

Fall 2018

## Syllabus

Physics 451/452: Senior Thesis

Physics 495/496: Honors Thesis

Fridays 2-2:50 pm in Small Hall room 233

*Undergraduate prerequisites:* You must have a physics research advisor.

### Instructors

**Prof. Seth Aubin**

Office: room 255, Small Hall, tel: 1-3545

Lab: room 069, new wing of Small Hall, tel: 1-3532

e-mail: [saubi@wm.edu](mailto:saubi@wm.edu)

web: <http://www.physics.wm.edu/~saubin/index.html>

*Office hours:* Open office hours and Thursdays 4:30-5:30 pm.

### Course Objectives

The primary purpose of this course is to introduce the basics of presenting scientific research. The course will cover the following topics:

- Abstracts, i.e. executive summary of a paper.
- The science pitch, i.e. “elevator” talk.
- Long talks.
- Project reports.
- Science literature search resources.
- Graduate school and employment.
- Science and engineering teams.
- Science ethics and professionalism.

### Course Materials

There is no textbook. The instructor will provide training documents.

### Evaluations

You will receive a grade of “G” for the first semester of the senior thesis course, which will then be converted to a final grade after completion of the thesis in the second semester. Your final grade for the course will be determined by your research advisor with input from the instructor. This grade is based on the quality of your research, effort, midyear report and talk, senior thesis and defense talk, and participation in the PHYS 451/452 or 495/496 courses. An informal grade will be provided at the end of the semester, as well as guidance on the trajectory of the research.

*Thesis and defense (2<sup>nd</sup> semester):* These written and oral presentations are the primary means of evaluating your work.

**Research effort:** Your weekly productivity and effort on your thesis project are essential components of your course performance.

**Midyear report and talk:** These written and oral presentations provide guidance on your research performance and can complement evaluations in the second semester.

**Short talks and abstracts (1<sup>st</sup> and 2<sup>nd</sup> semesters):** These short oral and written presentations will occur at the start of each semester.

**Course participation:** In class participation is required.

### **CAUTION**

- PHYS 451 and 452 (or PHYS 495 and 496) are required for graduation as a Physics major.
- Two semesters of PHYS 451/452 or one semester of PHYS 495/496 will satisfy the COLL 400 requirement. You need three credits of COLL 400 to graduate.

### **Important academic deadlines**

Add/drop deadline: Friday, September 7, 2017

Withdraw deadline: Friday, October 26, 2017

## **Weekly Schedule** (tentative)

**Week 0: 8/31**

**Class: Intro to Senior Thesis**

Overview of the senior thesis course, submission of project titles, photos.

**Week 1: 9/7**

**Class: The “elevator” talk/abstract**

The science pitch: oral and written forms.

**Week 2: 9/14**

**Class: Scientific Literature Search Workshop**

Workshop by Ms. Kristy Borda, Science Librarian. Location: Swem.

**Week 3: 9/21**

**No Class**

**Week 4: 9/28**

**Class: Short talks**

Students will give two minute talks and submit brief abstracts on their thesis project.

**Week 5: 10/5**

**Class: Graduate School and Employment**

Advice on job searching and where and how to apply for graduate school.

**Week 6: 10/12**

**Class: EPAD Team Training**

Engineering-related training for EPAD teams.

----- Fall Break -----

**Week 7: 10/19**

**Class: Scientific Ethics Training**

Tutorial on the ethical conduct of science and professionalism of scientists.

**Week 8: 10/26**

**Class: Scientific Writing and Talks**

Structure and style of science papers, reports, proposals, and talks.

**Week 9: 11/2**

**Class: Midyear Report Workshop**

Workshop where students will draft an outline of their midyear report and talk.

**Week 10: 11/9**

**TBA**

**Week 11: 11/16**

**TBA**

**Week 12: 11/19**

**Monday: Midyear report drafts are due**

----- Thanksgiving Break -----

**Week 13: 11/26-30**

**“Report feedback week”**

Research advisors and instructor will provide feedback on midyear report drafts.

**Week 14: 12/3-7**

**Midyear Talks, week 1**

**Week 15: 12/10-14**

**Midyear Talks, week 2**

## *Dates to Remember for 2019 Graduates*

- **August 31 (Fri)** - All seniors: the title of your research topic and the name of your advisor must be given to the Research Coordinator Professor Seth Aubin
- **Nov 19 (Mon)** Written Report due to advisor and Research Coordinator. (By **Wed, November 28**, Advisors are to give students any comments about their paper.)
- **Dec 3 (Mon) – Dec 13 by noon (Thu)** Mid-term presentations in conference room.
- **March 29 (Fri)** 4 weeks before last day of classes in senior year - Complete draft of thesis turned in to advisor.
- **April 8 (Mon)** Sign up for final presentations in Small Hall 123C
- **APRIL 12 (Fri)** 2 weeks before last day of classes in senior year  
Honors Projects: Corrected complete draft of thesis submitted to members of the examination committee.
- **APRIL 19 (Fri)** 1 week before last day of classes in senior year  
Senior Projects: Corrected complete draft of thesis submitted to your adviser and research coordinator.
- **APRIL 22 (Mon) - May 2 by noon (Thu) Presentations** (Honors - Bring your cover sheet for signatures by the committee). *Honors Presentations get priority April 22 to April 26.*  
Honors Talks (30 minutes) Seniors Talks (20 minutes) plus 10 minutes for questions.  
**Thursday, May 2 NOON** Final presentations must be complete  
Sign-up Sheet is located in Elle Wilkinson's office Room 123C.
- **MAY 3 by 11:00 am (Fri) Deadline** for reporting level of Honors YOU MUST take a **copy** of the thesis cover sheet signed by all the committee members to the Charles Center.
- **MAY 8 12:00 noon Wed before commencement**  
All students must provide their final copies of theses.  
**Honor Theses** must provide **2 hard copies (Single Sided)** and **Seniors Theses** provide **1 hard copy (Double Sided)**. Please see Ellie Wilkison in Small Hall 123 if you want to use the department's printer to print your thesis. Electronic copies of all theses (a single PDF file) must be emailed to Ellie Wilkison ([evwilk@wm.edu](mailto:evwilk@wm.edu)). Note – Honors Theses will receive one complimentary copy of their thesis bounded. All seniors can request a hard copy for \$30.00. Your thesis hardbound copy will be mailed to you in July/August timeframe.
- **May 10 (Fri before commencement) HONORS THESES** - Students **must** submit electronic copies (commonly called ETDs) to W&M Libraries' online scholarship platform, W&M Publish. All spring-fall Honors students are required to upload the final version of their thesis to W&M Publish by 5:00 p.m. on Friday before commencement. To see full instructions please go to <http://publish.wm.edu/honorstheses/guidelines.html>