

Physics Capstone Westminster College

Contact Information

Instructor: Doug Armstead
Office: 124 Hoyt (724) 946-7201
Official Office Hours: MWF 10-11am.
Email: armstedn@westminster.edu

The Point of this Class

In Physics 601 your goal is to develop a project capstone, begin work on it and complete enough to present your plan, motivation, and preliminary results to the physics department. In Physics 602 you will finish your experimentation, write a thesis style document, and present your results both in poster form and in an oral presentation.

There are a number of mile stones that you must reach during the year to demonstrate appropriate progress toward completing your project. They are identified below.

Capstone class is also a forum to bring in questions pertaining to your preparation for your time after leaving Westminster College. This might include questions related to applying to graduate school, preparing for the physics GRE, strategies for searching for employment.

Grades

Your grade for the spring portion of the course is based on:

- Continued good progress on your project.
- Presentation at the spring undergraduate research symposium or the March APS meeting in Baltimore.
- Well written thesis style document (see Capstone Paper below) that presents your capstone project.

- A completed, well maintained laboratory notebook.
- Your Capstone presentation (see below).

Capstone Paper

Your capstone paper is a document with the following distinct parts

Title Page: Should include your title, name, advisor, and date.

Abstract: A single paragraph description of your project and major results.

Introduction: Your introduction will provide the motivation for your project, the context in the academic literature for your project, and a brief overview of your project.

Theory: A primer on the theory that underpins your project.

Procedure: Detailed description of what you did and how you did it.

Results: Should be presented as figures, tables, etc.. All figures must have a caption.

Discussion: A comparison with the theoretical predictions, and some of the implications of your work.

Conclusions: A discussion of the bigger implications of your project and recommendations for further work to be done.

References: Plagiarism is not acceptable.

Capstone Presentation

Your Capstone presentation is a clear and professional talk to physics faculty and majors that expresses the motivation for your project, what that project is, the key results from the project and the implications of those results. It will require either the use of transparencies or presentation software (e.g. Keynote or Powerpoint). You should be prepared to answer detailed questions about your project during this presentation. It is important that you practice this talk before you give it.

Schedule and Deadlines

Month	Topic
February	First draft of first Chapter due February 1. Final data should be collected this month.
March	First draft of entire paper due March 11.
April	Final paper due April 12.(paper copies to advisor and capstone professor, electronic copies to all physics professors)
May	Capstone presentation and defense May 2.