Every student completes a culminating undergraduate experience during his/her senior year by conducting a comprehensive project. Each project is carried out in one semester under the supervision of a faculty member of the Physics Department in one of the following topics:

- Theoretical and experimental solid state physics
- Materials physics and nanoscience
- Theoretical condensed matter physics
- Theoretical nuclear physics
- Mathematical and computational physics
- Theoretical high energy physics
- Experimental nuclear physics
- Atomic and molecular physics
- Medical physics
- Environmental physics
- Synchrotron radiation
- Any other topic agreed upon by the student and the advisor.

The project is culminated in a project thesis and a formal presentation in front of panel comprised of the advisor and some faculty members at the end of the semester.

**Learning Outcomes:**

After successfully completing this course, the student will be able to:

(a) Demonstrate acquired depth of knowledge about foundational physics concepts and principles.
(b) Have an opportunity to apply his/her academic experience to physics related problems.
(c) Use a variety of instrumentation and measurement techniques.
(d) Use computer software and computer-interfaced equipment to collect and analyze data.
(e) Use statistics and curve-fitting to analyze experimental data.
(f) Gain hands-on experience necessary for the senior student’s transition to professional status upon graduation.

(g) Develop a knowledge of contemporary issues and a recognition of the need for engaging in a life-long learning.

(h) Use academic research engines to find scientific literature.

(i) Write scientific reports and thesis with proper use and formatting of equations, plots, and diagrams.

(j) Deliver an oral presentation of scientific work and communicate effectively.

(k) Develop an understanding of professional and ethical responsibility.