PHYSICS 805 – SPECIAL TOPICS IN PHYSICS
1-3 credits.

Special topics in physics at the graduate level.
Requisites: Graduate/professional standing
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: Yes, unlimited number of completions
Last Taught: Spring 2026

PHYSICS 831 – ADVANCED QUANTUM MECHANICS
3 credits.

Quantum theory of free and interacting fields, formal scattering theory, dispersion theory.
Requisites: Graduate/professional standing
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Fall 2025

PHYSICS 832 – ADVANCED QUANTUM MECHANICS
3 credits.

Continuation of PHYSICS 831. Quantum theory of free and interacting fields, formal scattering theory, dispersion theory.
Requisites: Graduate/professional standing
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Spring 2026

PHYSICS 835 – COLLIDER PHYSICS PHENOMENOLOGY
2-3 credits.

Standard model. Application to e+e-, proton-antiproton, pp, and ep colliders. Jets. Weak boson, heavy-quark, and Higgs boson production and decay. Quarkonia. Neutral B meson mixing. Grand unification. Supersymmetry.
Requisites: Graduate/professional standing
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: Yes, unlimited number of completions
Last Taught: Spring 2021

PHYSICS/E C E 848 – NONLINEAR WAVES
3 credits.

General considerations of nonlinear wave phenomena; nonlinear hyperbolic waves; nonlinear dispersion; nonlinear geometrical optics; Whitham's variational theory; nonlinear and parametric instabilities; solitary waves; inverse scattering method. Knowledge of electromagnetics [such as E C E 320 or PHYSICS 321] or mechanics [such as M E 340] encouraged.
Requisites: Graduate/professional standing
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Spring 2019

PHYSICS 900 – COLLOQUIUM
0-1 credits.

Lectures by staff and visitors.
Requisites: Graduate/professional standing
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: Yes, unlimited number of completions
Last Taught: Spring 2026

PHYSICS/ASTRON 910 – SEMINAR IN ASTROPHYSICS
0-1 credits.

Current topics in astrophysics.
Requisites: Graduate/professional standing
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: Yes, unlimited number of completions
Last Taught: Spring 2026

PHYSICS/E C E/N E 922 – SEMINAR IN PLASMA PHYSICS
0-1 credits.

Current topics in plasma physics.
Requisites: Graduate/professional standing
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: Yes, unlimited number of completions
Last Taught: Spring 2026

PHYSICS 990 – RESEARCH
1-12 credits.

Research supervised by individual faculty members.
Requisites: Graduate/professional standing
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: Yes, unlimited number of completions
Last Taught: Spring 2026
Learning Outcomes: 1. Evaluates or synthesizes information pertaining to questions or challenges in physics.
Audience: Graduate

2. Engages appropriately and communicates clearly with other research professionals in physics.
Audience: Graduate

3. Formulates and plans original research.
Audience: Graduate

4. Creates research, scholarship, or performance that makes a substantive contribution to the field of physics.
Audience: Graduate