

Physics 10 Spring 2022

Course Syllabus

Instructor: David Newton

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Office hours: Monday only: 1:30 pm- 2:20 pm,

Final Exam: Wednesday, March 22nd, 11:30 am – 1:30pm. The final will not be given earlier or later.

Text: Conceptual Physics by Hewitt. 11th edition or whatever you can find that costs less (or don't even get a text).

Student online presence and daily attendance (five days a week) are required. Student video cameras are strongly recommended. (I need to visually see you, or special arrangements with me need to be made). Students with the camera turned off and not present to answer questions when called upon will be considered not present and will be dropped from the class with repeated occurrences.

Your grade will be based on a simple calculation. Most of the grading will be based on multiple choice questions. Over the course of the quarter, you should have well over two hundred of these types of questions. They will be given a few at a time, maybe three days a week. They will be given at the end of the period with enough time left in the period to finish by 1:20 when the class is over (one minute per question). One point per question with fifty questions on the final exam (for fifty points). Other quizzes, just a few, typically will be of a one, and only one, sentence answer with no equations as I will explain in class. Those one sentence answer questions will be worth five points apiece. The simple grade calculation is to just add up all the points at the end and have a percentage of that total. Your grade will be based on that percentage by the following table. There will be no minus or plus grades.

A: 90-100 %

B: 80-89 %

C: 60-79 %

D: 50-59 %

F: this grade will only be assigned if there is insufficient attendance.

The lectures will be recorded. Take good notes during the lectures, they should be useful, because all the quizzes are open notes but, in principle, you shouldn't need to use the notes at all.

- This course will explore the structure of physics from a purely conceptual standpoint. Few mathematical techniques will be used to express the rationale of our universe, instead, verbal logic will be employed. Few numerical calculations will be performed. Although it may sound easier to study physics without mathematics, actually this is a challenging goal and requires a skillful and precise use of language. We will start with mechanics and study motion, Newton's laws, energy, and momentum. Electricity is next including simple circuits. Then on to the structure of the atom and the nature of matter. Oscillations, wave motion, and sound are at the end. Special topics (light, relativity, quantum mechanics, etc..) will briefly be treated after that as time allows.

Attendance is required! If you miss more than five lectures, you may find yourself dropped from the class (or after the withdraw date, receiving a grade of F). A missed quiz is considered equivalent to a missed lecture.

Student Learning Outcome(s):

*Critically examine new, previously un-encountered problems, analyzing and evaluating their constituent parts, to construct and explain a logical solution utilizing, and based upon, the fundamental laws of physics in general.