

Instructor: Dr. Warren Christensen
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Class: MWF 9-10:45am in HILL 130/2

Coffee Hours: TBD

Office Hours: Office meeting times will *happily* be arranged by contacting me via phone or email (both given above). Learning Assistants will also hold office hours, times *TBD*.

Learning Goals of lecture and tutorial components:

- To develop the ability to discuss your thinking with your peers and your instructors in and out of class
- To use conceptual tools, such as free-body diagrams, in a variety of circumstances as a tool for correctly framing a physical situation
- To approach, solve, and understand a wide variety of physics problems with and without numerical solutions
- To develop *conceptual understanding* alongside problem solving skills

Brief Outline: We will begin with a study of linear motion and mechanics (forces, masses and acceleration). We will learn that conservation laws (e.g. energy and momentum) provide a wonderful and powerful alternative for understanding physics and solving problems. We will continue with applications and extensions of these fundamentals, including gravitation, rotational motion, statics, and fluids. We will finish up the semester with a look at principals and limitations of energy transfers in the context of thermodynamics.

Assignments and grading:

- 15% – Prelectures & Checkpoints: Approximately two Prelectures and Checkpoints will be assigned per week. Each is due by 6:00am, before class on the date due. They are to be completed online on the link provided via blackboard.
- 15% – Tutorial Homework: Tutorial homework will be assigned as appropriate. The homework associated with the tutorial reinforces and extends the material covered in the worksheets and in lecture. The tutorial homework handouts will be posted in the Blackboard.
- 25% – Homework: Assignments will be completed online using FlipItPhysics. 18% of your total grade will be determined by the correct answers you provide on FlipItPhysics. The remaining 7% will be determined by the worked out problems that you hand-in.
- 45% – Exams: There will be three unit exams worth 30% of your final grade. The lowest unit exam score will be dropped from the three; however no makeup exams will be allowed. The cumulative final exam is on Monday Dec 12th @ 8:00 am and is worth 15% of your total grade.

Final Grades:

Your final grade will be based on your total score as described above. If you earn one of the percentages shown below, you will receive the grade written on its right.

> 89.5%:	A
89.4% > 79.5%:	B
79.4% > 69.5%:	C
69.4% > 59.5%:	D
59.4% > 0% :	F

Materials:

Smartphysics Access Card
Any Calculus-based Physics Textbook
Voting Paper – Bring to class everyday
Scientific calculator (Simple ~ \$10 calculator is fine)

How can I succeed in this class? (the most important thing to read)

Being "good" at physics comes with practice. You should expect to spend **two hours outside of class for every hour inside class**. I know many courses say that, but I mean it. Homework problems often involve two steps: deciding which *principles* of physics apply to the problem, and then determining the answer (which may involve calculations.) I encourage you to talk about these solutions with your friends. The most important thing to talk about is not which number to put where (the calculation is the easy part), but the reasoning that helps you decide what to do with the numbers. Please, get help *early* if you are struggling with any aspect of the course.

Using BlackBoard

Go to: <http://bb.ndsu.nodak.edu>

Blackboard account information:

- Your Blackboard User ID is the same as your NDSU Electronic ID.
- Your default Blackboard password is your NDSU e-mail password.

From now on, after you log in, do the following:

Click on the “**Courses**” tab at the top.

Then click on “**171-NDSU-25654: University Physics I**” to access the course website.

Blackboard will be used primarily for course announcements, sharing links for videos, and posting grades.

Using Prelectures and Checkpoints and Homework

To access Prelectures and Checkpoints:

Go to <http://flipitphysics.com>. Enter your access card number and information. Please spell your name and Student ID number correctly!

Course Access key is “Learning”. (heck yeah!)

Academic Dishonesty:

Academic dishonesty is unacceptable and may result in automatic failure. All work in this course must be completed in a manner consistent with NDSU University Senate Policy, Section 335: Code of Academic Responsibility and Conduct. (<http://www.ndsu.nodak.edu/policy/335.htm>)

Disabilities:

Any students with disabilities or other special needs who need special accommodations in this course are invited to share these concerns with the instructor as soon as possible.

***Please note that the statements in this syllabus are subject to change as the semester progresses. Any changes will be announced in class and posted on the Blackboard course page. Even if you are not present in class for a particular announcement, you are still responsible for knowing about any changes that may occur.