Physics 222 Syllabus, spring 2016, barry.Stoner@cox.net, 860-647-9503

Jan 25: Phases of matter, mechanics of matter, simple harmonic motion
Lab: Exploring simple harmonic motion using a mass/spring system
Feb 1: Mechanical wave characteristics and behavior, fluid mechanics
Lab: Studying standing waves using a string under tension
Feb 8: Sound waves, loudness and intensity, Mach number
Lab: Determining speed of sound in air using standing waves
Feb 15: President's Day - no class
Feb 22: FIRST EXAM: Temperature, thermal expansion and the ideal gas law
Lab: Determining thermal coefficients of expansion
Feb 29: Kinetic theory gases, calorimetry, specific heat, latent heat, PV diagrams
Lab: Determining the specific heat of solids using calorimetry
Mar 7: First Law of Thermodynamics, calculating work for various processes
Lab: Determining Latent heat of vaporization for water
Mar 14: Second Law of Thermodynamics, heat engines, reversible processes
Lab: Determining latent heat of fusion for water
Mar 21: Spring break - no class
Mar 28: SECOND EXAM: Electric charge and electric fields
Lab: Plotting electric field lines and lines of potential
Apr 4: Electric potential, resistance, Ohm's Law, DC current
Lab: Using Ohm's Law & multimeter to determine voltage and resistance
Apr 11: Capacitance, energy storage, electric power, AC current
Lab: Evaluating a resistive / capacitive DC circuit
Apr 18: DC circuits and Kirchhoff's Rules
Lab: Applying Kirchhoff's Rules by analysis and measurement
Apr 25: THIRD EXAM: Magnetism, magnetic fields and the DC motor
Lab: Exploring magnetic fields using the magnetic field balance
May 2: Electromagnetic inductance, Faraday's Law, AC circuits
Lab: Explore Inductive, Resistive, Capacitive AC circuits vs frequency
May 9: EM oscillations and electromagnetic waves, Maxwell's Laws
Lab: Determining wavelength of light using Young's experiment
May 16: FINAL EXAM

Course grading will be based 75% on exams with 25% based on laboratory reports and any other assigned work asked to be turned in for grading.

Missing class or missing exams without notifying the instructor (me) will not be tolerated; should you not comply, a make up exam will not be offered - my number is 860-647-9503, leave a message should I not be available when you call.

Text is Physics for Scientists & Engineers by D. Giancoli