

Notes for Thursday Sept 12, 2018

1. Opening comments

-this course culmination of undergraduate training.

-first real chance to apply skills on a research project.

-expectations are high based on previous students in this course. You are an elite group.

-aim high --it is reasonable to expect your work could be publishable in a journal. A publication at this stage of your career could have big impact.

-many of you will go on the graduate school and careers in research. This is chance to find out if you are suited to this kind of work- risk and reward- thrill of doing something for the first time and discovering something new versus frustration of putting in long hours of work without any certainty of a good result. Sometimes results come easily on a first attempt. More often a lot of hard work and perseverance is required and there are still no guarantees.

2. No significant conflicts with other courses expected. This can be worked around.
3. If you haven't already done so please send me an email at kiefl@triumf.ca with PHAS449 in subject so I can make up a master email list for the course.
4. If you don't already have a project/supervisor please have a look at the possible projects posted on the website. Make appointments to talk with a few potential supervisors. TRIUMF, BC Cancer, Math Department, Biology, Chemistry, Earth and Ocean Science, Medicine all OK. Common denominator is Physics so the talks and project should take this into account. Your supervisor should be a faculty member or scientist. Postdocs in a larger group are also possible but there should be some more senior person who oversees the project (e.g. group meetings), even if the head of the group is not doing any day to day or week to week supervision.
5. As soon as you have decided on a project send me an email with the following information and cc this to your supervisor.
Supervisor's name, affiliation and email:
Title of the project
Short (half page) description of the project.
An agreement on how often you will meet and how many hours week you will devote to this course on average.

6. Course website phasnew.phas.ubc.ca/~phys449

7. Any good research project has 3 elements.

- (i) Proposal (written and/or oral) to secure resources (e.g. funding or beamtime). You need to convince someone the project has some value.
- (ii) The actual research project-- experiment, theory, simulation, or more usually some combination of these.
- (iii) Communication of results (needed for impact/ show value),--journal article, thesis, scientific talk etc

Need all 3

8. This course set up to strengthen your skills in all three areas.

10% participation/evaluation.

20% proposal (written plus oral)

10% progress report (oral presentation or draft of thesis?)

20% final oral

40% written thesis

9. Proposals should be 4 pages, written in Latex, details will be on website, stress science justification, theory, experimental or computational methods, resources list and a detailed schedule. This must be read over and approved by supervisor prior to the talk. Give it him/her at least a few days in advance to make sure you get some feedback. Due date 12:00 midnight Friday Nov 15th the week before the proposal talk begin.

10. Dates for the proposal talks are Tu Nov 19 (12-7), Wed Nov 20 (12-7) and Fr Nov. 22 (12-7) in Hennings 318.

Let me know ASAP if you can't make some part of two of these afternoons. You are expected to evaluate 10 talks in total. Each of them is 30 minutes including questions.

11. **Warmup exercise:** Once you have a project/supervisor request from your supervisor for a copy of his/her recent NSERC/ CIHR grant proposal that is most closely related to your project. Read it carefully. In your own words describe the main scientific motivation and the proposed methods the grant. Be prepared to say a few words about it at our next meeting.

12. Time for meetings needs to be decided. What works best for everyone? Options are Tuesday sometime between 12:30-2:00 or Th sometime between 12:30-2:00. We will have meetings every 2 or 3 weeks. It looks like all the meetings will be on Th 12:30-2:00 based on the response today.