

Final Exam: Tuesday, May 11 at 7 pm

Distribution of topics

About 1/3 – 1/5 on 1st half of semester

About 2/3 – 4/5 on 2nd half of semester

Electrostatics

Method of Images

Separation of variables, cartesian sym.

→ Orthogonality relation

Separation of variable, spherical sym.

→ Legendre polynomials

→ Orthogonality relation

Multipole expansion

Dipole moment

→ Forces on dipoles

Polarizability of matter & dielectrics

Bound charges (surface & volume)

Electric displacement D

Linear dielectrics

capacitors

Magnetostatics

Lorentz force law

Cyclotron motion

No magnetic work

Biot-Savart law

Ampere's law (and $\text{div } B = 0$)

→ Solenoid, toroid, surface current

Vector potential

Multipole expansion

Dipole moment

→ Forces on dipoles

Magnetization of matter

Bound currents (surface & volume)

Auxiliary Field H

Linear magnetization