Physics 0477 Thermal and Modern Physics

Fall, 2018

Location: Room 11 Thaw Hall

Class Times: Monday and Wednesday, 11:00AM – 12:15PM; Friday, 11:00AM – 11:50AM

Text: Modern Physics for Scientists and Engineers 4th Edition, Stephen T. Thornton and Andrew Rex

Professor: James V. Maher

Contact Information: Phone 4-2180; Email jvmaher@pitt.edu; Office 602A Cathedral of Learning

Office Hours: 9:00 – 9:50am Monday and Wednesday, or by appointment. (It is quite difficult to schedule office hours that fit every student's schedule. Please feel very free to make an appointment by emailing me to suggest a time you would like to meet. I will get back to you via email to set up an appointment.)

Course Description and Objectives: This course addresses two of the great revolutions in the science of the twentieth century: relativity and quantum mechanics. These revolutions were essential for reaching an understanding of physical phenomena at the atomic and subatomic scales. During the same time period, the development of modern thermal and statistical physics provided a deeper understanding of the properties of macroscopic samples of matter in terms of the underlying microscopic composition of that matter. So this course will also address the basic issues of thermal and statistical physics.

Prerequisites: Physics 0175 (B- or better) or Physics 0476 (C or better). Co-requisite: Mathematics 0240

Text: The Thornton and Rex text listed above will serve as our text for the study of relativity and quantum physics. For the thermal and statistical physics, we will use a combination of the Halliday, Resnick and Walker text used for Phys 0174-0175 and class notes that will be posted on our CourseWeb site. Both texts will be held on reserve in the library in Benedum Hall. It is highly recommended that the students buy the Thornton and Rex text.

CourseWeb: A CourseWeb site for this course has been created and from there you may view announcements, send email to the instructor and download course material (such as the syllabus, homework assignments, exam announcements and exam solutions). To access the CourseWeb site, go to http://courseweb.pitt.edu and login using your Pitt email username and password.

Class Participation: I encourage you to participate fully in class discussions. In my experience, most questions asked during class are questions that many students would like to hear answered, and I welcome the opportunity to answer such questions.

Homework: To truly understand physics, you need to be able to take first principles and apply them to new situations. Thus, problem-solving skills are important to learning and understanding physics. Therefore homework is a crucially important part of the course.

Exams: There will be **one** mid-term exam (in lecture) and a 1 hour 50 min cumulative final examination. The exams are expected to fall on:

- Mid-Term Exam: Wednesday, October 10
- Final: To be announced later.

Course Grades: Your grade in the course will be based on homework and exams. The grades will be weighted according to the table below:

Homework 10%
Midterm Exam 40%
Final Exam 50%

Academic Integrity: "Students in this course will be expected to comply with the University of Pittsburgh's Policy on Academic Integrity. Any student suspected of violating this obligation for any reason during the semester will be required to participate in the procedural process, initiated at the instructor level, as outlined in the University Guidelines on Academic Integrity. This may include, but is not limited to, the confiscation of the examination of any individual suspected of violating University Policy. Furthermore, no student may bring any unauthorized materials to an exam, including dictionaries, telephones and programmable calculators."

Disabilities: If you have a disability that requires special testing accommodations or other classroom modifications, you need to notify both the instructor and the Disability Resources and Services no later than the 2nd week of the term. You may be asked to provide documentation of your disability to determine the appropriateness of accommodations. To notify Disability Resources and Services, call 648-7890 (Voice or TTD) to schedule an appointment. The Office is located in 216 William Pitt Union.