Physics 201
Applied Principles of Physics I
Spring 2021

Lecture: Asynchrones Online via Canvas
Discussion: Asynchrones Online via Canvas
Lab: Asynchrones Online via Canvas and Pivot Interactive Web site

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Office Hours
Office Hours will be via Zoom. Use the following link for all office hours or anytime we meet via Zoom.

https://uwsp.zoom.us/j/99652668535?pwd=eVNaNjhxZUtjRUFmTm5PeWFkSEVFZz09
Meeting ID: 996 5266 8535
Passcode: 546109

Monday 1-2:45
Tuesday 9:30 -11:00
Wednesday 1-2:45
Thursday 11:00 -12:45
Friday 10-12
Always by appointment made via email.

Text
"Physics" by James Walker 5th Edition available at the bookstore for rental
Except for the text book, most items will be available on Canvas and Pivot Interactive Web site for lab.

Contents:
Briefly we will study, motion in one and two dimensions, forces, energy, rotational motion, density, and fluids

Learning Outcomes
Ideas will be presented both mathematically and conceptually in lecture and the 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 a 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
   - Construct solutions by solving successive sub-problems.
   - Check solutions for non-sense answers and make an appropriate statement of answer.

3. Appreciate how physics applies to everyday life. This means you will be able to:
   - Explain how physics applies to the body, scientific instruments, and within your Natural Resources Major.
   - 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	16.6% of total grade
Four Exams	66.6% of total grade
Labs	16.6% of total grade

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. Three exams will give during the semester. You will have a 24-hour period in which to complete a 1-hour exam. Distribution and collection of examination questions and materials will be via Canvas. The fourth exam will be given during the final examination period. Each exam will be worth 100 points. Missing an exam will earn a grade of 0 (zero). The exams will open book, open notes. All work presented on the exam must come from the person taking the test without any help. I write all my own questions, so using Chegg will not be useful to find the solution (how you get to the final answer) or the final answer.

Homework

Homework will most likely come in two parts. 1.) conceptual multiple-choice questions will be posted on Canvas in quiz like format. These are to be done as you are viewing or have just viewed the videos of the lecture, so it gives you an opportunity to practice as you are learning. You will have multiple attempts for each problem. 2.) numerical homework questions which will be problems assigned out of the book. I will randomly choose 3-4 problems to grade. Problems will be submitted via Canvas as an upload. At the end of the semester the homework will be scaled to 100points (i.e. the percentage of total points earned). It is assumed that you should get a high overall score for homework. Remember total homework in the course is equivalent to one test, so make sure you do it.

Laboratory

Most laboratory will be done with the help of videos on the Pivot Interactive web site. Pivot Interactive has a nice set of videos and measurement tools that allow you to take time and position measurement. It also allows graphing and linear regression (curve fitting) capabilities. Some weeks we may view homemade video. Each lab will be graded on a 20 point scale.

Attendance: Attendance will not be kept. Attendance is not required for lecture or discussion, but **attendance is required when examinations are given. 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 with appropriate documenting materials.** All unexcused absences will automatically earn a grade of zero (0).

Religious Observances: 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.

Equal Access for Students with Disabilities: UW-Stevens Point will modify academic program requirements as necessary to ensure that they do not discriminate against qualified applicants or students with disabilities. The modifications should not affect the substance of educational programs or compromise academic standards; nor should they intrude upon academic freedom. Examinations or other procedures used for evaluating students' academic achievements may be adapted. The results of such evaluation must demonstrate the student's achievement in the academic activity, rather than describe the disability.

If modifications are required due to a disability, please inform students to contact the Disability and Assistive Technology Center (715-346-3365 / Room 609 ALB) to complete an Accommodations Request form.

Academic Honesty: Students are expected to maintain the highest standards of academic integrity. More information on your rights and responsibilities are available at: http://docs.legis.wisconsin.gov/code/admin_code/uws/14.pdf

UWSP 14.01 Statement of principles
The board of regents, administrators, faculty, academic staff and students of the University of Wisconsin system believe that academic honesty and integrity are fundamental to the mission of higher education and of the University of Wisconsin system. The university has a responsibility to promote academic honesty and integrity and to develop procedures to deal effectively with instances of academic dishonesty. Students are responsible for the honest completion and representation of their work, for the appropriate citation of sources, and for respect of others' academic endeavors.
UWSP 14.03 Academic misconduct subject to disciplinary action.
Academic misconduct is an act in which a student:
(a) Seeks to claim credit for the work or efforts of another without authorization or citation;
(b) Uses unauthorized materials or fabricated data in any academic exercise;
(c) Forges or falsifies academic documents or records;

