

**SENIOR PROJECT**

- Description:** Capstone experience in physics.
- Goal:** Synthesize and apply conceptual understanding and practical knowledge gained from coursework to complete a semester-long research project.
- Eligibility:** Physics majors are required to complete a Senior Project in their final year. Students are strongly encouraged to discuss research interests and potential projects with faculty members at any time during their studies, but must select a supervisor and identify a general research topic by the end of the semester prior to commencing their project. The supervisor must be a tenured or tenure-track faculty member in the NDSU Department of Physics. *Exceptions require approval by the capstone committee.*
- Project:** Projects should consist of a methodical investigation to establish new knowledge in physics, for example, by proving (or disproving) a scientific hypothesis or by providing an answer to a specific question. *The research must be original but does not have to be publishable.* Core parts of the research, such as experiments, computer simulations, or derivations should not be outsourced but must be conducted by the student. Ineligible projects include, but are not restricted to: literature reviews, solely reproducing previously published results.
- Work Load:** Students must begin work on the project at the start of semester and are expected to spend  $\sim 12$  hours/week, including meetings with the supervisor.
- Proposal:** By 5 pm Dec. 14, 2016 students must submit to the Physics Department office a short proposal (3 pages or less), including (1) the name of the faculty supervisor, (2) a tentative title, and (3) a brief description, including motivation, objectives, methods, and a plan/timeline.  
*All proposals will undergo review and must be approved by the committee.*  
**Selection of a feasible project is a key to success.**
- Schedule:** The following reports/presentations are required:
1. Midterm oral report (after eight weeks): 20-min presentation and questioning by committee.
  2. Draft of written report (must be submitted prior to final oral report).
  3. Final oral report (at the end of the semester): 30-min presentation and examination by committee.
  4. Final written report (due after oral report): a revision, incorporating feedback from the draft of the written report and from the oral report.

**Schedule  
(cont.):**

The due dates can be extended only under exceptional circumstances. Missing a deadline could lead to a reduction of the final grade. Written reports must follow the AIP style manual format: <http://www.aip.org/pubservs/style/4thed/toc.html>.

**Grading:**

A faculty committee oversees Physics 489 and assigns final grades. The grading scheme is A: 90-100%, B: 75-89.9%, C: 60-74.9%, D: 50-59.9%, F: < 50%

Grades are based on quality of the project proposal (5%), the midterm oral report (5%), the final oral report (30%), and the final written report (60%). All reports and presentations must be on a technical level that is understandable by someone with a general physics background, e.g., comparable to a Scientific American article.

**Additional**

**Statements:** *1. Veterans and student service members with special circumstances or who are activated are encouraged to notify the instructor as soon as possible and are encouraged to provide Activation Orders. 2. Any students with disabilities or other special needs, who need special accommodations in this course are invited to share these concerns or requests with the instructor and contact the Disability Services Office as soon as possible ([ndsu.edu/disabilityservices](http://ndsu.edu/disabilityservices)). 3. The academic community is operated on the basis of honesty, integrity, and fair play. NDSU Policy 335: Code of Academic Responsibility and Conduct applies to cases in which cheating, plagiarism, or other academic misconduct have occurred in an instructional context. Students found guilty of academic misconduct are subject to penalties, up to and possibly including suspension and/or expulsion. Student academic misconduct records are maintained by the Office of Registration and Records. Informational resources about academic honesty for students and instructional staff members can be found at [www.ndsu.edu/academichonesty](http://www.ndsu.edu/academichonesty).*