Science is an adventure of the whole human race to learn to live in and perhaps to love the universe in which they are. To be a part of it is to understand, to understand oneself, to begin to feel that there is a capacity within man, far beyond what he felt he had, of an infinite extension of human possibilities.

examples, and demonstrate some physical phenomena. Do not expect the lecture to cover everything in the text nor to substitute for study of the text. Pay attention to the demonstrations. Some exam questions will refer to them. Do not be shy about asking and answering questions during lecture. When called upon or when asking a question, please state your full name to assist the instructor and classmates in getting to know you. Feel free to consult the instructor after lecture with additional questions.

**Lab:** Concurrent enrollment in Physics 301 is recommended but not required. Students are encouraged but not required to join Garage Physics ([www.physics.wisc.edu](http://www.physics.wisc.edu)) and to become involved in independent research or innovation. Some online experiment activities may be assigned.

**Exams:** Two 50-minute exams will be offered during the discussion period on 25 Feb and 25 Mar. and a 3rd final exam (not cumulative) will be offered at the scheduled final exam time 14 May at a location to be determined. Be sure you can make all of the lecture and discussion section meetings and all of the exam times. Exams will be graded on a scale of 100 points and will comprise several conceptual short answer questions and select problems similar to the exercises and examples found in the text. An example exam may be found at the LEARN@UW website.

**Homework:** Exercises (generally 8 problems per week) from the text are assigned on the syllabus and will be due at midnight the Friday. During the discussion section prior to the due date, you will have a limited opportunity (~20-30 minutes) to collaborate on solutions. Prepare solutions prior to discussion and use the discussion to clarify and correct errors and to help others. Some of the problems are straightforward applications/illustrations of material in the text. Others are challenging and may require some web research. Your solution of each assigned problem must demonstrate your understanding. Use words not simply formulae, and good style. Use WriteLaTex.com and submit a pdf version to the Dropbox folder for the appropriate week at the Learn@UW website.

To reiterate, explain the problem and all assumptions and the steps in your solution. Convince yourself and the grader that your solution is correct. A 2nd draft is recommended. Numerical answers for some problems may be found in the back of the text. No credit will be given for a numerical answer alone. While you are encouraged to seek advice in and outside of class, do not plagiarize. You must show that you have independently worked and understood the problem.

Homework will be graded with a scale of 5 points per problem. Do not fall behind on completing the exercises. They are essential preparation for the exams and an important component of your grade. Working additional problems is strongly recommended.

**LaTeX:** LaTeX is a standard method of document creation in physics as it supports mathematical equation generation and a vast range of open source templates. This class will use writelatex.com. Open a free account there and familiarize yourself with the operation of the site and study the template documents and documentation. You will use LaTeX in this class to prepare homework solutions, to discuss problems online via Piazza, and to prepare a research paper and CV.

**Piazza:** Linked to the LEARN@UW website, the class Piazza group provides a means to ask questions about homework exercises and other physics of your classmates.
and instructors. Your participation in assisting your classmates with questions posed on the forum will count towards your grade. Join PIAZZA and enable email notification of posts so you can rapidly respond.

Be courteous, always. Piazza is an interactive, student-driven online service for managing questions and answers in both online and face-to-face classes. Piazza gives students a class space to ask and help answer course-related questions in a timely manner outside of class. Students can collaboratively work on answers by adding, modifying, or deleting content. Instructors can view students’ questions and answers, post their own questions and answers, and endorse the best responses. LaTeX is supported. Folders are provided for discussion of each homework assignment and for other discussion topics.

Social bookmarking: A social bookmarking/library research activity will be conducted online at Diigo.com. This activity will provide an introduction to topical news and developments in physics and provide the basis for a research paper. Open a free account at Diigo.com. **Be SURE to use your .wisc email and username when joining Diigo so the instructor can identify you.** Enable daily email notification via your preferences. Install the Diigo bookmarklet in your browser. The bookmarklet makes for rapid posting of a journal article directly from your browser. Instructions for joining the private Diigo group and using Diigo will be provided. Upon joining the group, go through the library research tutorials recommended by the instructor there and test drive finding a journal article, posting, and commenting.

In weeks assigned on the syllabus, you are required to post a link to a peer-reviewed published paper (a link to a science news article that you have discovered may be included for further information) on a subject pertinent to the material already covered in class. Before you post, check that your content has not already been posted by another participant. In addition, you are required to include in your post a 1-2 paragraph summary and reflection comment that may excite other participants and demonstrate your understanding. Also, you must tag your post with your username name and appropriate keywords.

During the following week, you will read and provide a collaborative reflective comment of one paragraph on 3 posts the previous week by other students and provide an additional paper reference for one of such posts. Examples will be provided of acceptable information and comments. The grading rubrics may be found at the LEARN@UW website. These posts and reflections are due by Friday midnight on the weeks indicated in the syllabus.

Your posts must include a user tag in the form yourname_post.

Discussion: Discussion attendance is required. Discussion sections will take place in the lecture hall. Please sit as close as possible to the front of the hall. The first half of the discussion hour will generally be reserved for presentations and other organized activities. In the remaining half of the period, students will work collaboratively on assigned exercises.

It is imperative that you reach out to your classmates for help and that you are gracious and willing to assist others. You will be expected to behave professionally although the discussion is informal. Consult the instructor if you are having any difficulties in this collaborative environment.
**Laptop/mobile device:** Bring a laptop or tablet to each discussion and lecture. You may be asked to look up something with Google or to view a website.

**Research Paper:** A 4-page single-spaced paper on a contemporary physics topic based upon a Diigo thread is required. This paper should introduce the topic and refer to and cite at least three published peer-reviewed journal articles (not blogs or magazine articles or Wikipedia). It must be prepared in LaTeX in a journal format of your choice and be delivered as a pdf file electronically to the LEARN@UW dropbox paper folder one week before the last class day. It will be graded on the equivalent of a letter-grade basis including content, understanding, and execution. Instructions for learning LaTeX will be provided in discussion section. Students are encouraged to visit the UW writing center and cultivate classmates to improve their papers. The paper grading rubric is available at the LEARN@UW website.

**Participation:** A portion of your grade will be assessed based on your class attendance, participation via questions and in class discussion, collaborative behavior in discussion section, and helpfulness at the online Piazza homework discussion forum.

**Profiles:** Fill out a complete user profile on Diigo, LEARN@UW, and PIAZZA. Include a professional photo and your real name. This practice will assist your instructors and classmates in identifying you. Anonymous posting is not supported.

**Grade:** The components of your grade are exam 1 (20%), exam 2 (20%), exam 3 (20%), assigned exercises (20%), bookmarking (10%), participation (5%) and paper (5%).

**LEARN@UW:** At the LEARN@UW website, you may access your grades on an item by item basis, view the course information, syllabus, lecture slides, dropbox, rubrics, and homework solutions. You may consult the instructor via video conferencing and consult other students via Piazza.

**Honors:** Students who enroll for and wish to receive honors credit are required to join Garage Physics (www.physics.wisc.edu/garage). Honors credit will be awarded to those who join and contribute to a collaborative project. Your Garage Physics related activity must demonstrably exceed 15 hours total and you must submit a request for honors credit with a 2-page report 3 weeks before the end of scheduled classes.

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