

Trigonometry Based Physics II Competencies

	PERFORMANCE/TASK	DELIVERY METHODS	EVALUATION METHODS
1	The student will be able to describe and explain both qualitatively and quantitatively the definitions and relationships of Electromagnetism, Light, and Modern Physics.	Lectures, Demonstrations, Discussions, Practicing Problem Solving, and Doing Lab Experiments	Answers to Questions on Quizzes and Tests, Analysis and Solutions of Test Problems, & Lab Reports
2	The student will be able to use the definitions and relationships of Electromagnetism, Light, and Modern Physics to ask and answer qualitative and quantitative questions, solve problems, and perform experiments.	Lectures, Demonstrations, Discussions, Practicing Problem Solving, and Doing Lab Experiments	Answers to Questions on Quizzes and Tests, Analysis and Solutions of Test Problems, & Lab Reports
3	The student will be able to use the definitions and relationships of Physics and the general problem solving procedure to solve Electromagnetism, Light, and Modern Physics problems.	Lectures, Demonstrations, Discussions, Practicing Problem Solving, and Doing Lab Experiments	Answers to Questions on Quizzes and Tests, Analysis and Solutions of Test Problems, & Lab Reports
4	The student will be able to use the scientific method to evaluate the definitions and relationships of Electromagnetism, Light, and Modern Physics.	Lectures, Demonstrations, Discussions, Practicing Problem Solving, and Doing Lab Experiments	Answers to Questions on Quizzes and Tests, Analysis and Solutions of Test Problems, & Lab Reports
5	The student will be able to state the definitions of the measurements, standards, dimensions and units of Electromagnetism, Light, and Modern Physics.	Lectures, Demonstrations, Discussions, Practicing Problem Solving, and Doing Lab Experiments	Answers to Questions on Quizzes and Tests, Analysis and Solutions of Test Problems, & Lab Reports
6	The student will be able to describe positive and negative electric charge qualitatively and quantitatively and use it to ask and answer questions, solve problems and perform experiments.	Lectures, Demonstrations, Discussions, Practicing Problem Solving, and Doing Lab Experiments	Answers to Questions on Quizzes and Tests, Analysis and Solutions of Test Problems, & Lab Reports
7	The student will be able to describe the properties of electric charge both qualitatively and quantitatively and use them to ask and answer questions, solve problems and perform experiments.	Lectures, Demonstrations, Discussions, Practicing Problem Solving, and Doing	Answers to Questions on Quizzes and Tests, Analysis and Solutions of Test Problems, & Lab

		Lab Experiments	Reports
	The student will be able to define insulator and conductor and use them to ask and answer questions, solve problems and perform experiments.	Lectures, Demonstrations, Discussions, Practicing Problem Solving, and Doing Lab Experiments	Answers to Questions on Quizzes and Tests, Analysis and Solutions of Test Problems, & Lab Reports
8	The student will be able to qualitatively and quantitatively describe and use the first law of electrostatics and Coulomb's law to ask and answer questions, solve problems and perform experiments.	Lectures, Demonstrations, Discussions, Practicing Problem Solving, and Doing Lab Experiments	Answers to Questions on Quizzes and Tests, Analysis and Solutions of Test Problems, & Lab Reports
9	The student will be able to qualitatively and quantitatively define electric field and use it to ask and answer questions, solve problems and perform experiments.	Lectures, Demonstrations, Discussions, Practicing Problem Solving, and Doing Lab Experiments	Answers to Questions on Quizzes and Tests, Analysis and Solutions of Test Problems, & Lab Reports
10	The student will be able to describe electric field lines and draw them to help ask and answer electric field questions, to help solve electric field problems and help perform electric field experiments .	Lectures, Demonstrations, Discussions, Practicing Problem Solving, and Doing Lab Experiments	Answers to Questions on Quizzes and Tests, Analysis and Solutions of Test Problems, & Lab Reports
11	The student will be able to define point charge and be able to qualitatively and quantitatively describe the electric fields produced by distributions of point charges.	Lectures, Demonstrations, Discussions, Practicing Problem Solving, and Doing Lab Experiments	Answers to Questions on Quizzes and Tests, Analysis and Solutions of Test Problems, & Lab Reports
12	The student will be able to define charge density for charge distributed along a line, across a surface, and throughout a volume and be able to find the electric fields produced by such distributions of charge .	Lectures, Demonstrations, Discussions, Practicing Problem Solving, and Doing Lab Experiments	Answers to Questions on Quizzes and Tests, Analysis and Solutions of Test Problems, & Lab Reports
13	The student will be able to qualitatively and quantitatively define electric flux and use it to ask and answer questions, solve problems and perform experiments.	Lectures, Demonstrations, Discussions, Practicing Problem Solving, and Doing Lab Experiments	Answers to Questions on Quizzes and Tests, Analysis and Solutions of Test Problems, & Lab Reports

