PHYSICS PHYS 318 - MODERN PHYSICS

Asst. Prof: Sharon Rosell
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Office hours: 11:00 A.M.-12:00 P.M. M,W,Th, 1:00-2:00 P.M. T or by appointment

Course Content:
During this course we will study introductory quantum mechanics. We will finish chapter 5 and cover chapters 6 through 8 of the text. After chapter 8, student input will help to decide which further chapter or chapters to study.

Course objectives:
1. Develop an understanding of the historical development of the Bohr atom.
2. Develop a conceptual understanding of introductory quantum mechanics.
3. Develop the mathematical skills necessary to do calculations in introductory quantum mechanics.
4. Apply Schrődinger's equation in spherical coordinates in three dimensions to a conceptual and mathematical understanding of the electronic structure of the hydrogen atom.
5. Develop a qualitative understanding of the properties of many- electron atoms, including trends in the periodictable.

Materials Needed:
Text: Modern Physics 2nd Ed. by Kenneth Krane

Tests:
There will be two midterms on January 26 and on February 16,
and a final exam on Wednesday, March 15 from 8:00 to 10:00 A.M.

Grading:

The final will be mainly over the last one third of the class, but there will be a few questions over previous material.

The weighting of tests, final and homework is as follows:

Homework	20 %
Test 1:	25 %
Test 2	25 %
Final	30 %

93% A, 90% A-, 88% B+, 83% B, 80% B-, 78% C+, 73% C, 70% C-, 68% D+, 63% D, 60% D-

Assignments:
There will be a few problems assigned each class day. All problems assigned during a given week will be due the following Thursday unless otherwise stated. The problems are meant to form a basis of discussion in the class period following the one in which they have been assigned, therefore assignments that are more than a week old will not be accepted.

Tests:
Tests will include both mathematical and conceptual problems, possibly some discussion questions and definitions.

Because you know the test dates well in advance, you are expected to be in class on that date. If an emergency occurs and you can't make class that day please call 963-2757. This is my office phone. It is connected to voice mail, so even if you can't contact me directly, you can leave a message. Because this is an upper division class I will not seek you out if you miss a test., and if I am not contacted prior to test time, or at least on the day of the test, you will receive a zero for that test.

Cheating:
Cheating on exams will not be tolerated. Any form of cheating will result in a grade of zero for that exam.

I do want members of the class to work together on other assignments, as long as each person gives input and no one just copies problem solutions with no understanding of the steps involved.

Withdrawal:
If you withdraw from class, please follow the formal university procedure outlined on pages 31`-32 of the undergraduate catalog. Otherwise your grade will be calculated with the same formula as everyone else's is.

Note-Special Graduation Requirement.

Physics Degree Capstone Portfolio (PDCP): Some of the assignments, tests and other work in this class would be appropriate material to include in the PDCP. Physics majors are reminded that they **must** have a complete PDCP in order to graduate. Physics majors are strongly encouraged to identify appropriate work for inclusion in the PDCP from among the work that they perform in this class, obtain approval from the instructor, and enter the work in their portfolio in the physics office.