Course home page:

https://www.physics.purdue.edu/fermion/courses.html

Syllabus for E&M II

Physics 631 at Purdue University

Before I came here I was confused about this subject. Having listened to your lecture I am still confused. But on a higher level.

by Enrico Fermi

Instructor: *Chris Greene,* PHYS 280

X6-1859, chgreene___at___purdue.edu

Class lectures: Mondays and Wednesdays at 9 am in PHYS 234

Grading rubric: Grades will be based on homework scores only. *You are not allowed to use A.I. resources or internet searches to assist in solving the homework problems*. If you get stuck or have trouble seeing how to solve problems, please ask me and I will give some suggestions liberally.

Office Hours: 1:30 pm, Tuesdays and Thursdays, or informally, or by appointment; also feel free to email me at any time with questions

Grader: to be announced

Required Text: J. D. Jackson, **Electrodynamics**, 3rd Edition

Recommended computational software: **Mathematica**

Tentative list of topics for the Spring 2026 semester:

Dispersion and the Kramers-Kronig Relations
Electromagnetic waves in waveguides and cavities
Radiation generated by oscillating charges and currents
Scattering and diffraction of electromagnetic waves, Rayleigh scattering
Special theory of relativity
The Thomas precession effect
Relativistic Lagrangian dynamics of particles and fields
Radiation by charged particles
Energy loss of charged particles, Cherenkov radiation, etc. (time permitting)
Radiation reaction and radiative damping