General Information
Instructor: Dr. R. Knispel  Office: Halsey Science 348  Phone: 920-424-4431

Office Hours: 11:30 to 12:30 MWF, 9:10 to 11:30 Tuesday, and 10:20 to 11:30 Thursday.

Course Meeting Times:
Lecture 3:00-4:00 p.m. M W F   HS345
Lab 3:00-5:10 p.m. Tuesday   HS370


Lab work: Lab instructions will be handed out from week to week.

Course Outline:
Unit 1. Relativity—Chapters 1 & 2
Quantization of Charge, Light, and Energy—Chapter 3
The Nuclear Atom—Chapter 4
Unit 2 Wavelike Properties of Particles—Chapter 5
Schröedinger Equation—Chapter 6
Atomic Physics—Chapter 7
Unit 3 Statistical Physics—Chapter 8
Unit 4 Nuclear Physics  Student Project—Chapter 11 and related material

Testing: There will be a short in-class test and a 2 to 3 problem take-home test on Unit 1 and Unit 2. There will be a short take-home test on Unit 3 and students reports on Unit 4. Depending on time, other topics may be added as indicated by student interest.

The course grade will consist of the following:
Tests 1 and 2, each 20%
Test 3, 15%
Nuclear Physics Project 10%
Homework 15%
Lab work 20%

The concepts covered in this course are new and different from the concepts and physical laws covered in General Physics: Mechanics, Thermodynamics, Sound and Waves, Electricity and Magnetism, and Optics. These new physical laws with new conceptual bases are necessary at small distances and high speeds, but these laws reduce to familiar physical laws as we apply them to the larger distances and slower speeds with which we are familiar in everyday life.
Approximate Lab Schedule:

Week One—Sept. 13     Speed of Light in a Cable
Weeks Two and Three—Sept. 20 and 27  Interferometers
Weeks Four and Five—Oct. 4 and 11  Millikan Oil Drop
Week Six—Oct. 18  Planck’s Constant
Week Seven—Oct. 25  Electron Diffraction
Week Eight—Nov. 1  Franck Hertz Experiment
Week Nine—Nov. 8  e/m Ratio of electron
Week Ten—Nov. 15  Devoted to Nuclear Project
Week Eleven—Nov. 22  Nuclear Gamma Spectroscopy
Week Twelve—Nov. 29  Nuclear Half-Life and Nuclear Absorption
Week Thirteen—Dec. 6  Experiment to be Determined
Week Fourteen—Dec. 13  Make-up/Catch-up Week

Grading Scale:

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<th>In-class tests</th>
<th>Take-home Tests</th>
<th>Homework</th>
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