

Instructor: Dr. Warren Christensen
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Learning Assistant: TBD

Email:

Class: MWF 10-11 am and Wed 9-10a in HILL 300

Coffee Hours by Warren in Union Atrium: Mon 1-2p, Wed 2-4p, Friday 11-Noon

Coffee Hours by LA in Union Atrium:

Office Hours: Office meeting times will *happily* be arranged by contacting me via phone or email (both given above).

Learning Goals:

- 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
- To engage in reading and discussion of a text about the development of mathematics and physics

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:

- 10% – Book Club Assignments. Responding to prompts and providing reflections for all the 5 book club meetings (2% for each) will earn you this credit.
- 45% – Homework Problems. These will be assigned and due daily. We estimate roughly 40 assignments. PDF scans of your homeworks will be submitted through Blackboard. They will be graded either as “Meets” or “Does not meet” Expectations. For any assignment that doesn’t meet expectations, you will have 1 week to come to coffee hours and give me a chance to work with you to understand the content. Doing so will change your score to Meets Expectation.
- 45% – Exams: There will be three unit exams, each worth 15% of your final grade. Exams will take place on Wednesday, with the first hour being an individual

exam and the second hour being a group exam. Your exam score will be an average of the two scores. The final exam is cumulative and can replace your lowest exam score.

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:

Any Calculus-based Physics Textbook (recommended not required)

A copy of Hidden Figures by Margot Lee Shetterly

Voting Paper – Bring to class everyday (if you're in class)

Scientific calculator

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**. 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. Come talk to me early and often *early* if you are struggling with any aspect of the course.

Using BlackBoard

Go to: <https://blackboard.ndus.edu/ultra/institution-page>

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.

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

Using Flip.com

Using the link: <https://flip.com/phys251> we want you to create a Flip.com account using your NDSU Microsoft account. This is how you will receive feedback on your homework assignments. Due to the number of students and the time it takes, most feedback will be for those folks that did not meet expectations. However, sometimes your work might “meets expectation” but I’ll still have some feedback for you, so you’ll want to check in often.

Attendance Expectations

Please **do not come to class** if

- you are feeling ill, particularly if you are experiencing COVID-19 symptoms, or
- you are infected during your five-day isolation period.

You will still need to complete the assignments, exams, reading, etc. necessary to meet class learning objectives. You can complete missed work by arranging with me.

If you were exposed to COVID-19, please follow CDC guidance available [here](#).

If you tested positive for COVID-19, please follow CDC guidance available [here](#).

Free testing kits can be picked up at the NDSU Bookstore, Library or Student Health Service. Rapid and PCR testing is available at the Student Health Service by appointment Monday through Friday during regular business hours for both symptomatic and asymptomatic students.

If public health conditions and directives from NDSU administration change, I will let you know in writing the expectations for our class moving forward.

Veteran Status and Student Service Members

Veterans and student service members with special circumstances or who are activated are encouraged to notify Dr. Christensen as soon as possible and are encouraged to provide Activation Orders.

Americans with Disabilities Act for Students with Special Needs

Any students with disabilities or other special needs, who need special accommodations in this course, are invited to share these concerns or requests with Dr. Christensen and contact the [Disability Services Office \(www.ndsu.edu/disabilityservices\)](http://www.ndsu.edu/disabilityservices) as soon as possible.

Academic Honesty

The academic community is operated on the basis of honesty, integrity, and fair play. [NDSU Policy 335: Code of Academic Responsibility and Conduct](#) applies to cases in

which cheating, plagiarism, or other academic misconduct have occurred in an instructional context. Students found guilty of academic misconduct are subject to penalties, up to and possibly including suspension and/or expulsion. Student academic misconduct records are maintained by the [Office of Registration and Records](#). Informational resources about academic honesty for students can be found at www.ndsu.edu/academichonesty.

Family Educational Rights and Privacy Act (FERPA) Statement

Your personally identifiable information and educational records as they relate to this course are subject to [FERPA](#).

Additional Resources for Students

As a member of the NDSU community, resources are available for you should you need help in dealing with adverse reactions to things happening in the world today. A variety of resources are listed below:

For students on campus and remotely (telehealth):

Counseling Services: 701-231-7671; <https://www.ndsu.edu/counseling/>

Disability Services: 701-231-8463; <https://www.ndsu.edu/disabilityservices/>

Student Health Service: 701-231-7331; <https://www.ndsu.edu/studenthealthservice/>

Dean of Students Office: 701-231-7701; <https://www.ndsu.edu/deanofstudents/>

For tutoring and academic support:

ACE Tutoring: 701.231.5554; <https://www.ndsu.edu/ace/>

TRIO Student Support Services: 701-231-8028; <https://www.ndsu.edu/trioss/about/>

In a crisis or emergency situation:

Call University Police: 701-231-8998

Call 9-1-1

For physical health crises: Go to a Hospital Emergency Room

For mental health crises: Go to Prairie St. Johns for a Needs Assessment: 701-476-7216 (510 4th St. S.)

Call the FirstLink Help Line: 1-800-273- TALK (8255) or 2-1-1

Call Rape and Abuse Crisis Center: 701-293-7273

***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.