

PHYS 252

University Physics II

Summer 2017

Class #6356 (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: Lina Alhalhooly
Physics, South Eng. 318 C. E-mail: lina.alhalhooly@ndsu.edu

Classes: M,T,W,Th 11:00a.m.-12:50 p.m. (Minard Hall, Rm 220)

Office Hours: T Th 1:00-2:30 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, 10th ed. (Wiley, 2014)

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| Evaluation: | Homework Assignments | 100 points |
| | Participation+quizes | 100 points |
| | Midterm Exams (2) | 100 points each |
| | Final Exam | 100 points |
| | No make-up exams will be scheduled | |

Total available points: 500 points.

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

Communication: Weekly homework, Announcements and notes will be posted on the Blackboard:

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

Main Topics and Preliminary Timetable

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| Chapter 21 | Electric Charge | Jun. 13-14 |
| Chapter 22 | Electric Fields | Jun. 15-19 |
| Chapter 23 | Gauss' Law | Jun. 20-22 |
| Chapter 24 | Electric Potential | Jun. 26-28 |
| Chapter 25 | Capacitance | Jun. 29-Jul. 3 |
| Holiday | No Class | Jul. 4 |
| Midterm Exam 1 | Covering Chapters 21-24 | Wed., Jul. 5 |
| Chapter 26 | Current and Resistance | Jul. 6-11 |
| Chapter 27 | Electric Circuits | Jul. 12-13 |
| Chapter 28 | Magnetic Fields | Jul. 17-18 |
| Chapter 29 | Magnetic Fields Due to Currents | Jul. 19 |
| Chapter 30 | Induction and Inductance | Jul. 20 |
| Midterm Exam 2 | Covering Chapters 25-29 | Mon., Jul. 24 |
| Chapter 31 | EM Oscillations and AC Current | Jul. 25-26 |
| Chapter 32 | Maxwell's Equations, Magnetism | Jul. 27 |
| Chapter 33 | Electromagnetic Waves | Jul. 31 |
| Chapter 33 | Electromagnetic Waves | Aug. 1 |
| Chapters 34-35 | Optics: Images, Interference | Aug. 2 |
| Chapters 35-36 | Optics: Interference, Diffraction | Aug. 2 |
| Final Exam | | Aug. 3, 11:00 AM |

Ace Tutoring: 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.

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) as soon as possible.