14	The student will be able to qualitatively and quantitatively describe Gauss' Law and use it to ask and answer questions, solve problems and perform experiments.	Lectures, Demonstrations, Discussions, Practicing Problem Solving, and Doing Lab Experiments	Answers to Questions on Quizzes and Tests, Analysis and Solutions of Test Problems, & Lab Reports
15	The student will be able to qualitatively and quantitatively define electric potential and potential difference and use them to ask and answer questions, solve problems and perform experiments.	Lectures, Demonstrations, Discussions, Practicing Problem Solving, and Doing Lab Experiments	Answers to Questions on Quizzes and Tests, Analysis and Solutions of Test Problems, & Lab Reports
16	The student will be able to qualitatively and quantitatively describe and draw equipotential surfaces and use them to ask and answer questions, solve problems and perform experiments.	Lectures, Demonstrations, Discussions, Practicing Problem Solving, and Doing Lab Experiments	Answers to Questions on Quizzes and Tests, Analysis and Solutions of Test Problems, & Lab Reports
17	The student will be able to qualitatively and quantitatively explain the relationship between electric fields and electric potential and use it to ask and answer questions, solve problems and perform experiments.	Lectures, Demonstrations, Discussions, Practicing Problem Solving, and Doing Lab Experiments	Answers to Questions on Quizzes and Tests, Analysis and Solutions of Test Problems, & Lab Reports
18	The student will be able to qualitatively and quantitatively describe the electric potential due to point charges and continuous charge distributions.	Lectures, Demonstrations, Discussions, Practicing Problem Solving, and Doing Lab Experiments	Answers to Questions on Quizzes and Tests, Analysis and Solutions of Test Problems, & Lab Reports
19	The student will be able to qualitatively and quantitatively define capacitor and capacitance and use them to ask and answer questions, solve problems and perform experiments.	Lectures, Demonstrations, Discussions, Practicing Problem Solving, and Doing Lab Experiments	Answers to Questions on Quizzes and Tests, Analysis and Solutions of Test Problems, & Lab Reports
20	The student will be able to qualitatively and quantitatively describe the energy stored in capacitors and use it to ask and answer questions, solve problems and perform experiments.	Lectures, Demonstrations, Discussions, Practicing Problem Solving, and Doing Lab Experiments	Answers to Questions on Quizzes and Tests, Analysis and Solutions of Test Problems, & Lab Reports
21	The student will be able to qualitatively and quantitatively explain the	Lectures, Demonstrations,	Answers to Questions on Quizzes and Tests,

