

Physics 203

College Physics I

Spring 2024

Lecture MTR 4:00-4:50 A113 SCI

Lab : B104 SCI

Sec 1: W 9-11:50 – Dr. Zamfir
Sec 2: R 9-11:50 – Dr. Menningen

Discussion

Sec 1: T 11-11:50 A112 SCI
Sec 2: T 9- 9:50 A112 SCI

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Office Hours:
M,W, F 10-11 B224 SCI
TR 10-11 B107 SCI
When door is open, Random Drop By
By Zoom or By Appointment

Text

“Physics” by James Walker 5^d Edition available at the bookstore for rental
Handouts during class and lab will be posted on Canvas.

Contents:

Briefly we will study motion in one and two dimensions, forces, energy, momentum, rotational motion, oscillations, waves, and fluids.

Learning Outcomes

Ideas will be presented both mathematically and conceptually in lecture and laboratory. During the semester there will be three main goals:

1. Make a connection between the conceptual, mathematical, and experimental aspects of physics. This means you will be able to:
 - Interpret concepts in multiple representations (i.e. words, diagrams, graphs, equations, etc.)
 - Solve problems using numbers and variables.
 - Explain how and why a concept applies to a specific situation or problem.
 - Design simple experiments and prove they work.
 - Analyze and interpret data taken from experiments.
2. Become a better problem solver. This means you will be able to:
 - Describe and analyze problems both qualitatively and quantitatively in various representations (words, diagram, graphs, equations, etc.)
 - Correctly apply appropriate principles and concepts to a problem
 1. Construct solutions by solving successive sub-problems.
 - Check solutions for nonsense answers and make an appropriate statement of answer.
3. Connect how physics applies to everyday life. This means you will be able to:
 - Explain how physics applies to the body, scientific instruments, and medical instruments.
 - Describe how the concepts of physics apply to common devices.

My Teaching Philosophy

I think the college classroom should reflect basketball practice. Mentally picture what basketball practice looks like. What do you see? Its active, people are moving around and doing things. Players don't spend 100% of their time watching their coach draw diagrams on the chalkboard then go on the floor and walk through the plays. The players spend a good portion of their time working on the skills with each other and analyzing game situations. That is what I want us to do, work on our skills and analysis abilities during class *with each other*. Will we eliminate the lecture? No, but I hope to reduce the amount of time in that mode so we can practice and ask questions. (If basketball doesn't work for you, substitute learning a musical instrument, you don't learn by just watching a teacher).

Because of my teaching philosophy, you will be getting a handout nearly every day in class. It is suggested you get a folder or a three ring binder and a 3-hole punch. While we practice these, my expectation is that every student gives an honest good faith effort while time is given during class. At times, these may be collected and graded on an effort basis. These scores will be included as a part of homework score.

Grading

Homework	20 % of total grade
Four Exams	60 % of total grade
Labs	20 % of total grade
Total	100%

Grading Scale as a Percentage of Total Points

A	93-100
A-	90-92.9
B+	87-89.9
B	83-86.9
B-	80-82.9
C+	77-79.9
C	73-76.9
C-	70-72.9
D	60-69.9
F	00-59.9

Examinations

Four examinations will be given during the semester. The first three exam will be given during the lab period, and you will have 2 hours to complete each one. . The fourth exam will be given during the final examination period. Part of the final exam will be cumulative, and part will only test on the last segment of the course. Each exam will be worth 100 points. Missing an exam will earn a grade of 0 (zero).

Homework

1. **The Wonderful World of Physney** - Usually, there will be some type of hand-in problem based on a movie clip from an animated movie. Our goal will be to determine what type of world the animated characters live in. Sometimes they will be open ended and at other times, you will be given guidance on how to explore these clips, but it will relate to the current topic we are studying.
2. **Reality Check(s)** - There will be one original non-book problem assigned as homework and will be of moderate difficulty. The Reality Checks are written based on everyday applications observed by your instructor. .
3. **Ungraded/Suggested Homework** – Each chapter, suggested homework problems and their solutions are posted on Canvas. These problems should prepare you to complete the Physney and Graded Homework. There are also example problems posted on Canvas for posted on Canvas.
4. **Late Homework Policy: Each class period that hand-in type homework is late, 20% of your grade is lost. This deduction is at the discretion of the instructor. After an exam is given, not homework will be accepted that was assigned before that exam. .**

Laboratory

Labs are usually done in groups of two or four. The focus of some of the labs is mostly concept development with a small focus on actual measurements, while other labs are purely experimental with the goal of measuring a particular parameter.

Each lab is graded out of 10 points:

- 7 points - group work (group responsibility)
- 3 points – individual quiz (personal responsibility)

Attendance: Attendance will not be kept. Attendance is not required for lecture or discussion, but **attendance is required every time that you will be graded. That means you must attend all examinations and all laboratory periods.** Make up work will only be accepted for excused absences. Excused absences include a death in the immediate family, an illness with a note from a doctor, PA, NP, or Health Services, a conflict with religious observances, or an event where you officially represent the University of Wisconsin – Stevens Point (i.e. sporting events, artistic events) and the event directly conflicts with the test or lab. **All excused absences must be approved before the day missed.** All unexcused absences will automatically earn a grade of zero (0).

