

**Syllabus**  
**Physics 3305: Modern Physics**  
**Fall 2017**

**Course Webpage:** <http://www.physics.smu.edu/cooley/phy3305/>

**When/Where:** Tuesdays and Thursdays 12:30 pm - 2:00 pm  
158 Fondren Science Building

**Instructor:** Dr. Jodi Cooley  
151 Fondren Science Building  
214-768-4687  
[cooley@physics.smu.edu](mailto:cooley@physics.smu.edu)

**Teaching Assistant:** Mr. James Thomas  
[jamesthomas@mail.smu.edu](mailto:jamesthomas@mail.smu.edu)

**Office Hours:** TBD

**Prerequisite:** PHYS 1304

**Course Objective:**

Upon completion of this course the students will be able to

1. Explain why relativity and quantum mechanics and are need to explain natural phenomena that are central to the modern world;
2. Apply their understanding of relativity and quantum mechanics to a range of problems that occur in areas as diverse as medicine, communication and computation;
3. Demonstrate the basic understanding of relativity, quantum mechanics and statistical mechanics required to pursue more advanced topics in each of these related areas.

The above objectives will be achieved through: participation in in-class discussion of lecture and reading materials; discussion with the lead instructor(s) of reading and lecture during regular office hours; successful completion of routine homework assignments; several in-class examinations.

**Student Learning Outcome**

Students will be able to research, compile and present an assigned topic in the field of Modern Physics.

**Textbook:**

Required: Modern Physics, by Randy Harris (2th edition)

Recommended: A Mathematical Handbook (i.e. Schaum's Outline Series: Mathematical Handbook of Formulas and Tables by Murray R. Spiegel, 4th edition)

**Homework:** Homework will be assigned in class and must be submitted before 12:30 pm on the due date. NO CREDIT WILL BE GIVEN FOR LATE HOMEWORK. Solutions will be provided for each chapter after the due date and time. The solution notes may not be complete and may contain errors. Use them with caution. I encourage you to discuss your work with a study group and use office hours if you have difficulty.

**Exams:** There will be two mid-term exams (Midterm Exam 1: Thursday, September 21st, Midterm Exam 2: Thursday, October 19th) and a final cumulative exam (Monday, December 11th from 11:30 am - 2:30 pm.)

**Presentation:** You will be assigned a topic after the first mid-term which will be the basis of a 15-minute presentation. The presentations will be held during two or three class periods at the end of the semester. The expectations for the presentation and the assignment of topics, will be discussed after the first mid-term exam.

**Grading:** Your course grade will be based on in class quizzes (5%) homework (15%), midterm exams (20% each), final exam (20%) and in-class presentation (20%).

**University Honor Code:** The student code of conduct can be found in the 2017 - 2018 Student Handbook which is available on the SMU website (<http://smu.edu/catalogs/>). All students will be expected to adhere to it. Any student found cheating or plagiarizing another's work will be given a zero for that assignment and a complaint will be filed through the Vice President for Student Affairs Office.

**Disability Accommodations:** Students needing academic accommodations for a disability must first register with Disability Accommodations & Success Strategies (DASS). Students can call 214-768-1470 or visit <http://www.smu.edu/Provost/ALEC/DASS> to begin the process. Once registered, students should then schedule an appointment with the professor as early in the semester as possible, present a DASS Accommodation Letter, and make appropriate arrangements. Please note that accommodations are not retroactive and require advance notice to implement.

**Religious Observance:** Religiously observant students wishing to be absent on holidays that require missing class should notify their professors in writing at the beginning of the semester, and should discuss with them, in advance, acceptable ways of making up any work missed because of the absence. (See University Policy No. 1.9.)

**Excused Absences for University Extracurricular Activities:** Students participating in an officially sanctioned, scheduled University extracurricular activity should be given the opportunity to make up class assignments or other graded assignments missed as a result of their participation. It is the responsibility of the student to make arrangements with the instructor prior to any missed scheduled examination or other missed assignment for making up the work. (University Undergraduate Catalogue)

**Important Dates:**

Please see the University Calendar: [http://smu.edu/registrar/academic\\_calendar.asp](http://smu.edu/registrar/academic_calendar.asp)