	relationships for series and parallel connected capacitors and use them to ask and answer questions, solve problems and perform experiments.	Discussions, Practicing Problem Solving, and Doing Lab Experiments	Analysis and Solutions of Test Problems, & Lab Reports
22	The student will be able to qualitatively and quantitatively describe dielectrics and dielectric constant and use them to ask and answer questions, solve problems and perform experiments.	Lectures, Demonstrations, Discussions, Practicing Problem Solving, and Doing Lab Experiments	Answers to Questions on Quizzes and Tests, Analysis and Solutions of Test Problems, & Lab Reports
23	The student will be able to qualitatively and quantitatively define current and use it to ask and answer questions, solve problems and perform experiments.	Lectures, Demonstrations, Discussions, Practicing Problem Solving, and Doing Lab Experiments	Answers to Questions on Quizzes and Tests, Analysis and Solutions of Test Problems, & Lab Reports
24	The student will be able to qualitatively and quantitatively define current density and use it to ask and answer questions, solve problems and perform experiments.	Lectures, Demonstrations, Discussions, Practicing Problem Solving, and Doing Lab Experiments	Answers to Questions on Quizzes and Tests, Analysis and Solutions of Test Problems, & Lab Reports
25	The student will be able to qualitatively and quantitatively define resistance and resistivity and use them to ask and answer questions, solve problems and perform experiments.	Lectures, Demonstrations, Discussions, Practicing Problem Solving, and Doing Lab Experiments	Answers to Questions on Quizzes and Tests, Analysis and Solutions of Test Problems, & Lab Reports
26	The student will be able to qualitatively and quantitatively explain Ohm's Law and use it to ask and answer questions, solve problems and perform experiments.	Lectures, Demonstrations, Discussions, Practicing Problem Solving, and Doing Lab Experiments	Answers to Questions on Quizzes and Tests, Analysis and Solutions of Test Problems, & Lab Reports
27	The student will be able to qualitatively and quantitatively describe electrical power and use it to ask and answer questions, solve problems and perform experiments.	Lectures, Demonstrations, Discussions, Practicing Problem Solving, and Doing Lab Experiments	Answers to Questions on Quizzes and Tests, Analysis and Solutions of Test Problems, & Lab Reports
28	The student will be able to qualitatively describe superconductor and use it to ask and answer questions.	Lectures, Demonstrations, Discussions, Practicing Problem	Answers to Questions on Quizzes and Tests, Analysis and Solutions of Test

		Solving, and Doing Lab Experiments	Problems, & Lab Reports
29	The student will be able to qualitatively and quantitatively define emf and use it to ask and answer questions, solve problems and perform experiments.	Lectures, Demonstrations, Discussions, Practicing Problem Solving, and Doing Lab Experiments	Answers to Questions on Quizzes and Tests, Analysis and Solutions of Test Problems, & Lab Reports
30	The student will be able to qualitatively and quantitatively explain the relationships for both series connected and parallel connected resistors and use them to ask and answer questions, solve problems and perform experiments.	Lectures, Demonstrations, Discussions, Practicing Problem Solving, and Doing Lab Experiments	Answers to Questions on Quizzes and Tests, Analysis and Solutions of Test Problems, & Lab Reports
31	The student will be able to qualitatively and quantitatively describe electrical circuits and ask and answer questions, solve problems and perform experiments with electrical circuits.	Lectures, Demonstrations, Discussions, Practicing Problem Solving, and Doing Lab Experiments	Answers to Questions on Quizzes and Tests, Analysis and Solutions of Test Problems, & Lab Reports
32	The student will be able to qualitatively and quantitatively describe electrical circuits and ask and answer questions, solve problems and perform experiments with electrical circuits.	Lectures, Demonstrations, Discussions, Practicing Problem Solving, and Doing Lab Experiments	Answers to Questions on Quizzes and Tests, Analysis and Solutions of Test Problems, & Lab Reports
33	The student will be able to qualitatively and quantitatively define magnetic field and use it to ask and answer questions, solve problems and perform experiments.	Lectures, Demonstrations, Discussions, Practicing Problem Solving, and Doing Lab Experiments	Answers to Questions on Quizzes and Tests, Analysis and Solutions of Test Problems, & Lab Reports
34	The student will be able to describe magnetic field lines and draw them to help ask and answer magnetic field questions, to help solve magnetic field problems and help perform magnetic field experiments .	Lectures, Demonstrations, Discussions, Practicing Problem Solving, and Doing Lab Experiments	Answers to Questions on Quizzes and Tests, Analysis and Solutions of Test Problems, & Lab Reports
35	The student will be able to qualitatively and quantitatively explain the magnetic force on a moving charge in a magnetic field and use it to ask and answer questions, solve problems and perform experiments.	Lectures, Demonstrations, Discussions, Practicing Problem Solving, and Doing Lab Experiments	Answers to Questions on Quizzes and Tests, Analysis and Solutions of Test Problems, & Lab Reports