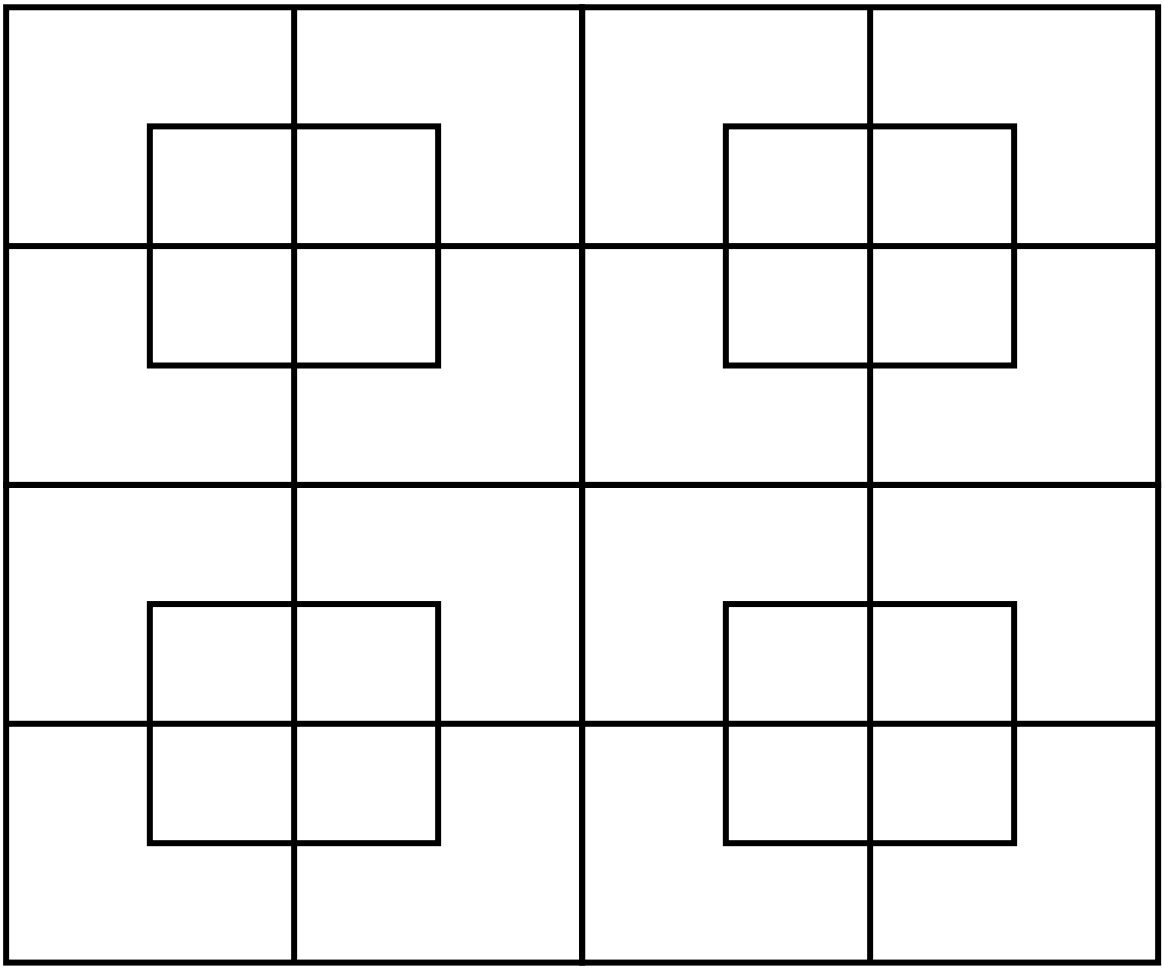
(d) Intentionally impedes or damages the academic work of others;
(e) Engages in conduct aimed at making false representation of a student's academic performance; or
(f) Assists other students in any of these acts.

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

Tentative Schedule

Week	Date	Topic	Lab (Topics0
1	1/25	Ch. 1 and 2 Units and Conversions: One Dimensional Motion	No Lab
2	2/1	Ch. 2 1D Motion, constant velocity and Constant Acceleration	Graphing Motion, Slopes Meanings, and Meaning of Positive and Negative Velocity and Acceleration
3	2/08	Ch. 2 Free Fall	Measuring Acceleration
4	2/15	Ch. 3 Vector addition: Graphical method Ch. 3 Vector addition: Components method	**Test 1 This week /** Short Lab?
5	2/22	Ch. 5 Force, Net force Ch. 5 Newton's 1st law, Newton's 2nd law	Vector Addition, Graphical and Numerical
6	3/01	Ch. 5 Newton's 3rd law, mass, Free body diagrams Ch. 5 Normal force, Apparent weight	Bungee Barbie – Which Force is Larger and Why?
7	3/08	Ch. 6 Inclined planes Ch. 6 Kinetic friction, Static friction	Drag Forces in Liquids
8	3/15	Ch. 6 Static friction contd. Ch. 6 Circular motion	**Test 2 This week** / Short Lab?
9	3/29	Ch. 7 Circular motion, contd. Ch. 7 Work, Kinetic energy	Forces, Acceleration, and Mass
10	4/05	Ch. 7 Kinetic energy examples, Power Ch. 8 Gravitational potential energy	Work by a Force and Kinetic Energy
11	4/12	Ch. 8 Potential energy Ch. 8 Conservation of mechanical energy	Conservation of Energy/Power Calculations
12	4/19	Ch. 15 Fluids: density, pressure	**Test 3 this week /** Short lab **?**
13	4/26	Ch. 15 Change of pressure with height Ch. 15 Archimedes' principle, buoyancy	Archimedes
14	5/03	Ch. 15 Archimedes' principle examples Ch. 15) Fluid flow, continuity	Ideas of Fluid Flow / Bernoulli Principles
15	5/10	Ch. 15 Bernoulli's equation, examples	No Lab

Final Exam: Week of May 17-20 (Day of Test TBA)



Squares

Net Force

Jars

Monte Hall