



Thesis Overview

Below is an overview of the basic timeline that physics majors intending to pursue a senior thesis should follow.

FRESHMAN & SOPHOMORE YEARS	A thesis is a rewarding experience and your opportunity to do cutting edge science, which can take a lot of time. You should plan to 1) already be involved in research by your junior year, and 2) plan your schedule to leave large blocks of time for your thesis research
JUNIOR YEAR FALL SEMESTER	Students intending on pursuing a senior thesis should ideally already be working in the research group in which they intend to write a senior thesis
JUNIOR YEAR SPRING SEMESTER	<ul style="list-style-type: none"> • Students ask their research advisors if they will supervise senior thesis • After obtaining faculty permission, students submit a thesis proposal by APRIL 15 • DUS approves thesis proposals, in consultation with faculty advisors
SUMMER	Students working on a senior thesis are encouraged to consider staying over the summer to work on their thesis research (dependent on funding)
SENIOR YEAR FALL SEMESTER	<ul style="list-style-type: none"> • Students enroll in <i>PHYS 4498 : Senior Thesis I</i> (3 credits) • At the end of the semester, students submit 1 pg update to their advisor & DUS • All students participate in a poster session and/or short presentations based on their current thesis research at the end of the fall semester
SENIOR YEAR SPRING SEMESTER	<ul style="list-style-type: none"> • Given completion of the requirements in the Fall, and satisfactory performance in Fall <i>PHYS 4498</i>, students will then enroll in <i>PHYS 4499 : Senior Thesis II</i> (3 credits) • Students give a 15 minute “thesis defense” attended by other majors, faculty, and DUS in early May • Students submit their written thesis to the DUS and faculty advisor by MAY 12

First Steps towards the Senior Thesis

- Students should already be working for faculty in their junior year to be considered as strong candidates for a senior thesis
- Students & faculty advisor must mutually agree upon a thesis topic before students submit a senior thesis proposal. Faculty are under **no obligation** to supervise a senior thesis
- Students submit a one page thesis proposal online to the DUS by **April 15** of their junior year
- All physics majors (inside or outside concentrators) can pursue a senior thesis. Any physics faculty (and members of the field of Physics) can supervise a senior thesis. Students pursuing research outside the physics department can pursue a senior thesis, provided the thesis topic is related to physics. The DUS will determine whether thesis topics supervised by faculty outside the physics faculty are appropriate for a senior thesis.
- After reviewing the thesis proposal, student’s GPA, and any recommendations from the student’s potential thesis advisor & faculty advisor, the DUS will approve students to register for *PHYS 4498 : Senior Thesis I*. Students will then enroll in *PHYS 4498* in the fall semester of their senior year and *PHYS 4499 : Senior Thesis II* in the spring semester.



Eligibility To Pursue Senior Thesis

- Students should have a minimum of a 3.3 GPA in order to pursue the senior thesis
- Students should have completed **all of their Core Requirements** by the beginning of the senior year (exceptions made for students having only one Core Requirement remaining)
- Students should fill out their senior thesis proposal by **April 15** of their junior year, with the written permission of their faculty major advisor & thesis advisor. All thesis proposals are ultimately decided by the DUS.
- Students should already be actively engaged in research leading towards their senior thesis by the spring of their junior year
- Students should be pursuing thesis research either within the physics department, or if outside the physics department, that is physics-related (at the discretion of the DUS)

PHYS 4498 : Senior Year, Fall

- During the semester, students will conduct their thesis research wholly under the supervision of their thesis advisor, in a manner similar to regular independent study / research (4490).
- Near the end of the semester, **students must submit a 1 page written status report** on their thesis research, signed off by their thesis advisor, and to be submitted to the DUS for review.
- At the end of the semester, **students will also give short presentations (10 minutes) or a poster session**, attended by other thesis students, to provide an update on the status of their thesis research
- At the end of the fall semester, a grade of "R" is given. That grade of "R" is replaced with the grade for PHYS 4499 when 4499 is also completed.

PHYS 4499 : Senior Year, Spring

- **Enrollment for the spring semester of PHYS 4499 is contingent on completion of the 1 page report, participation in the presentation / poster session, and strong performance (A- or higher) during the Fall semester of PHYS 4498.**
- During the semester, students will conduct their thesis research wholly under the supervision of their thesis advisor, in a manner similar to regular independent study / research.
- Sometime in early May, students will present a 15 minute "thesis defense" to other thesis students, faculty, DUS, and any other interested parties.
- Students will submit their written thesis, approved by their thesis advisor, to the DUS by **May 12**.



Completion of Senior Thesis

- The written thesis should be a minimum of 25 pages (not counting Abstract, TOC, Acknowledgements, Bibliography, or Appendices).
- The thesis should be written and formatted following the Cornell Thesis and Dissertation Guidelines (https://test-graduate-school.pantheonsite.io/wp-content/uploads/2018/05/Thesis-and-Dissertation-Guidebook_sp2018.pdf), preferably in LaTeX
- With approval of the student & advisor, PDFs of the completed theses will be archived and/or posted.
- If the student's research work towards a senior thesis has resulted in a peer-reviewed publication where the student was the lead author, it is acceptable to substitute that publication, together with a brief introduction section, as the written senior thesis (the 25 page minimum is waived). The thesis itself should still be formatted following the Cornell Thesis and Dissertation Guidelines.
- The senior thesis will be considered complete when 1) the oral "thesis defense" is completed, 2) the written thesis is turned in, and 3) at least 6 credits of *PHYS 4498 + PHYS 4499* are completed.
- Final grades for *PHYS 4499* will be assigned by the DUS, in consultation with the thesis advisor.

Additional Notes

- **A maximum total of 4 credits from all research-related classes** (*PHYS 4490 : Independent Study* OR *PHYS 4498 / 4499 : Senior Thesis*) can be used towards the inside or outside concentration. For instance, if a student has already used 4 credits of *PHYS 4490* towards his/her concentration, they may not also use *PHYS 4498/4499* credits towards their concentration.
- While enrolled in *PHYS 4498/9*, students are not permitted to also be performing that work for pay.
- The senior thesis will be factored into the determination of Latin honors at graduation. The thesis will not be the sole determining factor (students graduating without a thesis can graduate with high honors), but it will be factored in to some extent.