In accordance with the University of Wisconsin policy, any potential conflict between class work and religious observances must be made known to the instructor within the first two weeks of class. The student must notify the instructor of the specific days and

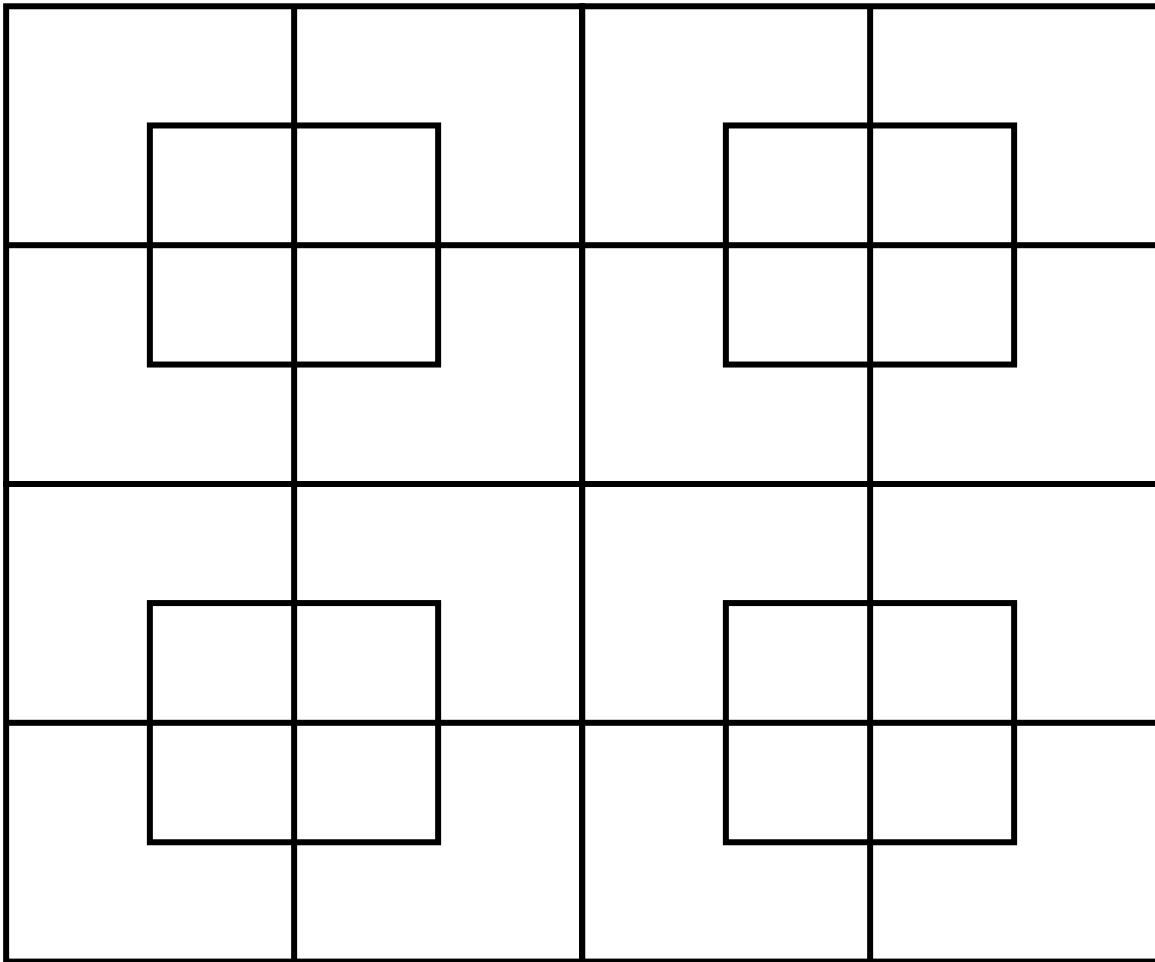
dates of specific religious observances for which the student seeks relief from academic requirements.

“(Physics) Success is 1% inspiration, 98% perspiration, and 2% attention to detail.”
Phil's-osphy, by Phil Dunphey

Tentative Schedule

Week	Date	Topic	Lab
1	1/22	Ch. 2 One Dimensional Motion	0. No Lab
2	1/29	Ch. 2 1D Motion	1. Constant Motions
3	2/5	Ch. 3 Vectors, Ch. 4 2D Motion	2. Measuring Acceleration
4	2/12	Ch. 4 2D Motion	3. 2D Motion –Graphical and Numeric
5	2/19	Ch. 5 Newton’s Laws	Test 1 Feb 21/22 in Lab
6	2/26	Ch. 6 Applications of Newton’s Laws	4. Bungee Barbie
7	3/4	Ch. 11 Torque	5. Drag and Electrophoresis
8	3/11	Ch. 11 Equilibrium	6. Winter Wonderland
9	3/25	Ch. 7 Work and Kinetic Energy	Test 2 March 27/28 in Lab
10	4/1	Ch. 8 Potential Energy and Conservation of Energy	7. Work by Pulley
11	4/8	Ch. 15 Fluids	8. Inclined Plane
12	4/15	Ch. 15 Fluids	9. Ideas of Fluid Flow
13	4/22	Ch. 13 Oscillations	Test 3 April 24/25 in Lab
14	4/29	Ch. 14 Waves and Sound	10. Stringed Instruments
15	5/6	Ch. 14 Waves and Sound	

Final Exam Tuesday, May 16th 17:00-19:00



Squares

Net Force

Jars

Monte Hall