

PHY146: University Physics II

CRN 22089204

General Information and Grading Policies Fall 2009

Note: This information is available at

http://www.phy.cmich.edu/people/mellinger/teaching/2009Fall_PHY146/Syllabus_PHY146.pdf

- Instructor:** [Dr. Axel Mellinger](#)
Dow 222, Phone: 774-3336 (office) or -2184 (lab)
Email: axel.mellinger@cmich.edu
Office hours: Mo, Tu, Th and Fr. 11:00 AM - 12:00 PM, or by appointment
Communal office hour: We, 10:00 AM - 10:50 AM (Dow 107, subject to classroom availability)
- Time & Location** Mo, Tu, Th, Fr 10:00-10:50 am, Dow 107.
- Text:** [Fundamentals of Physics](#), 8th ed., Halliday, Resnick and Walker (Wiley, 2007).
- Overview:** PHY 146 is the second semester of a year-long sequence intended for science and engineering majors. The course covers topics such as Heat and Thermodynamics, Electricity and Magnetism, Geometric and Wave Optics. The goal of the course is two-fold: to develop a sound conceptual understanding of the principles and to develop the problem-solving tools necessary to apply the principles to practical situations. Lectures will be used to present concepts and to illustrate problem-solving techniques. **The format of the lectures will assume that you have read the relevant material in the text before class and thus have some familiarity with the lecture topics.**
- Homework:** Homework assignments will be administered and completed using the WileyPLUS system (see [below](#)). You will be given 15 personalized assignments, each consisting of up to 15 problems (plus some occasional bonus questions allowing you to earn extra credit). You will submit your solutions to the problems over the Internet (see instructions below). The WileyPLUS system gives you instant feedback, telling you whether your answers are correct. If not, WileyPLUS allows you to try again without penalty, up to a certain limit set for each problem. Diligent students can earn all available homework points. Since each student solves different, but related problems, I encourage you to work together on the assignments. Dow 231 is a comfortable place to do this. Homework points will count for 20% of your final grade.

Exams: There will be five exams (four mid-terms and one final), held on the following dates:

Exam #	Date	Time	Chapters covered	Weight
1	Tuesday, Sept. 15	10:00 - 10:50 am	18-20	15%
2	Tuesday, Oct. 6	10:00 - 10:50 am	21-24	15%
3	Tuesday, Oct. 27	10:00 - 10:50 am	25-28	15%
4	Tuesday, Nov. 17	10:00 - 10:50 am	29-32	15%
Final	Monday, Dec. 7	10:00 - 11:50 am	18-36	20%

The exams will consist of multiple choice/short answer questions and problems. Both quantitative and conceptual questions will be asked. The problems will be similar to problems solved in class or in HW. Each mid-term exam will count for 15%, the final exam for 20% of your final grade.

No make-up exams will be given. If you must miss an exam for a legitimate reason **and you notify me of the situation within two days of the exam date**, I will not count that exam toward your final grade. However, you may miss only one exam during the semester.

Calculators may be used on the exams. You may also bring in one 5"×7" index card to the exam, containing whatever information you choose. **The tests will be aimed at assessing your understanding of physics, not how well you memorize formulas.**

The exams will be challenging. Expect averages between 50 and 70%.

Attendance: While attendance is not mandatory, **I strongly encourage you to attend all lectures** to stay on top of the course. I will randomly (approx. once per week) check attendance using sign-in sheets. As a reward for regular attendance, you can earn a bonus credit of up to 5% of your final grade.

Grades: Your grade will be determined based on total points earned throughout the semester. The exams will contribute 80% of the total possible points (each mid-term: 15%, final: 20%). The HW total will be weighted to equal 20% of the total possible points. The final grades will be determined at the end of the course according to the weighted percentages. Expect a passing level of around 45%. To obtain an A, you will likely need more than 90% of the available points.

WileyPLUS: I am happy to use the WileyPLUS system for this course. WileyPLUS gives you immediate feedback about answers to homework problems, helping you to assess how well you understand a given topic. WileyPLUS also encourages you to make several attempts at solving problems by giving you full credit for a correct answer even if it takes you a few tries to get it. WileyPLUS also provides you with an integrated suite of learning resources, including an on-line version of the text. All this

turns WileyPLUS into a tremendous tool for identifying weak areas in your understanding in a timely way.

WileyPLUS assignments will have completion deadlines as marked in the Course Calendar below. However, to get the full benefit of the WileyPLUS approach, I strongly recommend against waiting until the last minute to do your homework! The best strategy is to use WileyPLUS daily to work on the problems related to that day's lecture. This will keep you current with course material and allow you to recognize gaps in your understanding as soon as possible.

Logging on: You will use the Internet to access WileyPLUS. All you need is an Internet connection and your favorite web-browser. There are hundreds of computers located all over campus you may use. Many of you also have Internet access from your dorm room or apartment. It is your responsibility to obtain an access code (**at the CMU bookstore only**, it comes at no extra cost with the textbook text) and register for the class. **The Wiley representative told me that your account from PHY145 can be re-used without purchasing another key.**

To log on to WileyPLUS, open your web browser and go to the following Internet address:

<http://edugen.wiley.com/edugen/class/cls122561/>

Once registered you can access the full content of the text book, the accompanying resources and complete the homework problems assigned by me. Just go to the class www page and log on using your e-mail as an user ID and a password chosen by you.

