

# PHYS 252

# University Physics II

# Spring 2017

Class #5485 (4 credit hours)

**Bulletin:** 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                      **Corequisite:** MATH 166

**Instructor:** Dr. Alan Denton                      Tel: 231-7036  
Physics, South Eng. 214B                      alan.denton@ndsu.edu

**Classes:** MF 9:00-10:15 a.m., W 9:00-9:50 a.m. (Hill 112)

**Office Hours:** MWF 10:30 a.m.-12:00 p.m. (or by arrangement)

**Goals:** Gain conceptual mastery of classical electromagnetism and optics, while developing qualitative and quantitative problem-solving skills.

**Objectives:** Integrate and apply principles of electricity and magnetism (charge, field, potential, current, circuits, waves, etc.) to solve conceptual and practical problems and to explain fundamental physics underlying EM technologies.

**Textbook:** Halliday, Resnick, Walker, Fundamentals of Physics, 10<sup>th</sup> ed. (Wiley, 2014)

<b>Evaluation:</b>	Homework Assignments	200 points
	Midterm Exams (3)	100 points each
	Final Exam (May 10)	200 points
	No make-up exams will be scheduled	

Correct responses to 80% of the homework problems will earn the maximum 200 pts. To best prepare for exams, however, I recommend attempting all homework problems. Your final grade will be based on your homework score (200 pts), your best 2 out of 3 midterm exam scores (200 pts), and your score on the final exam (200 pts).

Total available points: 200 (homework) + 200 (midterms) + 200 (final) = 600 points

**Grades:** A: 90-100%; B: 80-89.9%; C: 70-79.9%; D: 60-69.9%; F: < 60%

**Communication:** Weekly homework will be posted on the LON-CAPA homepage:  
[http://www.ndsu.edu/physics/lon\\_capa](http://www.ndsu.edu/physics/lon_capa)

Follow the login instructions to access our course and mind the assignment deadlines.

Announcements and notes will be posted on our Blackboard course homepage:

<https://bb.ndsu.nodak.edu>

## Topics and Timetable

Chapter 21	Electric Charge	Jan. 11-13
Holiday	No Class	Jan. 16
Chapter 22	Electric Fields	Jan. 18-20
Chapter 23	Gauss' Law	Jan. 23-27
Chapter 24	Electric Potential	Jan. 30-Feb. 3
Chapter 25	Capacitance	Feb. 6-8
<b>Midterm Exam 1</b>	<b>Covering Chapters 21-24</b>	<b>Fri., Feb. 10</b>
Chapter 26	Current and Resistance	Feb. 13-17
Holiday	No Class	Feb. 20
Chapter 27	Electric Circuits	Feb. 22-24
Chapter 28	Magnetic Fields	Feb. 27-March 3
Chapter 29	Magnetic Fields Due to Currents	March 6-10
Spring Break	No Classes	March 13-17
Chapter 30	Induction and Inductance	March 20-22
<b>Midterm Exam 2</b>	<b>Covering Chapters 25-29</b>	<b>Fri., March 24</b>
Chapter 31	EM Oscillations and AC Current	March 27-31
Chapter 32	Maxwell's Equations, Magnetism	April 3-7
Chapter 33	Electromagnetic Waves	April 10-12
Spring Recess	No Classes	April 14-17
Chapter 33	Electromagnetic Waves	April 19
<b>Midterm Exam 3</b>	<b>Covering Chapters 30-33</b>	<b>Fri., April 21</b>
Chapters 34-35	Optics: Images, Interference	April 24-28
Chapters 35-36	Optics: Interference, Diffraction	May 1-5
<b>Final Exam</b>	<b>Comprehensive (Chaps. 21-36)</b>	<b>May 10, 1:00 PM</b>

Physics TAs: South Engineering 322 (schedule to be posted)

Ace Tutoring: [http://www.ndsu.edu/studentsuccess/drop\\_in\\_tutoring\\_schedule](http://www.ndsu.edu/studentsuccess/drop_in_tutoring_schedule)

### Academic Honesty and Special Needs:

*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).*

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