

OUTCOMES BASED LEARNING MATRIX

Course: College Physics II(PHYS152)

Department: Physical Science

Revised: Spring 2010

**At the end of the course,
students will be able to:**

Students will participate in:

Faculty will evaluate:

COURSE OUTCOMES	OUTCOME ACTIVITIES	ASSESSMENT TOOLS
<p>Deformation of Solids and Liquids :</p> <ul style="list-style-type: none"> - define and describe the structure and properties of liquids and solids. - solve deformation problems. 	<ul style="list-style-type: none"> - lectures, discussions and demonstrations. (CT, QS, OC) - reading the textbook, including sample problems. (CT, R, QS) - solving assigned problems. (CT, R, QS) - Young's Modulus Lab. (CT, R, QS, TS) -organizing and documenting information in lab reports. (CT, W, QS) 	<ul style="list-style-type: none"> - Tests with emphasis on solving problems (CT, W, QS, R) - Lab performance (CT, QS, TS, R, OC) - Lab reports (W, QS, CT)
<p>Fluid Mechanics (statics and dynamics):</p> <ul style="list-style-type: none"> .describe and apply fluid mechanic properties. - solve fluid problems using the equations developed for fluid mechanics. 	<ul style="list-style-type: none"> - lectures, discussions and demonstrations. (CT, QS, OC) - reading the textbook, including sample problems. (CT, R, QS) - solving assigned problems. (CT, R, QS) - Archimedes Principle Lab (CT, R, QS, TS) -Bernouilli's Equation Lab (CT, R, QS, TS) - organizing and documenting information in lab reports. (CT, W, QS) 	<ul style="list-style-type: none"> - Tests with emphasis on solving problems (CT, W, QS, R) - Lab performance (CT, QS, TS, R, OC) - Lab reports (W, QS, CT)

<p>Waves and Simple Harmonic Motion: -describe and apply wave properties including: wavelength, frequency, wave velocity, reflection, diffraction, standing waves, resonance, Doppler Effect, and, beats. -describe and apply simple harmonic properties.</p>	<ul style="list-style-type: none"> - lectures, discussions and demonstrations. (CT, QS, OC) - reading the textbook, including sample problems. (CT, R, QS) - solving assigned problems. (CT, R, QS) - Resonance on a String Lab (CT, R, QS, TS) - Speed of Sound Lab (CT, R, QS, TS) 	<ul style="list-style-type: none"> - Tests with emphasis on solving problems (CT, W, QS, R) - Lab performance (CT, QS, TS, R, OC) - Lab reports (W, QS, CT)
<p>Temperature and Heat: -describe and apply the properties of temperature and heat including: temperature scales, calorimetry, and heat transfer.</p>	<ul style="list-style-type: none"> - lectures, discussions and demonstrations. (CT, QS, OC) - reading the textbook, including sample problems. (CT, R, QS) - solving assigned problems. (CT, R, QS) - Specific Heat Lab (CT, R, QS, TS) - Heat of Fusion (CT, R, QS, TS) - organizing and documenting information in lab reports. (CT, W, QS) 	<ul style="list-style-type: none"> - Tests with emphasis on solving problems (CT, W, QS, R) - Lab performance (CT, QS, TS, R, OC) - Lab reports (W, QS, CT)
<p>Kinetic Theory of Gases: -describe and apply the kinetic theory of gases.</p>	<ul style="list-style-type: none"> - lectures, discussions and demonstrations. (CT, QS, OC) - reading the textbook, including sample problems. (CT, R, QS) - solving assigned problems. (CT, R, QS) - Absolute Zero and Ideal Gas Law Lab. (CT, R, QS, TS) - organizing and documenting information in lab reports. (CT, W, QS) 	<ul style="list-style-type: none"> - Tests with emphasis on solving problems (CT, W, QS, R) - Lab performance (CT, QS, TS, R, OC) - Lab reports (W, QS, CT)

