Physics 212   COLLEGE PHYSICS II   Summer 2017

This syllabus was last updated on **June 6, 2017**

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Bulletin Description: Second course for students without a calculus background. Includes electricity, magnetism, optics and modern physics.

This course has been approved for the General Sciences category in general education because "Students will learn to comprehend concepts and methods of inquiry in science and technology, and their application for society." and "Students will learn to integrate knowledge and ideas in a coherent and meaningful manner."

Objectives: This course provides students with an understanding of the basic principles of electromagnetism, optics, and modern physics. It will guide them in their everyday lives and careers as informed members of our society. Students acquire conceptual understanding and the ability to solve quantitative physics problems such that they can readily apply their knowledge to novel problems and situations.

Course objectives are met by readings, lectures, and homework through the development of conceptual understanding and the ability to quantify concepts in specific physical situations. Students demonstrate their level of comprehension in LON-CAPA homework and exams.

Prerequisites: Physics 211 or consent of instructor

Meetings: Monday-Friday 9:00 AM - 10:00 AM in *NDSU Ladd Hall, Rm 114*.
Class attendance is expected but is not a component of the course grade.

Office hours: Tuesday, Thusday, Friday 10am-12pm. Monday, Wednesday 12pm-2pm. South Engineering 301.

Textbook: Nicholas J. Giordano, *College Physics, Reasoning and Relationsships 2nd edition*, (Brooks/Cole, Cencage Learning), Chapters 17-30

Topic Outline and Timing: The textbook chapters to be covered in this course are listed below, along with the tentative exam dates. Most (but not all) material of chapters 17-26 will be covered, chapters 27-30 will likely only be surveyed.

Chapters 17-20:   Electricity and Some Magnetism
Exam I: Friday, June 30th
Chapters 21, 23-25:   Magnetism and Optics
Exam II: Friday, July 14th
Chapters 27-30:   Modern Physics
Exam III: Friday, August 4th

Format: The class will involve traditional lecture, along with discussion and problem solving. If desired, paper flash cards will be distributed and used. Students are encouraged to engage in in-class discussions and ask questions at any time during or after class.

How to succeed: Attending class, reviewing lecture notes, reading the textbook, taking part in class activities and discussions, and doing homework (and additional) problems are keys to success. Each student is encouraged to contact the instructor with any concerns, questions, and suggestions. If desired, review sessions will be held prior to exams.

LON-CAPA: The LON-CAPA course management system will be used to post homework, lecture notes, grades, and other information. LON-CAPA can be accessed by selecting the appropriate server at **http://www.ndsu.edu/physics/lon_capa/**. Your username is everything to the left of the @ in your NDSU email address (use all lowercase letters). For example, if your email address is Frank.Underwood@ndsu.edu, then your LON-CAPA username is Frank.Underwood. Initially you create your own password by following the link "Forgot Password". For help using LON-CAPA contact your instructor or laboratory technician Paul Omernik (SE110, Paul.Omernik@ndsu.edu, 231-7047) A $5 course fee is assessed for LON-CAPA server upgrades and maintenance.

Homework: Three homework problem sets will be assigned via the LON-CAPA online system.

set #	coverage	assigned	due	# of problems
1	chapters 17-20	June 13th	June 29th	solve 25 out of 30
2	chapters 21, 23-25	July 1st	July 13th	solve 25 out of 30
3	chapters 27-30	July 15th	August 3rd	solve 10 out of 15

Each solved problem earns 1 point (For problems with multiple parts each part earns 1 point). The maximal number of points for all homework sets is $25 + 25 + 10 = 60$. You may work together on homework sets, but simply copying another's answers is neither recommended nor beneficial. No late homework will be accepted.

Exams: Three in-class "midterm" exams will be given. The midterm exams will be based primarily on material covered since the last exam, but certain questions may require previous knowledge. The problems are a mix of conceptual and computational problem-based questions. Your lowest of the four exam scores (either midterm or final) will be dropped. That is, only the best three exam scores (with maximal 30 points for each exam) count toward the final grade.

All exams will allow for one side of a 5.5" by 11" sheet of paper with handwritten notes. A calculator will be required for successful completion of the exams; all other electronic devices must be turned off and stored. The use of calculator software in cell phones, translators, laptop computers, etc., is not permitted on an exam. Bring a pencil and calculator for each exam. No makeup exams will be scheduled.

Grading: Grading will be based on LON-CAPA homework score (max. 90 points) and best 2 out of 3 exams (max. $2 \times 30 = 60$ points). From the actual number of points and the maximal number ($60+60 = 120$ points) the percentage will be calculated and used to grade according to: 88.0% -100% A, 77.0% - 88.0% B, 66.0% - 77.0% C, 55.0% - 66.0% D, 0% - 55.0% F. Expressed in points, this corresponds to: 106 - 120 A, 92 - 106 B, 79 - 92 C, 66 - 79 D, 0 - 66 F. The instructor reserves the right to lower the grade cutoffs in response to class performance, but they will not be raised.

Additional Statements: *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. 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. 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.*