Dr. Tate Wilson

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Phone: 262-951-3092
Office: Charles Street Hall 208
Office Hours: MWF, 9:20 - 10:30 AM in RK-101, or by appointment.
Class Schedule: MWF, 8 - 9:10 AM
Lab Schedule: T, 6:00 - 8:50 PM
Classroom: MN 206
Laboratory: RK 101
Credits: 4
Required Materials:
- McDermott et al. 2002, *Tutorials in Introductory Physics*, (Lab and Homework)
- WebAssign homework system access code
Overview: The second course of a calculus level two-course sequence in the basic principles of physics covering the general areas of heat, light, electricity and circuits, and magnetism. This course satisfies the physics requirement for some majors, and pre-health professional requirements. Four hours of lecture/discussion and three hours of laboratory per week.

Course/Learning Objectives:

1. Understand the historical development of classical physics and its relation to modern physics.
2. Gain facility with the applications of algebra, geometry, trigonometry, and calculus to practical problems.
3. Learn and apply the foundational physical tools of thermodynamics, electricity & magnetism, circuits, and optics.
4. Improve the scientific communication skills developed in General Physics I.

Schedule: We will cover chapters 18 - 34 of the textbook in order. Not all sections of every chapter will be covered. Notice that this is 16 chapters in 15 weeks. Obviously our pace will need to be about a chapter per week. This is not as bad as it sounds, but it is essential that you not fall behind. If you find you are struggling to keep up, please talk to me about it early on, when there is still time for me to help.

Assessment: Performing calculations in an exam setting has always been the “gold standard” for assessing physics knowledge. In keeping with that tradition, you must pass the exams to pass this course. That said, we recognize that there are many reasons a student may “underperform” on exams. The rest of the course assessment tools are much friendlier to your grade, and your final course grade will therefore almost always be better than your exam grades. While it is possible that, using this grading rubric strictly, a student could fail the exams and still pass the course - this will not be allowed.

**tl;dr:** Your exam average (including the final) must be a D or better, in order to earn a C or better in the course.

Grading:

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
<th>Notes</th>
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</thead>
<tbody>
<tr>
<td>Midterm Exams</td>
<td>30%</td>
<td>dates to be determined, in class</td>
</tr>
<tr>
<td>Final Exam</td>
<td>20%</td>
<td>19 Dec, 8 AM, Main 206</td>
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<tr>
<td>Labs</td>
<td>20%</td>
<td>see note below</td>
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<tr>
<td>Quizzes</td>
<td>5%</td>
<td>see note below</td>
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<tr>
<td>Homework</td>
<td>20%</td>
<td>Online (<a href="http://www.webassign.net">www.webassign.net</a>)</td>
</tr>
<tr>
<td>Reading Quizzes</td>
<td>5%</td>
<td>Online (course eLearning site)</td>
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Letter Grades: All scores will be weighted and averaged and compared to this scale:
A (93-100), AB- (88-92), B (83-87), BC (78-82), C (70-77), D (60-69), F (<60)

Reading Quizzes: There will be an online quiz for each chapter (on the Carroll eLearning site), due just before that material is to be covered in the lecture. To get the most out of the lecture, it is essential that the material is already familiar.

Labs: The lab will meet weekly on Thursday afternoons. Group activities each week will be based on the tutorials, workbook, data measurement and analysis, or a combination of any of these, and your group will be graded as one. If an experiment is performed, a lab report (from the group) will be due the following Tuesday in lecture. If lab homework is assigned, it will be due (from the group) the following Tuesday in lecture. Points will be assigned seperately for homework, reports, and participation, and weighted to 20% of the final grade.
Quizzes: Each week at the start of Lab, there will be a short quiz based on the recent lecture material. The purpose of these quizzes is to get you used to solving exam type problems, in an exam type setting, without the exam stress.

Homework Assignments: When learning Physics, especially introductory Physics, there is no substitute for working out solutions to problems. That is exactly what you will have to do on the exams, and the purpose of the homework is to encourage you to practice that. We use an online homework system in order to provide you with helpful feedback on your progress immediately, as you work on the assignment. This system is not intended to eliminate the instructor from the equation! Please come to me at any time, to ask any question, large or small, regarding the homework or any other part of the course.

Exams: There will be three mid-semester exams covering the topics immediately preceeding the exam dates. The exam questions will be very similar to the quizzes and practice exams. Completing and understanding the homework, quizzes, and practice exams is the best way to prepare for the exams.

Final Exam: The final exam will be much like the mid-semester exams, except it will be cumulative and twice as long.

Academic Integrity: The Carroll University Academic Integrity Policy is located in the student handbook: https://my.carrollu.edu/ICS/icsfs/Student_Handbook_14-15_Updated
Please familiarize yourself with it. Carroll University emphasizes that students have an obligation to conduct their academic work with honesty and integrity. All acts of academic misconduct are serious. If you have any questions about appropriate citations, please ask.

Easter Egg: Albert Einstein is best known for the famous equation \( E = mc^2 \), a result that follows from his theory of Special Relativity. Einstein won the Nobel Prize for Physics, but you may be surprised to learn that his award was not primarily for his work with relativity. The wise student of this course would look up what Einstein’s Nobel Prize was for, and remember this for the final exam.

Accommodations: Students with disabilities who may need accommodations or any student considering obtaining documents should make an appointment with the Walter Young Center (262-524-7621) no later than the first week of class.

*The instructor and the University reserve the right to modify, amend, or change the syllabus (course requirements, grading policy, etc.) as the curriculum and/or program require(s).*

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1Front Page Background Image from Futurama, by Matt Groening and Co.