Physics 0477 Thermal and Modern Physics

Fall, 2017

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](mailto:jvmaher@pitt.edu); Office 602A CL

Office Hours: 10:00-10:50am Monday and Wednesday or by 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 Statistical Physics- Berkeley Physics Course Volume 5 by F. Reif. All three texts will be held on reserve in the library in Benedum Hall. There will be multiple copies of the two thermal physics texts in the reserve section of the library, and it is not recommended that students buy either of these books. 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, 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 18
* 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%

**Office Hours: See above**

**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.