36	The student will be able to qualitatively and quantitatively explain the magnetic force on a current carrying conductor in a magnetic field and use it to ask and answer questions, solve problems and perform experiments.	Lectures, Demonstrations, Discussions, Practicing Problem Solving, and Doing Lab Experiments	Answers to Questions on Quizzes and Tests, Analysis and Solutions of Test Problems, & Lab Reports
37	The student will be able to qualitatively and quantitatively explain the magnetic field of a moving charge and use it to ask and answer questions, solve problems and perform experiments.	Lectures, Demonstrations, Discussions, Practicing Problem Solving, and Doing Lab Experiments	Answers to Questions on Quizzes and Tests, Analysis and Solutions of Test Problems, & Lab Reports
38	The student will be able to qualitatively and quantitatively explain the magnetic field of a current and use it to ask and answer questions, solve problems and perform experiments.	Lectures, Demonstrations, Discussions, Practicing Problem Solving, and Doing Lab Experiments	Answers to Questions on Quizzes and Tests, Analysis and Solutions of Test Problems, & Lab Reports
39	The student will be able to qualitatively and quantitatively explain the magnetic forces on two parallel current carrying conductors and use them to ask and answer questions, solve problems and perform experiments.	Lectures, Demonstrations, Discussions, Practicing Problem Solving, and Doing Lab Experiments	Answers to Questions on Quizzes and Tests, Analysis and Solutions of Test Problems, & Lab Reports
40	The student will be able to qualitatively and quantitatively describe Ampere's Law and use it to ask and answer questions, solve problems and perform experiments.	Lectures, Demonstrations, Discussions, Practicing Problem Solving, and Doing Lab Experiments	Answers to Questions on Quizzes and Tests, Analysis and Solutions of Test Problems, & Lab Reports
41	The student will be able to qualitatively and quantitatively define induction and use it to ask and answer questions, solve problems and perform experiments.	Lectures, Demonstrations, Discussions, Practicing Problem Solving, and Doing Lab Experiments	Answers to Questions on Quizzes and Tests, Analysis and Solutions of Test Problems, & Lab Reports
42	The student will be able to qualitatively and quantitatively describe Faraday's Law and use it to ask and answer questions, solve problems and perform experiments.	Lectures, Demonstrations, Discussions, Practicing Problem Solving, and Doing Lab Experiments	Answers to Questions on Quizzes and Tests, Analysis and Solutions of Test Problems, & Lab Reports
43	The student will be able to qualitatively and quantitatively describe Lenz's Law	Lectures, Demonstrations,	Answers to Questions on Quizzes and Tests,

	and use it to ask and answer questions, solve problems and perform experiments.	Discussions, Practicing Problem Solving, and Doing Lab Experiments	Analysis and Solutions of Test Problems, & Lab Reports
44	The student will be able to qualitatively and quantitatively define inductor, self inductance, and mutual inductance and use them to ask and answer questions, solve problems and perform experiments.	Lectures, Demonstrations, Discussions, Practicing Problem Solving, and Doing Lab Experiments	Answers to Questions on Quizzes and Tests, Analysis and Solutions of Test Problems, & Lab Reports
45	The student will be able to qualitatively and quantitatively describe Maxwell's equations and use them to ask and answer questions.	Lectures, Demonstrations, Discussions, Practicing Problem Solving, and Doing Lab Experiments	Answers to Questions on Quizzes and Tests, Analysis and Solutions of Test Problems, & Lab Reports
46	The student will be able to qualitatively and quantitatively define electromagnetic waves and use them to ask and answer questions, solve problems and perform experiments.	Lectures, Demonstrations, Discussions, Practicing Problem Solving, and Doing Lab Experiments	Answers to Questions on Quizzes and Tests, Analysis and Solutions of Test Problems, & Lab Reports
47	The student will be able to qualitatively and quantitatively define light and use it to ask and answer questions, solve problems and perform experiments.	Lectures, Demonstrations, Discussions, Practicing Problem Solving, and Doing Lab Experiments	Answers to Questions on Quizzes and Tests, Analysis and Solutions of Test Problems, & Lab Reports
48	The student will be able to qualitatively and quantitatively define reflection and use it to ask and answer questions, solve problems and perform experiments.	Lectures, Demonstrations, Discussions, Practicing Problem Solving, and Doing Lab Experiments	Answers to Questions on Quizzes and Tests, Analysis and Solutions of Test Problems, & Lab Reports
49	The student will be able to qualitatively and quantitatively define refraction and use it to ask and answer questions, solve problems and perform experiments.	Lectures, Demonstrations, Discussions, Practicing Problem Solving, and Doing Lab Experiments	Answers to Questions on Quizzes and Tests, Analysis and Solutions of Test Problems, & Lab Reports
50	The student will be able to qualitatively and quantitatively explain the laws of reflection and refraction and use them to ask and answer questions, solve	Lectures, Demonstrations, Discussions, Practicing Problem	Answers to Questions on Quizzes and Tests, Analysis and Solutions of Test

