College Physics II (Physics 161)
Spring 2017

Professor: Dr. Ananda Shastri

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Office: Hagen 307E, phone 477-2448

Office hours:

Meeting:

- **Lecture:** MWF 10-10:50 am in Langseth Hall 118
- **Lab:** Hagen 317/323 at 12-1:15pm or 1:30-2:45pm

Final exam time: Tuesday, May 9, 9-11 am. You must take the final exam on this day.

Description: Physics 161 is an algebra-based study of physics. Teaching methods include lecture, and peer discussion. Topics include thermal physics, electricity and magnetism, and optics. You will earn four credits under LASC 3: Natural Sciences.
By the end of this course, you will be able to:

- Demonstrate understanding of scientific theories.
- Formulate and test hypotheses by performing laboratory, simulation, or field experiments in at least two of the natural science disciplines. One of these experimental components should develop, in greater depth, students' laboratory experience in the collection of data, its statistical and graphical analysis, and an appreciation of its sources of error and uncertainty.
- Communicate their experimental findings, analyses, and interpretations both orally and in writing.

Pre-requisites: Physics 160 and Pre-calculus (Math 142) or Trigonometry (Math 143) or Introduction to Applied Math (Math 229)

Course web pages:

- http://physweb.mnstate.edu/Physics161 for syllabus, homework, and lab-related links.
- D2LBrightspace for grades and pre-lab quizzes(https://mnstate.ims.mnscu.edu/)
- For homework problems and submission go to https://www.saplinglearning.com/ibiscms/login/

Required:

- *College Physics*, by Freedman, Ruskell, Kesten, Tauk.
- Sapling (electronic homework system) subscription (included in book package if you buy from bookstore, otherwise buy from bookstore or online individually)
- *Physics 161 Laboratory Manual (online)*

Grading: Course grades will be assigned on an absolute scale according to

A-/A+	B-/B+	C-/C+
90-100%	80-90%	70-80%
D-/D+	F	
60-70%	Below 60%	

The components of your grade and their relative weights are:

Homework (25%) will consist of problems each week on the electronic course

management system called Sapling. You will have one written problem from the book as well. The written problem is due Wednesday by 4pm in Hagen 307 (Physics Office).

Group lab reports (20%) Each week you will work with your lab partners to complete a lab assignment and submit a report on your results. You must read the lab and answer the pre-lab questions on Desire 2 Learn (D2L) by midnight of the day before your lab is scheduled.

On-time lab attendance (5%) You must show up for lab by the start of lab time. You will check in, and get points for being there on time.

Exams (50%) will last 75 minutes and include both conceptual problems and written problems. The **final exam** will be comprehensive.

Policies:

The policies listed below help to keep this large class running smoothly, ensure fairness to all involved, and clarify grading judgments.

1. *No late assignments:* Assignments are due Wednesdays by 4pm. Assignments not submitted at that time are considered late. Late assignments will not accepted. If you miss class due to illness, emergencies, military service, and participation in a university-related event. (see student handbook online at http://www.mnstate.edu/sthandbook/) you will need to obtain written proof. Fill out the late assignment form obtainable from the course website. Submit the form, proof, and assignment to your lab instructor (in the case of lab reports, homework) or lecturer (in the case of exams). If your request is valid, you will be contacted regarding the makeup.
2. *Exams:* Failing all the exams results in automatic failure for the class, regardless of your course average. All passing students must pass at least one exam.
3. *Class attendance is expected.* Absences are excused in cases of illness, emergencies, military service, and participation in a university-related event. (see student handbook online at http://www.mnstate.edu/sthandbook/).
4. *Labs:* If you miss three labs or more without excused absences you fail the course. If you miss your scheduled lab period, you must arrange to make up the lab in another lab section. Check with the lab instructor first.
5. *Cheating:* Copying someone else's homework with or without their consent, copying another person's lab report and submitting as your own, copying problem solutions from another person's exam are all forms of cheating. This behavior will earn an F for the assignment and possibly and F for the course. The final decision will be made by the lab instructor and lecturer.

Minnesota State University Moorhead is committed to providing equitable access to learning opportunities for all students. The Disability Resource Center (DRC) is the campus office that collaborates with students who have disabilities to provide and/or arrange reasonable accommodations. If you have, or think you may have, a disability (e.g. mental health, attentional, learning, chronic health, sensory or physical) please contact the DRC at (218) 477-4318 (V) or (800)627.3529 or 711 (MRS/TTY) to schedule an appointment for an intake.

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Schedule Spring 2017

Week	Mon	Tues	Wed	Thurs	Fri	Labs	Lecture
1 (Jan. 9-13)						Pre-test Lab 1	Ch16 • Electric charge • Electric field
2 (Jan. 16-20)	**No class**	Lab1due	HW1due			Lab 2	Ch16 • Electric charge • Electric field
3 (Jan. 23-27)		Lab2due	HW2due			Lab 3	Ch17 • Electric potential • Electric potential energy
4 (Jan.30-Feb.3)		Lab3due	HW3due			Lab 4	Ch17 • Capacitors
5 (Feb.6-10)		Lab4due	HW4due	**Exam1**		Problem	Ch18 • Current • Resistivity • Resistance
6 (Feb. 13-17)			HW5due			Lab 5	Ch18 • Kirchhoff's laws • RC circuit
7 (Feb.20-24)	**No class**	Lab5due	HW6due			Lab 6	Ch19 • Magnetism • Moving charges
8 (Feb.27-Mar.3)		Lab6due	HW7due			Lab 7	Ch19 • Long straight wire • Solenoids
9 (Mar.6-10)	**No class**	**No class**	**No class**	**No class**	**No class**		
10 (Mar.13-17)		Lab7due	HW8due	**Exam2**		Problem	Ch20 • Faraday's law
11 (Mar.20-24)			HW9due			Lab 8	Ch20 • Faraday's law
12 (Mar.27-31)		Lab8due	HW10due			Lab 9	Ch24 • Mirrors
13 (Apr.3-7)		Lab9due	HW11due			Lab10	Ch24 • Lenses, optical devices
14 (Apr.10-14)		**No class**	HW12due		**No class**	No lab	Ch14 • Temperature • Ideal gas law • Heat flow
15 (Apr.17-21)	**No class**	Lab10due	HW13due	**Exam3**		Problem	Ch14 • Latent heat • Mechanism of heat transfer
16 (Apr.24-28)			HW14due			Lab11	Ch15 • 1st law of thermodynamics • 2nd law of thermodynamics
17 (May1-5)		Lab11due	**Study day**			Post-test	
(May8-12)		**Final**					