

## Honors Physics 2007-2008

**Instructor: Mr. Secrest**  
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### **Text:**

*Physics* by James Walker

### **Supplies Needed:**

**2 notebooks** (one for homework and one for in-class notes), **scientific calculator** (needs to have trig functions such as sine, cosine, tangent, etc.)

### **Course Description:**

This course is intended to teach some of the important ideas in physics. The emphasis will be on physics concepts first, and then on calculations and equations based on those concepts. To truly understand physics, you must first understand the concepts and build from those. Physics is not just an unrelated bunch of equations. It is not a math class, it is a science class. Each equation is representing something that happens in the real world, and our goal is to *understand* what it is explaining before just calculating an answer. We will do plenty of problems as well, but the concepts will be the starting point. This course is also intended to make physics “phun” and to give you an idea of what physics is and why it is important.

### **Homework:**

Written homework will be assigned almost every night and will include both conceptual and numeric questions. In your **homework notebook**, write the date and then work out the problems under it. During the next class we will often go through parts of the homework that people have questions on, but I also may ask people to explain how they did some of the problems. The assignments will help you learn the material, *but only if you put thought and effort into doing the problems*. You are expected to attempt all the problems (setting the problems up, showing some work, or at least a written explanation of what you think you should do if you are really stuck). I encourage you to work with other people if you are having trouble. This does not mean copying what they have written down because you do not learn anything from that. *You* need to understand how to do the problems too. Make sure *you* understand the steps too.

I will randomly (by rolling dice) check your homework notebooks to see if your assignment from the night before is completed (by completed, I mean each problem attempted). When I check the homework it is either 10 points if it is completed, or zero points if it is not (or if you forgot to bring your homework notebook to class – *you will **not** be allowed to go get it from your locker*). You will be able to get partial credit once per quarter if your homework was not complete by turning it in the following day, but it will be graded on correctness, and it will be worth less than the full ten points.

You are responsible for understanding how to do the problems after we have talked about them the next day. If you do not, **ask questions!** Either ask me (in class or outside of class) or talk to one of your classmates that does understand.

Many nights you will also be given reading assignments from the textbook (often just a section or two) that will serve as an introduction to the next day’s class. It is important to keep up with the reading because it makes it easier to follow what we talk about in class. The time in the class will not be spent repeating what you should have read, but rather discussing and explaining it. I will not always be working out the example problems that are given in the book, but you should try to work through them because they will often help with problems in the following night’s homework, and if there is a part that you do not understand, then **ask about it**.

### Quizzes:

There will be a quiz each Wednesday. The quizzes will have four multiple choice questions based on the material we have learned up to that point (not just from the past week, but *everything*), and two problems that will be similar to ones that you had in the homework during the previous week. The quizzes will be out of 10 points, with the multiple choice questions counting for 1 point each, and the longer problems will be 3 points each. There will also be other smaller quizzes throughout the quarter, worth between 1-5 points. Some will be one or more questions based on problems or concepts that we have been covering in class, and some will be quizzes to make sure that you are doing your reading. These would not focus on small details, but rather main concepts that you should have picked up from the reading. Sometimes these extra quizzes will be announced, sometimes they will be pop quizzes, so you need to do the reading each night and spend a few minutes looking over the day's material before class the next day.

**Note:** You will be allowed to make corrections for quizzes and tests to get some of the credit back that you missed. There is a separate handout that you will be given that gives the guidelines for these corrections. Just because you turn in corrections does not automatically mean that you get the points. The corrections must be correct and follow the required format. See me if you have any questions.

### Tests:

Tests will be given after almost every chapter and cover the main topics that we studied. The questions will be a mix of both conceptual questions and problems which require calculations. These tests will each be out of 100 points.

Also there will be some shorter tests each quarter that will come in the middle of chapters to check how students understand the material so far before moving to a new idea in the chapter. These will each count as either  $\frac{1}{4}$  or  $\frac{1}{2}$  of a test grade (25 or 50 points compared with the tests which are 100 points each). These will be shorter than regular tests, but still several problems long. We will talk more about both the types of tests before the first ones.

