

MASE 502 – Electrical and Optical Properties of Materials

Semester: Fall 2006
Instructor: Alper Kiraz
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Office Hours: Tu, B5 15:30 – 16:45 or by appointment
Lecture Hours: Tu, Th B2 – 11:00 – 12:15
Room: Eng. B18

Course Description: Electronic conduction in semiconducting materials, band theory, mobility and conductivity, semiconductor devices, dielectric properties of solids, diamagnetism, paramagnetism, ferromagnetism, ferrimagnetism, superconducting materials, interaction of light with matter, dispersion, refraction, absorption.

Textbook: Principles of Electronic Materials and Devices, Second Edition, Safa O. Kasap, 2001 McGraw-Hill. ISBN: 0-07-245636-1

Grading: Project 20 %
Homework 20 %
Quizzes 30 %
Final 30 % (to be announced)

Lecture Schedule:

| Week | | Subject |
|------|---------|------------------------------------|
| 9 | Nov. 20 | Semiconductors (Ch. 5) |
| 10 | Nov. 27 | Semiconductor Devices (Ch. 6) |
| 11 | Dec. 4 | Dielectric Materials (Ch. 7) |
| 12 | Dec. 11 | Dielectric Materials cont. (Ch. 7) |
| 13 | Dec. 18 | Magnetic Materials(Ch. 8) |
| 14 | Dec. 25 | Optical Properties (Ch.9) |