	problems and perform experiments.	Solving, and Doing Lab Experiments	Problems, & Lab Reports
51	The student will be able to qualitatively and quantitatively describe and explain total internal reflection and use it to ask and answer questions, solve problems and perform experiments.	Lectures, Demonstrations, Discussions, Practicing Problem Solving, and Doing Lab Experiments	Answers to Questions on Quizzes and Tests, Analysis and Solutions of Test Problems, & Lab Reports
52	The student will be able to qualitatively and quantitatively define polarization and use it to ask and answer questions, solve problems and perform experiments.	Lectures, Demonstrations, Discussions, Practicing Problem Solving, and Doing Lab Experiments	Answers to Questions on Quizzes and Tests, Analysis and Solutions of Test Problems, & Lab Reports
53	The student will be able to qualitatively and quantitatively explain polarization by reflection and use it to ask and answer questions, solve problems and perform experiments.	Lectures, Demonstrations, Discussions, Practicing Problem Solving, and Doing Lab Experiments	Answers to Questions on Quizzes and Tests, Analysis and Solutions of Test Problems, & Lab Reports
54	The student will be able to qualitatively and quantitatively state Malus' Law and Brewster's Law for polarizaton and use them to ask and answer questions, solve problems and perform experiments.	Lectures, Demonstrations, Discussions, Practicing Problem Solving, and Doing Lab Experiments	Answers to Questions on Quizzes and Tests, Analysis and Solutions of Test Problems, & Lab Reports
55	The student will be able to qualitatively and quantitatively describe and explain images and use them to ask and answer questions, solve problems and perform experiments.	Lectures, Demonstrations, Discussions, Practicing Problem Solving, and Doing Lab Experiments	Answers to Questions on Quizzes and Tests, Analysis and Solutions of Test Problems, & Lab Reports
56	The student will be able to qualitatively and quantitatively describe and explain mirrors and use them to ask and answer questions, solve problems and perform experiments.	Lectures, Demonstrations, Discussions, Practicing Problem Solving, and Doing Lab Experiments	Answers to Questions on Quizzes and Tests, Analysis and Solutions of Test Problems, & Lab Reports
57	The student will be able to qualitatively and quantitatively describe the vertex, center of curvature, and focus of spherical mirrors and use them to ask and answer questions, solve problems and perform experiments.	Lectures, Demonstrations, Discussions, Practicing Problem Solving, and Doing Lab Experiments	Answers to Questions on Quizzes and Tests, Analysis and Solutions of Test Problems, & Lab Reports

58	The student will be able to qualitatively and quantitatively describe the object distance, image distance, radius of curvature, and focal length of spherical mirrors and use them to ask and answer questions, solve problems and perform experiments.	Lectures, Demonstrations, Discussions, Practicing Problem Solving, and Doing Lab Experiments	Answers to Questions on Quizzes and Tests, Analysis and Solutions of Test Problems, & Lab Reports
59	The student will be able to qualitatively and quantitatively use ray diagrams to find the image of and object for spherical mirrors and use them to ask and answer questions, solve problems and perform experiments.	Lectures, Demonstrations, Discussions, Practicing Problem Solving, and Doing Lab Experiments	Answers to Questions on Quizzes and Tests, Analysis and Solutions of Test Problems, & Lab Reports
60	The student will be able to qualitatively and quantitatively state the mirror equations for spherical mirrors and use them to ask and answer questions, solve problems and perform experiments.	Lectures, Demonstrations, Discussions, Practicing Problem Solving, and Doing Lab Experiments	Answers to Questions on Quizzes and Tests, Analysis and Solutions of Test Problems, & Lab Reports
61	The student will be able to qualitatively and quantitatively define lateral magnification for spherical mirrors and use it to ask and answer questions, solve problems and perform experiments.	Lectures, Demonstrations, Discussions, Practicing Problem Solving, and Doing Lab Experiments	Answers to Questions on Quizzes and Tests, Analysis and Solutions of Test Problems, & Lab Reports
62	The student will be able to qualitatively and quantitatively explain the relationship of lateral magnification to image and object distances for spherical mirrors and use it to ask and answer questions, solve problems and perform experiments.	Lectures, Demonstrations, Discussions, Practicing Problem Solving, and Doing Lab Experiments	Answers to Questions on Quizzes and Tests, Analysis and Solutions of Test Problems, & Lab Reports
63	The student will be able to qualitatively and quantitatively describe and explain lenses and use them to ask and answer questions, solve problems and perform experiments.	Lectures, Demonstrations, Discussions, Practicing Problem Solving, and Doing Lab Experiments	Answers to Questions on Quizzes and Tests, Analysis and Solutions of Test Problems, & Lab Reports
64	The student will be able to qualitatively and quantitatively describe the optical center, the two centers of curvature, and the two foci of spherical thin lenses and use them to ask and answer questions, solve problems and perform	Lectures, Demonstrations, Discussions, Practicing Problem Solving, and Doing Lab Experiments	Answers to Questions on Quizzes and Tests, Analysis and Solutions of Test Problems, & Lab Reports