<p>Heat Engines and The Laws of Thermodynamics:</p> <ul style="list-style-type: none"> - describe the basic properties of heat engines and heat pumps. - describe and analyze thermodynamic problems using the laws of thermodynamics. 	<ul style="list-style-type: none"> - lectures, discussions and demonstrations. (CT, QS, OC) - reading the textbook, including sample problems. (CT, R, QS) - solving assigned problems. (CT, R, QS) 	<ul style="list-style-type: none"> - Tests with emphasis on solving problems (CT, W, QS, R)
<p>Electric Charges, Forces, and Fields:</p> <ul style="list-style-type: none"> - describe and apply properties of electric charges, forces, and fields . 	<ul style="list-style-type: none"> - lectures, discussions and demonstrations. (CT, QS, OC) - reading the textbook, including sample problems. (CT, R, QS) - solving assigned problems. (CT, R, QS) 	<ul style="list-style-type: none"> - Tests with emphasis on solving problems (CT, W, QS, R)
<p>Electric Potential and Potential Energy:</p> <ul style="list-style-type: none"> - describe and apply electric potential and potential energy to the concepts of voltage, and capacitance 	<ul style="list-style-type: none"> - lectures, discussions, and demonstrations. (CT, QS, OC) - reading the textbook, including sample problems. (CT, R, QS) - solving assigned problems. (CT, R, QS) - Capacitor Demo. Lab (CT, R, QS, TS) - organizing and documenting information in lab reports. (CT, W, QS) 	<ul style="list-style-type: none"> - Tests with emphasis on solving problems (CT, W, QS, R) - Lab performance (CT, QS, TS, R, OC) - Lab reports (W, QS, CT)
<p>Electric Current and DC and AC Circuits:</p> <ul style="list-style-type: none"> - describe and apply Ohm's Law and the power equation to simple DC and AC circuits. 	<ul style="list-style-type: none"> - lectures, discussions and demonstrations. (CT, QS, OC) - reading the textbook, including sample problems. (CT, R, QS) - solving assigned problems. (CT, R, QS) - DC circuit Demo. Lab. (CT, R, QS, TS) -organizing and documenting info in lab reports.(CT, W, QS) 	<ul style="list-style-type: none"> - Tests with emphasis on solving problems (CT, W, QS, R) - Lab performance (CT, QS, TS, R, OC) - Lab reports (W, QS, CT)

<p>Magnetism:</p> <p>-Describe and apply the properties of magnetism including: magnetic forces and fields, sources of magnetism, ferromagnetism, magnetic torque, and law's of induction</p> <p>.</p>	<ul style="list-style-type: none"> - lectures, discussions and demonstrations. (CT, QS, OC) - reading the textbook, including sample problems. (CT, R, QS) - solving assigned problems. (CT, R, QS) - e/m. Lab. (CT, R, QS, TS) -magnetic induction demo. (CT, R, QS, TS) -organizing and documenting information in lab reports. (CT, W, QS) 	<ul style="list-style-type: none"> - Tests with emphasis on solving problems (CT, W, QS, R) - Lab performance (CT, QS, TS, R, OC) - Lab reports (W, QS, CT)
<p>Electromagnetic Waves:</p> <p>.describe and apply electromagnetic wave properties as they relate to light, reflection, refraction dispersion, polarization, diffraction, thin lenses.</p>	<ul style="list-style-type: none"> - lectures, discussions and demonstrations. (CT, QS, OC) - reading the textbook, including sample problems. (CT, R, QS) - solving assigned problems. (CT, R, QS) - Spectrometer Demo Lab (CT, R, QS, TS) - Opics Demo Lab (CT, R, QS, TS) - organizing and documenting information in lab reports. (CT, W, QS) 	<ul style="list-style-type: none"> - Tests with emphasis on solving problems (CT, W, QS, R) - Lab performance (CT, QS, TS, R, OC) - Lab reports (W, QS, CT)