

PHY 125: Physics for the Life Sciences

University of Wisconsin - La Crosse – Spring Semester 2014

Instructor: Dr. Taviare Hawkins, 2001 Cowley Hall, (608) 785-8447

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Lecture: 9:25 am – 10:50 am, Tuesdays and Thursdays in 100 Cowley Hall

Laboratory Sections: **All sections meet in 214 Cowley Hall on Mondays**

10L, 7:45 am – 9:45 am

11L, 9:55 am – 11:55 am

12L, 12:05 pm – 2:05 pm

13L, 2:10 pm – 4:15 pm

(Please see separate lab syllabus for the specifics.)

Website: Please refer to the course D2L page regularly for messages, postings, and other course related information.

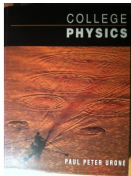



Office Hours: Mondays: 10 -11 am, Tuesdays: 3-4pm & Wednesday: 9-10 am, by appointment or by just stopping in.

Course Description: *Physics for the Life Sciences, PHY125*, covers an introductory study of physics concepts using algebra and trigonometry. The intended audience are the life sciences and allied health majors. In this course, the following topics will be covered: descriptions of matter, motion, energy, waves, light, electricity, and topics in modern physics, with applications to the life sciences. Prerequisite: MTH 150 is strongly recommended.

Learning Objectives: This class is part of the University of Wisconsin - La Crosse vision to cultivate knowledge, skills, and habits of mind essential for independent learning and thinking. When this class is over, you will be able to:

- Construct and use models to analyze, explain, or predict physical phenomena
- Reason logically, creatively, and independently
- Use mathematical and logical methods to solve physics problems

Required Items: **All course material is available at the bookstore.** (Problems will be assigned from both textbooks.)

 <p style="text-align: center;">Main Textbook College Physics by Urone, Brooks/Cole Pub Co (1998) ISBN 0534363679</p>	 <p style="text-align: center;">Supplemental Textbook Introduction to Biological Physics for the Health and Life Sciences by Franklin et al. 1st Edition, Wiley ISBN 978-0-470-66593-0</p>
 <p style="text-align: center;">Scientific calculator</p>	 <p style="text-align: center;">i-Clicker</p>

Responsibilities: As your instructor, my aim is to stimulate your interest in physics by focusing on finding ways to help you learn how to solve physics problems! In this course we will practice physics by being engaged learners.

To be successful in this course, a student should prepare for class by:

- **Read the syllabus.** You are responsible for all the requirements and procedures described here in. The syllabus is our contract. Should there be an update made to the syllabus, it will be posted on D2L and announced in class.
- **Attend lecture and lab.** Attendance is required at both lecture and lab. You should **prepare** by doing the assigned readings before attending lecture. You should complete your homework assignments in a timely manner. And should you have any questions over the material, you should ask them, as soon as possible.
- **Stay up to date on the assignments.** Physics is a **challenging** subject that requires your dedicated attention. It rewards you with a skill set you can apply to any discipline.
- Physics is **cumulative**. For example understanding chapter 8 requires that you understand all of the chapters before it. You should try not fall behind! If you should fall behind, **seek help immediately.**
- Physics is written and spoken in a **mathematical** language. So please review your basic math skills NOW.
- Physics is about understanding **relationships** between physical quantities, which we uncover by mathematical reasoning, and experiments.
- Physics is **not about formulas** and merely plugging-in numbers. Formulas are often only a special case of those expressions. Knowing a formula without knowing when to apply it is generally useless. The act of plugging in numbers measures your ability to do arithmetic. The results are only usefully when you can interpret them physically.

You can understand and succeed at physics only if you can put in the required work! “Physics is a “Science,” learning how to solve physics problems is an “Art” which requires lots [and lots] of practice”.

3-Exams: Exams will be given in Cowley 100 and during the regularly scheduled course times. Bring 2 writing instruments and a calculator to all exams. There will be 3 in-class midterms (**February 20th**, **March 27th**, and **April 24th**, **all Thursdays**).

Final Exam: The final exam will be given in Cowley 100 on **Tuesday, May 13th** from **7:45 am to 9:45 am**.

Exams will consist of:

- 5 multiple choice problems; some of which may be conceptual
- 3 short calculation problems
- 1 short explanation of a physics concept, and
- 1 longer, multi-step, calculations.

You must show all of your work for full credit. The exam material may be drawn from material covered in lecture, the text, and in lab. I will provide you with a copy of the exam’s equation sheet by posting it on D2L a week before the test. Exam grades will be posted on

the course D2L webpage and the graded exams will be returned within 2-weeks of the exam date.

