

## PHYSICS 309K, FALL 2016

### Instructor:

Willy Fischler, RLM 9.310A, 471-4072

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Office Hours: Mondays 12:15 noon - 1:30 pm

Announcements, homework assignments and solutions will be regularly posted on Quest:

<https://quest.cns.utexas.edu/>

### Grader:

Stefan Eccles

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Office Hours/Review session:

Wednesdays and Thursdays from 4:00-5:30pm

Location: RLM 9.308

### Textbook:

W.Thomas Griffiths and Juliet W. Brosing: "The Physics of Everyday Phenomena, A Conceptual Introduction to Physics" Mc Graw Hill

Physics 309K covers particle mechanics (Unit One and Chapter 20), fluid mechanics and heat (Unit Two). No prior physics or math is required beyond the usual high school math and science. This course is conceptual with some computational elements, it is designed for non-technical students. There are demonstrations and occasional movies.

In particle mechanics, the concepts associated with Newton's laws will be discussed and the application of these laws to the motion of particles developed. Motion in various numbers of dimensions will be described and the use of conservation laws described. Both relativistic and non relativistic motion will be studied. In addition, we will discuss how to describe the behavior of systems with a very large number of particles in the section about fluids and thermodynamics.

The organization of the chapters is as follows:

1) Describing motion. 2) Newton's laws. 3) Falling objects and particle motion. 4) Circular motion, planetary motion and gravity. 5) Momentum and impulse. 6) Energy. 7) Rotational motion of solid objects. 8) Special Relativity. 9) The behavior of fluids. 10) Temperature and heat. The order of subject matter will roughly follow the book but may deviate at times and additional material not covered in the book might be presented. The students will be notified in class what the subject matter for the next class will be so that they can read in advance relevant material.

### Attendance:

Class attendance is not mandatory but is strongly recommended. Class interruptions such as arriving late, leaving early, or chatting, are unacceptable. Your cooperation in maintaining a good atmosphere for learning is required.

Grades:

The grades will be based upon homeworks (40%), three in class exams (25%) and one mandatory final exam (35%). The worst two homework grades will be dropped and the worst test will be dropped. The exams will consist of questions similar to those on the homework.

Exam 1: Friday, September 23, 9:00 am - 10:00 am (in class)

Exam 2: Friday, October 21, 9:00 am - 10:00 am (in class)

Exam 3: Monday, November 21, 9:00 am - 10:00 am (in class)

Final Exam: Saturday, December 10, 2:00-5:00 pm. Location tba

Reference Cards: You may use one 8.5 by 11 inches paper size note with anything you have written on it as a help note on any exam (including during the final exam), but no other references may be used.

Homeworks:

Will be posted on Quest approximately weekly. You are encouraged to discuss homework with anyone you wish.

Other:

Announcements will be posted on "Canvas": <http://canvas.utexas.edu>

Last day of the official add/drop period is August 29.

Last day an undergraduate student may change registration in a class to or from the pass/fail basis is November 1

Please notify me of any modification/adaptation you may require to accommodate a disability-related need. You will be requested to provide documentation to the Dean of Student's Office, in order that the most appropriate accommodations can be determined. Specialized services are available on campus through Services for Students with Disabilities. 471-6259, <http://www.utexas.edu/diversity/ddce/ssd/>

- Academic dishonesty will not be tolerated.

For more information see <http://registrar.utexas.edu/catalogs/g10/ch01/index.html>

- By UT Austin policy, you must notify me of your pending absence at least fourteen days prior to the date of observance of a religious holy day. If you must miss a class, an exam, a work assignment, or a project in order to observe a religious holy day, you will be given an opportunity to complete the missed work within a reasonable time after the absence.