

Physics 222 Syllabus, spring 2017, Barry.Stoner@cox.net, 860-647-9503

NOTE: Bring your text (Giancoli edition 4) to each class!

Jan 23: Wave Definitions, Simple Harmonic Motion, Damping and Resonance

Chapters 14 and 15; Lab: Exploring the mass/spring system.

Jan 30: Wave Propagation and Energy Transport, Standing Waves, Superposition

Chapters 15 and 16; Lab: Studying standing waves in string with tension.

Feb 6: Sound, Loudness, Intensity, Interference, Beats, Doppler Effect

Chapter 16; Lab Determining Speed of Sound in Air using standing waves.

Feb 13: Fluid Mechanics (static and dynamic) Temperature, Gas Laws, Thermal

Expansion, Kinetic Theory of Gases

Chapters 13, 17, 18; Lab: Determining thermal expansion coefficients.

Feb 20: President's Day, no class; however, Take Home Exam 1 due February 27.

Feb 27: Phases of Matter, Vapor Pressure/Humidity, Calorimetry, Thermodynamics

Chapters 18, 19; Lab: Determining solid specific heat using calorimetry.

Mar 6: The PV Diagram, Calculating Work, First and Second Laws of Thermo'

Chapters 19,20; Labs: Determining Latent Heats for water.

Mar 13: Spring break, no class; however, Take Home Exam 2 due March 20.

Mar 20: The Concept of Electric Charge and calculating the Electric Field

Chapter 21; Lab: determining electric field and potential lines.

Mar 27: Electric Potential, The Volt, Resistance, Ohm's Law, DC Current

Chapter 23, 25; Lab: Using the multimeter to measure DC quantities.

Apr 3: Capacitance, Energy Storage, Electric Power, AC Current

Chapters 24, 25; Lab: Measuring Current Response in an RC circuit.

Apr 10: More Complex DC Circuits and Kirchhoff's Rules

Chapter 26; Lab: Applying Kirchhoff's Rules measuring DC circuit.

Apr 17: Exam 3 (in class) Magnetism and the Magnetic Field

Chapter 27; No Lab

Apr 24: Sources of the Magnetic Field, Magnetic Inductance and Faraday's Law

Chapters 28, 29; Lab: Exploring the magnetic field using the field balance.

May 1: EM Oscillations, AC Circuits

Chapter 30; Lab: Exploring RLC circuits versus frequency.

May 8: Electromagnetic Waves and Maxwell's Laws

Chapter 31; Lab: Determining the wavelength of light, Young's Experiment

May 15: Final Exam (in class)

Course grading will be based 75% on exam scores and 25% on lab report scores.

Class absenteeism or missing an exam will not be tolerated; more than two absences will result in one grade level reduction; unless, I am notified a priori and/or based on professional documentation. There are no make up laboratory experiments or exams, attend class.

Lab reports are due the week following class; but a two week grace period without penalty will be allowed.