You will always be told about the tests at least a week ahead of time, so being absent *the day before the test* **does not** excuse you from taking it. If you miss *multiple days before the test*, you must talk to me when you return about when you can make it up, but it will usually be the day after you return. If you are absent *the day of the test*, you will make it up the *day that you return*. Even if you miss *one day before the test and the day of the test*, you **will take it the day that you return**. We will not cover any new material the day before the test, so *unless you miss multiple days before the test* you must be ready to make it up **on the day that you return**. **\*\* The same policy applies to the Wednesday quizzes \*\***

**\*\*\*NOTE:** Cheating **will not be tolerated** on quizzes, tests, or semester exams. See the student handbook for the school's policy on what the consequences of cheating are. Besides the obvious cases of copying off somebody else or allowing somebody to copy off you, other things that would be considered cheating would be passing a calculator to someone else, passing a note to someone else (even if it is unrelated to the test), or talking before everyone has turned in their test or quiz (even if it is to ask to borrow something from someone else). If you need something from a classmate, ask me to ask them for you.\*\*\*

### Labs:

Each week we have time given to us for labs. It won't always be used for labs. Sometimes it will be used for tests, or we might have a quiz or go over homework questions and then still have time to cover new topics, or it might be used to do group work on problems based on topics that we cover in the first part of class. Throughout the year we will be trying to do as many labs as possible. Some of them will be very straight forward, but some of them will be open ended where you will be figuring out the experiment yourself. Some of the labs will be completed at home as projects. Sometimes you will be writing a formal lab report for the experiment, and sometimes you might be answering a few questions or graphing your results to turn in. Sometimes your grade will come from something that you have to predict in the lab itself. The labs will not all be worth the same amount of points. The number of points will usually have to do with how much work you have to put into the lab. A straightforward lab usually won't count as much as an open ended lab, and a lab where you are writing a full lab report will count much more than either of those. You will be given details about the amount of points that each lab is worth when we get to it. Because of this, I don't know how many total points there will be for the lab each quarter, and it could vary

a lot from quarter to quarter (some topics have lots of possibilities, while others have just a few things that can be done). **Any goofing around in the lab results in a zero for that lab and a trip to the dean's office.**

### **Participation**

In class we are going to be using an interactive electronic response system for me to ask questions on concepts to the class. This allows both of us to get feedback each day on how well you understand the material. You will receive a participation grade based on whether or not you submit answers to the questions, not based on how many you got correct. This is going to be used as a learning tool, not an assessment tool. If you are paying attention in class, responding to the questions, and discussing with your neighbors when you are asked to you will receive **+1** point for the day. If you are sleeping, or not paying attention (but not distracting others) you will receive **0** points for the day. If you are being very disruptive (or have to be reminded several times to be quiet) you will receive **-5** points for the day. If you are causing problems and I have to either write a JUG or ask you to leave, you will receive **-10** points for the day. *Also, for safety reasons goofing around will not be tolerated when we are doing labs.* This type of behavior will result in **-20 points** for the day.

### **Grading:**

Your quarter grade will be based on each of the categories talked about above: tests, quizzes, labs, homework, and class participation. Your test average counts for 40% of your quarter grade, your quiz average counts for 30%, labs count for 15%, homework counts for 10%, and your class participation grade counts for 5%.

The semester grade will be calculated in the following fashion: **1<sup>st</sup> Quarter (40%) + 2<sup>nd</sup> Quarter (40%) + Semester Exam (20%) = Semester grade.**

If you have questions or any concerns about how you are doing, **do not hesitate** to talk to me.

### **Grade Scale:**

This course is on the school grading scale (grades will not be rounded):

<b>A+</b>	<b>98 - 100</b>	<b>C+</b>	<b>82 - 84.99</b>
<b>A</b>	<b>95 - 97.99</b>	<b>C</b>	<b>79 - 81.99</b>
<b>A-</b>	<b>93 - 94.99</b>	<b>C-</b>	<b>77 - 78.99</b>
<b>B+</b>	<b>90 - 92.99</b>	<b>D+</b>	<b>74 - 76.99</b>
<b>B</b>	<b>87 - 89.99</b>	<b>D</b>	<b>72 - 73.99</b>
<b>B-</b>	<b>85 - 86.99</b>	<b>D-</b>	<b>70 - 71.99</b>

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