

1 Course Description:

The second semester of calculus based introductory physics. Per the NDSU bulletin, we will be studying:

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

Prerequisites: PHYS 251 or ME 222

Corequisites: MATH 166

Credit Hours: 4

2 Instructor Information:

Instructor: Nekeisha Johnson

Email: nekeisha.johnson@ndsu.edu

Office: South Engineering 318C (or digitally, link provided on Blackboard)

Office Hours: TBD - I will release a poll on the first day of classes - or by appointment

3 Course Materials:

Text(s): [University Physics: Volume II](#) and [University Physics: Volume III](#)

These books are available for free online at openstax.org, and are linked above. We will be covering chapters 5-16 of Volume II, and chapters 1-4 of Volume III. We'll be going fast, but I will allow you to set your own pace as much as I can.

We will also be using Blackboard for this course. I will post everything else that I provide on Blackboard to keep it all contained in one place for you - I will also make announcements most mornings via the Blackboard announcement function.

4 Course Goals and Learning Objectives:

There is one big goal that I have for you during this course. That is:

1. To integrate and apply principles of electricity and magnetism (charge, field, potential, current, circuits, waves, etc.) to solve conceptual and practical problems.

Learning outcomes will be presented as we move through the course, however some examples of these outcomes may be:

1. Explain qualitatively the force electric charge creates
2. Solve for the electric field based on a changing magnetic flux in time

5 Evaluation Procedures and Criteria:

I will be using a points-based, approach to grading this course. A total of 140,000 points will be available during the course. Earn points to reach your final goal! Final grades will be as follows:

A	110,000+
B	100,000 - 109,999
C	80,000 - 99,999
D	50,000 - 79,999
F	0 - 49,999

Points will be available in the following ways:

Quizzes	64,000
Tests	48,000
Checkpoints	24,000
Introduction	2,000
Course Reflection	2,000

No points will be awarded for work submitted after the final course deadline - for this course that is Friday, August 6th, at 11:59 pm!

- **Quizzes:** 16 at 4,000 each = 64,000 pts

You may notice that homework is not worth any points - that's because I want you to be able to do your best on the homework, but still have room to make mistakes - that's how we learn! I have provided a list of homework problems for you to do, but I have also posted my solutions for these so you can check your work. Instead, I will give a brief quiz after each of the 16 chapters that we'll be covering. These quizzes will be roughly 3 questions about topics from the chapter, that should seem familiar if you've done the homework. This is my way of finding out if you figured out the material, eventually! So contact me, work with your classmates, let's figure out these problems! These quizzes are supposed to examine your understanding of each chapter, individually. You will have 30 minutes for each quiz, and they should be taken within 2 days of when you are expected to have finished the chapter.

- **Tests:** 3 at 16,000 each = 48,000 pts

There will be 3 tests over the course of 8 weeks. These tests will be examining your ability to connect the material from multiple chapters all together. They will be broken down as follows:

- Test 1: Electricity (chpt 5-10) (16,000 pts) (July 2, 2021)
- Test 2: Magnetism (chpt 11-16) (16,000 pts) (July 23, 2021)
- Test 3: Optics (chpt 1-4) (16,000 pts) (August 6, 2021)

Each test will be roughly 6 problems (split between calculation and conceptual) connecting the material in each subtopic, as well as a reflection. *While the tests are not explicitly cumulative, learning is cumulative, and material from a previous section may be critical to solving a current problem.* Tests will be available all day on the day they are listed, and you will have 90 minutes to complete them. These are the only 'hard deadlines' for this course.

- **Checkpoints:** 16 chapters at 1,500 each = 24,000 pts

Between every section of videos, you will be asked to respond to a "Checkpoint Question"

- these are conceptual questions that you should be able to answer based on the videos and reading the book. You will submit your response to these questions, and then be presented with my answer to the question. You will then be asked to reflect on whether we agree, and explain how (if at all) you would opt to amend your answer. The number of checkpoints vary by chapter, but earnest completion (as in, not spamming the keyboard) of all checkpoints will earn you 2,000 points per chapter. These questions will also help you practice answering conceptual questions in a no-risk environment before answering similar questions on the tests.

- **Introduction:** 1 at 2,000 each = 2,000 pts

You will be asked to submit an introduction assignment via your preferred email, therefore setting up a channel of communication between the two of us. Since I won't be able to get to know you in person, at least I can try to get to know you digitally!

- **Course Reflection:** 1 at 2,000 each = 2,000 pts

At the end of the class, I want to give you a space to reflect on how the course went for you. What are you proud of? What do you wish you had done differently? Things like that - this assignment will be posted later.

6 Attendance

Since this course is online, attendance is not mandatory. I'm not even sure how you would - I expect you to participate in the class, and that's attendance in this instance!

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.

7 Calendar

According to the NDSU Registrar website, the important dates are:

June 15 - Classes begin

June 18 - Last day to add classes or drop without 'W' at 100% refund

June 23 - Last day to submit requests for Audit, Pass/Fail, Payments due for summer balances

June 29 - Last day to add summer courses

July 2 - Last day to withdraw to 0 credits at 75% refund

July 5 - No classes (4th of July observed) July 15 - Last day to withdraw to 0 credits at 50% refund

July 21 - Last day to drop with 'W' record

August 6 - Last day of classes

August 11 - Final grades due (noon) and available online (late evening)

8 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 (www.ndsu.edu/disabilityservices) as soon as possible.

9 Academic Honesty Statement

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.

10 Tentative Daily Expectations:

The expected schedule will have roughly 1 hour of video content per day, and I'm aiming for 4-8 homework questions per day as well. The checkpoints depend on how many sections make up 1 hour of video. I am scheduling under the assumption that you will do no work on the weekends, but you are welcome to do whatever works out for you!