PHYS 273H - Fall 2019: Honors Project

Students enrolled in PHYS 273H will perform an independent study project on a topic related to waves and oscillations. Students will submit the results of the project to me and give a 15-minute presentation to the other honors students.

Project Types: You are free to decide the scope and style of your project, subject to approval by the instructor. Here are several possibilities:

- Study of waves and radiation from a more advanced textbook (Griffiths, Feynman Lectures Volume 2, Georgi), including more advanced homework problems.
- Write a program to do a complicated wave propagation calculation.
- Build an electronic device which uses a resonant circuit.
- Independent reading on a special topic, with a substantial final paper(15-20 pages). Some examples:
    - High Q oscillators; waveguides; axion search experiments
    - Water waves; tsunamis; ect.
    - Lasers and quantum optics
    - Gravitational waves
    - Seismology
    - Sound; musical instruments
- Come up with your own ideas.....

Project Proposal: Write a proposal for your project (see next page). I will approve the proposal or suggest changes.

Deadlines/Milestones:

1. Schedule an appointment with me **before Friday September 13th** to discuss ideas for your project proposal.
2. Submit your project proposal to me **by Friday September 20th**.
3. We will meet in class on **Tuesday September 24th** to discuss your proposals.
4. Status report meeting in class on **Tuesday October 22nd**.
5. Status report meeting in class on **Tuesday November 19th.**
6. Your final deliverables will be due on **Monday November 26th**.
7. Final presentations will be held at a mutually agreeable time, either the last week of classes (December 2-6) or during exam period (December 10-17).

You must attend all of the PHYS 273H meetings and be prepared to discuss the status of your project.

Final presentation: At the end of the semester you will present the results of your project in a 15-minute presentation to the honors students.

PHYS 273H Honors Project Proposal

Name:
Project title:

Scope: Describe the content of your project.

Key resources & references:

Interim Deliverables:

- By October 22nd:

- By November 19th:

Final Deliverable(s), to be submitted by Monday November 26th:

Grading Scheme (to be determined by the instructor):