

Electromagnetic Theory I (Spring 2007)

Physics 913

Tuesdays and Thursdays, 2:00-3:15

Brace 202

Instructor: Evgeny Tsymbal

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Hours: after class or by appointment

Classes begin	9 January
Spring Vacation	11 - 18 March
Last day of classes	26 April

Homework:

Homework will be placed on the web page. Normally homework is due in a week from the day of assignment.

Exams:

Midterm Exam 1 (in class, open book, 1 hour 15min)	22 February, 2-3:15pm, 202 Brace
Midterm Exam 2 (in class, open book, 1 hour 15min)	29 March, 2-3:15pm, 202 Brace
Final Exam (in class, open book, 2 hours)	30 April, 1-3pm, 118 Brace

Grading:

Homework	40%
Midterm Exams	15% each
Final Exam	30%

Final grade:

A+	A	A-	B+	B	B-	C+	C	C-	D	F
93%	85%	80%	75%	70%	65%	60%	55%	50%	35%	<35%

Course outline

1. Electrostatics

Coulomb's law, Gauss's law, Scalar potential; Poisson and Laplace equations; Green's theorem; Green's function; Electrostatic energy, Capacitance; Method of images; Solutions of the Laplace equation; Boundary value problems; Multiple expansion, Electrostatics of dielectrics; Polarization.

2. Magnetostatics

Biot and Savart law; Ampere's law; Vector potential; Fields from a localized current distribution; Magnetic moment; Magnetic fields in matter; Magnetization; Boundary-value problems in magnetostatics; Scalar potential.

Text: J. D. Jackson, *Classical Electrodynamics* (Third Edition)

Reference: D. J. Griffiths, *Introduction to Electrodynamics*