Physics 3520: Modern Physics
Fall 2018

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Office Hours:	Wed & Fri 12:00-1:00 & Tues 10:30-11:30 (Tentative) Other times can be arranged at your request.
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Textbook	<u>Modern Physics </u>by Serway, Moses & Moyer. (Any edition)

This course will cover special relativity and the development of quantum mechanics. Many of these discoveries have had a significant impact on our society and our technologies. I plan to cover waves plus the first seven chapters in the textbook and hopefully selected topics from chapters 8 & 9. (The material on waves can be found in your General Physics text. You need to read the sections covering waves on a string.) The reason for reviewing waves is that much of the course is concerned with the wave-particle duality of matter and light. Therefore a good understanding of the nature of waves is very helpful. The math we will use will require that you have had the calculus sequence, and it is assumed you have had General Physics I and II. We will need to use complex numbers, but you should have covered that in Precalculus. Those of you in Math Physics will cover it there also.

I plan on giving two or three midterms (100 points each) and a final (150 points). There may also be take-home parts to some of the exams. The exams and final will count for <u>about</u> 80% of your grade. I will assign, collect and grade homework, usually one assignment per week. The homework will count for <u>about</u> 20% of your grade. Homework will be due <u>at the beginning of class</u> on the day indicated. It is important that you **DO THE HOMEWORK**! Your grade will be determined by looking at your total number of points, but if you are continually improving, I will weigh the later grades more heavily. I will use +/- grading. Typically the cutoffs for the grades are as shown below.

A	88-100%
B	77-87%
C	65-76%
D	50-64%
F	<50%

I encourage you to work together. I do not want you to copy another person's work, but it often helps to discuss the problems and the course material with other students. It is a good learning experience to try to explain the material to another person, and it usually is more fun when you work with other people.

A good practice is to read the homework questions and then read the chapter **<u>BEFORE</u>** I lecture on it. Then come to the lecture and make sure the questions you have from your reading are answered in the lecture. You need to keep up in the course.

Some, but not many, of the problems you will be asked to do may involve integrals that can be done with computer programs like Maple. Since most of you are in Math Physics, which uses Maple, I will not hesitate to assign a few these problems. If you need assistance, see me and I'll help you. If you are not in Math Physics, you can do them in other ways.

You will be graded heavily on your ability to do problems, but there will also be some conceptual questions, especially on the final.