Be sure to log out when you finish using WileyPLUS. It is also a good idea to close your browser. If you leave the browser open, the next person using the computer may have access to your account.

Disclaimers: WileyPLUS has been used successfully over the past few years in many Physics Departments and I am confident that it will work fine for this course. However, in the unlikely event that the system fails to perform as planned and homework grades are not available, I will base course grades entirely on the results of the five exams, with the relative weights remaining the same as in the [above table](#).

The deadline for homework is absolute. No excuses will be accepted because of computer crashes or power outages, etc. Remember that homework problems are accepted by WileyPLUS at any time day or night up until the deadline — it is not a good strategy to put your homework off until the last minute!

Blackboard:

I will use Blackboard to post announcements, lecture notes, exam scores and grades. You will be notified via email of any important updates. Therefore, you should **check your CMU email account** (<*your global id*>@cmich.edu) **regularly** (at least once per day).

https://blackboard.cmich.edu/bin/common/course.pl?course_id=_104369_1

Tutors:

Student tutors are normally available Tuesday through Thursday evenings in Dow 231. Hours are typically from 6 until 10 PM.

- Math** Physics is a quantitative science that requires mathematics in fundamental ways. We will use math freely and it is assumed that you have a thorough understanding of algebra and trigonometry. We will also use some calculus over the course of the semester (note that MTH133 is a co-requisite for this course). You should have a calculator for this course and I will assume you know how to use it.
- ADA** CMU provides students with disabilities reasonable accommodation to participate in its educational programs, activities or services. Students with disabilities requiring accommodations to participate in class activities or meet course requirements should contact me as soon as possible.
- Classroom civility:** Each CMU student is encouraged to help create an environment during class that promotes learning, dignity, and mutual respect for everyone. Students who speak at inappropriate times, sleep in class, display inattention, take frequent breaks, interrupt the class by coming to class late or leaving early, engage in loud or distracting behaviors, use cell phones or pagers in class, use inappropriate language, are verbally abusive, display defiance or disrespect to others, or behave aggressively toward others may be asked to leave the class and subjected to disciplinary action.
- Academic Dishonesty** Campus policies concerning Academic Integrity will be **strictly observed** during all exams and quizzes. Any violation of CMU's [Academic Integrity Policy](#) may lead to 0 credits and further disciplinary action.
- Final words:** Physics is not an easy subject for most students. The key to success is to work hard to stay caught up. **Learning in PHY 146 is cumulative** — you need the concepts from the early part of the course to understand what comes later. As a general rule, you can expect to spend at least two hours outside of class – doing homework and reviewing your notes – for every hour of lecture. Remember that some concepts will come easier, some harder, but none will be impossible to understand. **If you experience problems, I urge you to seek help as soon as possible.** I encourage you to see me during office hours, see the tutors in Dow 231 or consult with others in the class.

Class Schedule

AUGUST 2009

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30	31 L5 Ch19:5-6 HW#1 due 3am	July 2009 <table border="1" style="font-size: 8px; border-collapse: collapse;"> <tr><th>S</th><th>M</th><th>T</th><th>W</th><th>Th</th><th>F</th><th>Sa</th></tr> <tr><td></td><td></td><td>1</td><td>2</td><td>3</td><td>4</td><td></td></tr> <tr><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td><td>11</td></tr> <tr><td>12</td><td>13</td><td>14</td><td>15</td><td>16</td><td>17</td><td>18</td></tr> <tr><td>19</td><td>20</td><td>21</td><td>22</td><td>23</td><td>24</td><td>25</td></tr> <tr><td>26</td><td>27</td><td>28</td><td>29</td><td>30</td><td>31</td><td></td></tr> </table>		S	M	T	W	Th	F	Sa			1	2	3	4		5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31		September 2009 <table border="1" style="font-size: 8px; border-collapse: collapse;"> <tr><th>S</th><th>M</th><th>T</th><th>W</th><th>Th</th><th>F</th><th>Sa</th></tr> <tr><td></td><td></td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td></tr> <tr><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td><td>11</td><td>12</td></tr> <tr><td>13</td><td>14</td><td>15</td><td>16</td><td>17</td><td>18</td><td>19</td></tr> <tr><td>20</td><td>21</td><td>22</td><td>23</td><td>24</td><td>25</td><td>26</td></tr> <tr><td>27</td><td>28</td><td>29</td><td>30</td><td></td><td></td><td></td></tr> </table>		S	M	T	W	Th	F	Sa			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30				Notes:
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SEPTEMBER 2009

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6	7 Labor Day No classes HW#2 due 3am	8 L9 Ch20:5-6	9	10 L10 Ch20:7-8	11 L11 Ch21:1-3	12																																																																																																		
13	14 L12 Review HW#3 due 3am	15 Exam 1	16	17 L13 Ch21:4-6	18 L14 Ch22:1-4	19																																																																																																		
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11	12 Columbus Day L26 Ch26:1-3 HW#7 due 3am	13 L27 Ch26:4-6	14	15 L28 Ch26:7-9	16 L29 Ch27:1-4	17																																																																																				
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NOVEMBER 2009

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DECEMBER 2009

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