14/07/2019

Electromagnetism and Relativity Theory

86-234-01

Lecturer: Prof. Mordechai Deutsch
Course type: Lecture + Practice

Date: 2019-2020 **semester:** B **weekly hours:** 3L + 1P

Aim of the course:

This course is intended to provide an introduction to the theory and application of classical electrodynamics at the advanced undergraduate level.

Details of subjects to be covered:

Electrostatics, Magnetostatics, Maxwell's equations and its applications in electrostatics, electrodynamics, electromagnetic waves and radiation. Transmission lines, and if time permits: relativity and/or fluorescence.

Prerequisites:

First and second year courses

Course mandatories:

Three tests based on exercises during the course and a single overall exam at the end.

Grading:

Three tests based on questions from exercises (closed material) (30%).
One exam, 3 hours, (70%), 3 out of 4 questions should be solved (open notes).

Bibliography:
(textbooks)

1. "Engineering Electromagnetics" Umran & Aziz S. Inan
2. "Introduction to Electrodynamics" David J. Griffiths
3. "Classical Electrodynamics" (Third Edition) J. D. Jackson
4. "Electricity & Magnetism" Berkley
5. "Classical Theory of Fields" (Third Edition) L. D. Landau, and E. M. Lifshitz.