

# UNIVERSITY PHYSICS II (PHYS 252) COURSE SYLLABUS

North Dakota State University, Summer 2018

## I. Course Information & Description

**Course Title:** University Physics II; **Course Prefix & Catalog Number:** PHYS 252; **Credits:** 4; **Meeting Times & Locations:** MTWR 11:00AM-12:50PM, MINARD 220; **Prerequisites:** PHYS 251 or ME 222, MATH 166 (this can be corequisite)

This course is the second semester of calculus based introductory physics. According to the NDSU course bulletin we will be studying:

“Electric charge, field, potential, and current; magnetic field; capacitance; resistance; inductance; RC, RL, LC and RLC circuits; waves; optics.”

## II. Instructor Information

**Instructor:** Brian Farlow; **Email:** [brian.farlow@ndsu.edu](mailto:brian.farlow@ndsu.edu); **Phone:** (701) 231-8977 (This is not the best way to contact me. Please use email); **Office:** South Engineering 216B; **Office Hours:** MTWR 10:00am-10:50am, or by appointment

## III. Course Materials

- Recommended Textbook: Fundamentals of Physics 10th Edition by Halliday & Resnick ISBN: 978-1-118-23071-8 (Hardcover) 978-1-118-54787-8 (Digital)
- Subscription to FlipIt Physics; [www.flipitphysics.com](http://www.flipitphysics.com). Select the “Electricity and Magnetism” portion of “University Physics”. Use Course access key Phys252NDSU (case sensitive)
- Scientific or graphing calculator. A phone or tablet app is not sufficient. Any device with internet access will not be allowed on assessments.
- Paper. You may use lined, copy paper, or engineering paper. Just have a supply with you and at the ready.
- Multiple choice card. This will be provided by me but you must bring it with you to class daily.

## IV. Course Goals and Learner Outcomes

There are two big picture goals I'd like to accomplish in this class. These loosely describe what I hope to aid you in as your instructor as well as what you should be shooting for as a student:

- Students will gain the pertinent background knowledge necessary to succeed in further physics, engineering, or other science coursework.
- Students will be able to apply the principles and mathematical models of electromagnetism, waves, and optics as they are understood in classical physics to real-world situations.

Here is a sampling of the learner outcomes for this course. With these skills and abilities you will be able to demonstrate that you've met the goals just described. Notice they are scaled to cover knowledge of necessary factual information, the ability to explain the relevant concepts, and apply the knowledge and concepts to real-world situations. Thus, it will be insufficient for you to simply memorize information and problem solving processes. I will be as transparent as possible in sharing more learner outcomes with you as they become relevant.

- Define electric charge, electric force, and electric field.
- Compare and contrast Coulomb's law with Newton's law of universal gravitation.
- Calculate the net force on a given charge due to multiple other charges using Coulomb's law and the superposition principle.

## V. Evaluation Procedures and Criteria

Your grade will be a weighted average based on your lecture averages. The grading categories learning activities, homework grade, mid-term exams and quizzes, and your final exam. These will be weighted as follows:

- Learning Activities Grade (10%) –Activities necessary for preparing for lecture. These materials will be found on FlipIt Physics. They will be scored for participation.
- Homework (25%) – homework is arguably the essential piece in helping you learn how to apply your knowledge. Homework assignments will be problem based and submitted online through FlipIt Physics. Grading will be for correctness, but you will have up to 99 submission opportunities before the deadlines.
- Mid-term Exams (30%) - There will be 2 midterm exams. The first will cover FlipIt Physics sections “Electricity” and “DC Circuits” and will be on June 28. The second will cover FlipIt Physics section “Magnetism” and will be on July 12. Format will consist of 3-4 open-ended conceptual questions and 3-4 quantitative problems.
- Quizzes (15%) – There will be frequent and brief quizzes (in an 8-week term, possibly 2 per week). They will usually take the form of 1-2 short-answer or open ended responses, and 1 quantitative problem.
- Final Exam (20%) – A comprehensive final exam, but will have more content specifically from the “AC Circuits” and “Light and Optics” sections. Will occur during the week of July 30.
- Grading Scale:

A	B	C	D	F
>90.0	80.0-89.9	70.0-79.9	60.0-69.9	<60.0

\*all numerical values given as percentages

## VI. Attendance

Attendance will not be taken and will not directly affect grading. However there will be numerous in-class activities that will impact your grade, as well as frequent quizzes, for which you must be present to earn any credit. It is not to your benefit to miss class.

You should come to class everyday having completed all required out-of-class instructional materials posted to Blackboard or scheduled on FlipIt Physics, including the associated quizzes. Bring any notes and/or work done for those materials with you. In class make sure you have sufficient paper, writing utensils, and a calculator because we will be doing a fair amount of problem solving. Also be sure to bring your provided multiple choice answer card with you every day.

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

## VII. Calendar

Important, University-set Dates:

Drop/Add Deadline: June 15

Requests for Pass/Fail: June 20

Holiday: July 4

Withdraw with W: July 18

Final Grades Posted: August 7 (late evening, so the NDSU website says)

## VIII. Accommodations

Any students with disabilities or other special needs, who need special accommodations in this course are invited to share these concerns or requests with the instructor and contact the Disability Services Office as soon as possible.

## IX. 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 and instructional staff members can be found at [www.ndsu.edu/academichonesty](http://www.ndsu.edu/academichonesty).