

PHYB21H

Electricity and Magnetism



COURSE DESCRIPTION:

A first course at the intermediate level in electricity and magnetism. The course provides an in-depth study of electrostatics and magnetostatics. Topics examined include Coulomb's Law, Gauss's Law, electrostatic energy, conductors, Ampere's Law, magnetostatic energy, Lorentz Force, Faraday's Law and Maxwell's equations.

LECTURES:

Mondays 1110-1200 in BV363, Thursdays from 1010-1100 in room BV264.

TUTORIALS:

Tutorials are 50 minutes in duration, and will be held every Friday starting at 1010 from Week 1 of the Winter term. Tutorials will be held in room BV363.

Tutorial attendance is expected. In addition to problem solving examples that will support the lecture material, tutorials will feature quizzes that contribute to the final grade.

TEXTBOOK: D. J. Griffiths, Introduction to Electrodynamics, 3rd or 4th edition (Prentice Hall).

References:

Edward M. Purcell, Electricity and Magnetism, Second Edition (McGraw-Hill) (different approach than Griffiths);

H.M. Schey, Div, Grad, Curl and All That, (Norton) (covers vector calculus in the context of electromagnetism);

M.R. Spiegel, Schaum's Outline Series Theory and Problems of Advanced Calculus, (McGraw-Hill).

E-Mail:

The final exam will cover all material.