	experiments.		
65	The student will be able to qualitatively and quantitatively describe the object distance, image distance, radii of curvature, and focal lengths of spherical thin lenses and use them to ask and answer questions, solve problems and perform experiments.	Lectures, Demonstrations, Discussions, Practicing Problem Solving, and Doing Lab Experiments	Answers to Questions on Quizzes and Tests, Analysis and Solutions of Test Problems, & Lab Reports
66	The student will be able to qualitatively and quantitatively use ray diagrams to find the image of an object for spherical thin lenses and use them to ask and answer questions, solve problems and perform experiments.	Lectures, Demonstrations, Discussions, Practicing Problem Solving, and Doing Lab Experiments	Answers to Questions on Quizzes and Tests, Analysis and Solutions of Test Problems, & Lab Reports
67	The student will be able to qualitatively and quantitatively state the lens equations for spherical thin lenses and use them to ask and answer questions, solve problems and perform experiments.	Lectures, Demonstrations, Discussions, Practicing Problem Solving, and Doing Lab Experiments	Answers to Questions on Quizzes and Tests, Analysis and Solutions of Test Problems, & Lab Reports
68	The student will be able to qualitatively and quantitatively define lateral magnification for spherical thin lenses and use it to ask and answer questions, solve problems and perform experiments.	Lectures, Demonstrations, Discussions, Practicing Problem Solving, and Doing Lab Experiments	Answers to Questions on Quizzes and Tests, Analysis and Solutions of Test Problems, & Lab Reports
69	The student will be able to qualitatively and quantitatively explain the relationship of lateral magnification to image and object distances for spherical thin lenses and use it to ask and answer questions, solve problems and perform experiments.	Lectures, Demonstrations, Discussions, Practicing Problem Solving, and Doing Lab Experiments	Answers to Questions on Quizzes and Tests, Analysis and Solutions of Test Problems, & Lab Reports
70	The student will be able to qualitatively and quantitatively describe the wave properties of light.	Lectures, Demonstrations, Discussions, Practicing Problem Solving, and Doing Lab Experiments	Answers to Questions on Quizzes and Tests, Analysis and Solutions of Test Problems, & Lab Reports
71	The student will be able to qualitatively and quantitatively define diffraction of light and use it to ask and answer questions, solve problems and perform experiments.	Lectures, Demonstrations, Discussions, Practicing Problem Solving, and Doing	Answers to Questions on Quizzes and Tests, Analysis and Solutions of Test Problems, & Lab