Homework: Homework will be assigned weekly but not collected or graded. You are encouraged to do the homework assignments in a timely manner, as they will help you in preparation for the exams and quizzes. The best way to learn physics is by working with a buddy. I encourage you to work in groups. It makes the study process more enjoyable and you will learn a lot through your discussions. Solutions will also be posted on D2L.

Homework Quizzes: In-class quizzes will be given within the first 20 minutes of class and will cover material from the most recently assigned homework set. The quiz dates will be every Thursday except for exam days, unless otherwise announced. Since these quizzes will be given during class times, no make-ups will be given. If you come late to the quiz, you will still only be allotted the remainder of the 20 minutes to complete the quiz, so please plan accordingly.

Pre-class Quizzes: Before each scheduled class meeting time, there will be an online pre-class quiz. These quizzes will focus on the material contained in the reading assignment due on that date. The quizzes are due by 9 am before the scheduled class meets. You will have two attempts at the quiz with the maximum score being recorded. There will not be any makeups given for any missed quizzes so plan accordingly. The lowest 2 scored quizzes will be dropped from your grade.

i-Clicker: During each lecture, questions will be asked which you will need to use the i-Clicker. The clicker must be registered to you and will be counted towards your Clicker points. So the device cannot be shared. Although attendance is not mandatory, you cannot participate if you do not attend class. You are required to answer 75% of the questions correctly to receive 100% of the points for clicker participation.

Grading: Weights for the various components of the course will be as follows:

- 20% Laboratory Grade (*Note: You cannot pass the course without at least C-grade in the laboratory portion of the course*)
- 3% Clicker Participation
- 10% Pre-class Quizzes
- 15% Quizzes
- 39% Total for 3-Midterm Exams, each worth 13% (85 minutes each)
- 13% Final Exam (120 minutes)

Grading Scale will be **approximately** as follows:

- 100–94 A; 93–88 A/B; 87–82 B; 81–76 B/C; 75–68 C; 68–58 D and below F.
- Depending on the grade distribution, the grade boundaries may be lowered slightly.
You will not receive a grade lower than that indicated above.

Note: Should you wish to contest a grade, return the assignment along with a written explanation of why you feel that there was an error made in the grading. If in the re-grading of an assignment an additional mistake is discovered, you may end up losing or gaining more

points. When an assignment is resubmitted for re-grading, the entire assignment may also be subjected to a re-grading. Your assignment and the written request must be turned in within one week of having the assignment returned to you.

Physics Help: Available in the Learning Center: 251 Murphy Library. The tutors are our advanced physics majors and are typically available from 2 – 9 pm Sundays through Thursdays. We will have a couple of time slots with tutors trained in the PHY 125 problems. Details of the Fall 2013 tutoring schedule will be posted on D2L as soon as it becomes available.

Excused Absences and Makeup Information: Written documentation is required to evaluate the possibility of being excused from an exam.

- Examples of excused absences: a death in your immediate family, car accident, serious or highly contagious illness and student sport participation.
- A student with an exam missed because of an excused absence will have the final exam count the missed exam (13%) and that of the final exam (13%) for a total of (26%) of their final grade.
- For any pre-scheduled absence (i.e. University athletic team competitions, concerts, etc.) exams *must* be taken before the date of the absence. The instructor must be notified of all such absences at least 2 weeks in advance of the exam. *No Exceptions.* These exams will contain different problems from the in-class exams and will be graded according to the instructor's prerogative. The instructor reserves the right to schedule specific times for make-up exams.

Special needs: Any student with a documented disability (e.g. physical, learning, psychiatric, vision, or hearing) who needs to arrange reasonable accommodations must contact the instructor and the Disability Resource Services Office (165 Murphy Library, 785-6900) at the beginning of the semester. Students currently using the Disability Resource Services office will have a copy of a contract that verifies that they are a qualified student with a disability. It is your responsibility to communicate your needs with the instructor in a timely manner.

Religious Observances: Students may complete exams or other requirements that are missed because of a religious observance provided arrangements are made within the first two weeks of class.

Academic Standards: The academic conduct and discipline procedures outlined in Chapter 14 of the University of Wisconsin- La Crosse Student Handbook will be followed. You are responsible for being familiar with these. Students are welcome to work together, exchange ideas, etc. However, EACH STUDENT MUST DO HIS/HER OWN WORK AND THEIR OWN CALCULATIONS. Copying someone else's work for submission purposes is cheating and will be handled accordingly.

Other Electronic Devices: Use of cell phones, pagers, messaging PDAs, or other wireless communication devices (including laptops for e-mail, web-browsing etc.) is not permitted at anytime during class or exams. Be considerate of your fellow students and conduct your e-business elsewhere.

Extended Absences: If you are going to be absent for an extended period of time, you should contact the Student Life Office at 149 Graff Main Hall, 785-8062 and notify them of your absence. Then contact me about making up the missed material, and be prepared with the appropriate documentation.