Physics 272
General Physics II

Instructor: Jason Kumar
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Class meets:
T Th 9:00am -10:15am -- WAT 112
Office Hours: T Th 10:30am – 11:30am – WAT 436

Required Textbook:
University Physics Volumes 2 and 3, OpenStax

Topics to be covered:

Electric Charge, Electric Forces, Electric Fields, Electric Dipoles and Coulomb's Law (Vol. 2, Ch. 5)

Electric Flux, Gauss' Law and its Applications, Symmetry (Vol. 2, Ch. 6)

Electric potential and potential energy, and applications (Vol. 2, Ch. 7)

Capacitance, Capacitors in Circuits, Dielectrics (Vol. 2, Ch. 8)

Current, Resistance, Electromotive Force, Energy and Power in Circuits (Vol. 2, Ch. 9)

Direct Current Circuit Analysis and Applications, Kirchhoff's Rules (Vol. 2, Ch. 10)

Magnetic Fields and Forces, Applications (Vol. 2, Ch. 11)

Biot-Savart Law, Ampere's Law, Applications, Magnetism in Materials (Vol. 2, Ch. 12)

Faraday's Law, Lenz's Law, Maxwell's Equations, Applications (Vol. 2, Ch. 13)

Inductance, Energy in a Magnetic Field, RL-LC-LRC Circuits (Vol. 2, Ch. 14)

Alternating Currents, Phasors, Driven LRC Circuits, Applications (Vol. 2, Ch. 15)

Electromagnetic Waves, Poynting Vector (Vol. 2, Ch. 16)

Nature and Propagation of Light, Reflection (Vol. 3, Ch. 1)

Geometric Optics (Vol. 3, Ch. 2)

Student Learning Outcomes:

1) An introductory conceptual understanding of the phenomena of electricity and magnetism

2) An introductory ability to solve quantitative problems in electricity and magnetism

Grading:

The course grade will be based on homework and exams

~10% -- recitation
~10% -- homework
~10% -- iClicker,
~70% -- Midterm 1 (20%), Midterm 2 (20%), Final (30%)

The grading scheme will be roughly as follows:

A+	~> 95%
A	~90-94%
A-	~85-89%
B+	~80-84%
B	~75-79%
B-	~70-74%
C+	~65-69%
C	~60-64%
C-	~55-59%
D+	~50-54%
D	~45-49%
D-	~40-44%
F	~<40%

The grading scheme may be modified slightly, based on performance.