

Physics 495: Thesis

Professor: Brad Antanaitis

Fall 2017

Description:

- Thesis is an opportunity for highly motivated students to pursue independent, in-depth research into a physics topic in which they have great interest. It may evolve from, and extend, work performed as an EXCEL Scholar, or it may be a self-contained project. The student will conduct reading from the professional literature to determine what related work has been done elsewhere in the past and to learn the context into which the project fits. If the thesis is experimental in nature, data will be collected using appropriate apparatus or from external sources made available by the research mentor. If it is theoretical, the necessary mathematics and computer programming will be worked out. Detailed analysis will be performed, and the results will be written up in the style of the professional journals.
- The student work in this course is in full compliance with the federal definition of a four credit hour course. Please see the [Registrar's Office web site](#) for the full policy and practice statement.

Learning outcomes. Upon completion of this course, each student should:

- Display a deep understanding of the physics involved;
- Be able to conduct independent research under the supervision of an expert;
- Be able to explain the context in which the research was conducted;
- Be able to explain in writing the methods employed and the results obtained;
- Be able to present the background, methods and results to an audience of physics faculty and students.

Prerequisites:

- You must meet the GPA requirements established by the Faculty of Lafayette College. Appropriate coursework in physics, as determined by your mentor, must have been completed.

Requirements:

- By the end of the first semester of thesis, the bulk of the data collection and preliminary analysis should be complete. Background reading sufficient to

write a 10-15 page introduction to the project must have been done, and that introduction must be written and deemed satisfactory by your mentor. A 15-30 minute presentation, stating the context of the project, the methods being used, and the status of the work at the end of the first semester, must be given to the Physics Club with the Physics Faculty in attendance. To continue the work in a second semester, you must have earned a grade of A from your advisor for the work described above.

Academic Honesty:

- The fabric of science, and indeed any intellectual endeavor, is built on the integrity of all involved. Accordingly, I take academic honesty very seriously. I expect that you will abide by the "Principles of Intellectual Honesty" appearing in the Lafayette College Student Handbook.

This page is maintained by [Lyle Hoffman](#)