sessions, each worth 8%. The sessions will consist of a 12 minute presentation (10 minute talk + 2 minutes for questions). It is expected that all students attend all presentations and participate by posing questions to the speaker - a grade for participation is assigned.

**If a submitted lab does not meet the standard for a 4th year honours course you may be asked to revise and resubmit it. Also, a report can be improved and the marker can invite the student to resubmit at the time of the oral defense.**

If a student should come up with their own idea for an experiment, please see your instructors. Devising your own experiments is highly encouraged, provided that the level is appropriate for a 4th year honours lab.