		Lab Experiments	Reports
72	The student will be able to qualitatively and quantitatively define interference of light and use it to ask and answer questions, solve problems and perform experiments.	Lectures, Demonstrations, Discussions, Practicing Problem Solving, and Doing Lab Experiments	Answers to Questions on Quizzes and Tests, Analysis and Solutions of Test Problems, & Lab Reports
73	The student will be able to qualitatively and quantitatively describe Young's double slit interference experiment and use it to ask and answer questions, solve problems and perform experiments.	Lectures, Demonstrations, Discussions, Practicing Problem Solving, and Doing Lab Experiments	Answers to Questions on Quizzes and Tests, Analysis and Solutions of Test Problems, & Lab Reports
74	The student will be able to qualitatively and quantitatively explain single slit diffraction of light and use it to ask and answer questions, solve problems and perform experiments.	Lectures, Demonstrations, Discussions, Practicing Problem Solving, and Doing Lab Experiments	Answers to Questions on Quizzes and Tests, Analysis and Solutions of Test Problems, & Lab Reports
75	The student will be able to qualitatively and quantitatively explain diffraction gratings and use them to ask and answer questions, solve problems and perform experiments.	Lectures, Demonstrations, Discussions, Practicing Problem Solving, and Doing Lab Experiments	Answers to Questions on Quizzes and Tests, Analysis and Solutions of Test Problems, & Lab Reports
76	The student will be able to qualitatively and quantitatively describe the particle properties of light.	Lectures, Demonstrations, Discussions, Practicing Problem Solving, and Doing Lab Experiments	Answers to Questions on Quizzes and Tests, Analysis and Solutions of Test Problems, & Lab Reports
77	The student will be able to qualitatively and quantitatively define photons and use them to ask and answer questions, solve problems and perform experiments.	Lectures, Demonstrations, Discussions, Practicing Problem Solving, and Doing Lab Experiments	Answers to Questions on Quizzes and Tests, Analysis and Solutions of Test Problems, & Lab Reports
78	The student will be able to qualitatively and quantitatively explain the photoelectric effect of light and use it to ask and answer questions, solve problems and perform experiments.	Lectures, Demonstrations, Discussions, Practicing Problem Solving, and Doing Lab Experiments	Answers to Questions on Quizzes and Tests, Analysis and Solutions of Test Problems, & Lab Reports

79	The student will be able to qualitatively and quantitatively explain the Thermal Radiation and Planck's Law and use it to ask and answer questions, solve problems and perform experiments.	Lectures, Demonstrations, Discussions, Practicing Problem Solving, and Doing Lab Experiments	Answers to Questions on Quizzes and Tests, Analysis and Solutions of Test Problems, & Lab Reports
80	The student will be able to qualitatively and quantitatively explain the Compton effect and use it to ask and answer questions, solve problems and perform experiments.	Lectures, Demonstrations, Discussions, Practicing Problem Solving, and Doing Lab Experiments	Answers to Questions on Quizzes and Tests, Analysis and Solutions of Test Problems, & Lab Reports
81	The student will be able to qualitatively and quantitatively describe DeBroglie's matter waves and use them to ask and answer questions, solve problems and perform experiments.	Lectures, Demonstrations, Discussions, Practicing Problem Solving, and Doing Lab Experiments	Answers to Questions on Quizzes and Tests, Analysis and Solutions of Test Problems, & Lab Reports
82	The student will be able to qualitatively and quantitatively describe the Heisenberg uncertainty principle and use it to ask and answer questions, solve problems and perform experiments.	Lectures, Demonstrations, Discussions, Practicing Problem Solving, and Doing Lab Experiments	Answers to Questions on Quizzes and Tests, Analysis and Solutions of Test Problems, & Lab Reports
83	The student will be able to qualitatively and quantitatively describe the nucleus of atoms and use it to ask and answer questions, solve problems and perform experiments.	Lectures, Demonstrations, Discussions, Practicing Problem Solving, and Doing Lab Experiments	Answers to Questions on Quizzes and Tests, Analysis and Solutions of Test Problems, & Lab Reports
84	The student will be able to qualitatively and quantitatively describe the strong nuclear force and use it to ask and answer questions and solve problems.	Lectures, Demonstrations, Discussions, Practicing Problem Solving, and Doing Lab Experiments	Answers to Questions on Quizzes and Tests, Analysis and Solutions of Test Problems, & Lab Reports
85	The student will be able to qualitatively and quantitatively describe radioactive atoms and alpha, beta, and gamma radioactivity and use them to ask and answer questions, solve problems and perform experiments.	Lectures, Demonstrations, Discussions, Practicing Problem Solving, and Doing Lab Experiments	Answers to Questions on Quizzes and Tests, Analysis and Solutions of Test Problems, & Lab Reports
86	The student will be able to qualitatively and quantitatively describe fission and	Lectures, Demonstrations,	Answers to Questions on Quizzes and Tests,

	fusion of atoms and use them to ask and answer questions and solve problems.	Discussions, Practicing Problem Solving, and Doing Lab Experiments	Analysis and Solutions of Test Problems, & Lab Reports
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By Bill Murray

Email: murray@rscc.cc.tn.us