

# Midterm: *Wednesday, March 8*

Vector calculus

Divergence, gradient, curl, Laplacian

Integral theorems (divergence, Stokes)

Divergence of  $1/r^2$

Delta function

Cartesian, spherical, cylindrical coordinates

Helmholtz theorem

Coulomb's law, electric fields

Point charges

Continuous charge distributions

Gauss's law

Electric field of a plane of charge

Electric potential

Poisson's equation & Laplace's equation

Electrostatic energy

Conductors, shielding

Capacitors

Uniqueness theorem

Method images

→ grounded plane

→ homework problems for  
inspiration

Separation of variables

→ Cartesian symmetry method

NOTE: in-class midterm