College Physics I (Physics 160)
Fall 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 3:30-4:45pm

Final exam time: Monday, December 11, 9 a.m. You must take the final exam on this day.

Description: Physics 160 is an algebra-based study of physics. Teaching methods include lecture, an peer discussion. Topics include simple motion, projectile motion, Newton's Laws, work, energy, momentum, and harmonic motion and fluids if time permits. 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 experiments.
- Communicate their experimental findings, analyses, and interpretations both orally and in writing.
- Evaluate societal issues from a natural science perspective, ask questions about the evidence presented, and make informed judgments about science-related topics and policies.

Prerequisites: Pre-calculus (Math 142) or Trigonometry (Math 143) or Introduction to Applied Math (Math 229)

Course web pages:

- http://physweb.mnstate.edu/Physics160 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
- *Physics 160 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 Monday before that week's lab.

On-time lecture and lab attendance (5%) You must show up for lecture and lab on time. You will check in, and get points for being there on time. If you are late, you do not get this credit.

Exams (50%) will last 50 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 and strives to make courses inclusive and accessible in accordance with sections 504 and 508 of the 1973 Rehabilitation Act and the Americans with Disabilities Act. The University will make reasonable accommodations for students with documented disabilities. Accessibility Resources (AR) is the campus office that collaborates with students in need of special accommodations to assist in providing and/or arranging 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 Accessibility Resources at (218) 477-4318 (V) or (800) 627.3529 (MRS/TTY) to schedule an appointment for an intake. Online students may need to schedule a phone meeting or web conference.

- If you are already registered with Accessibility Resources and have a current Accommodation Letter, please schedule an appointment to visit with me, during my office hours, to discuss implementation of your accommodations.

- Additional information is available on the AR website: http://www.mnstate.edu/disability/

Schedule Fall 2017

Week	Mon	Tues	Wed	Thurs	Fri	Labs	Lecture
1 (Aug. 21-25)						Pre-test Lab 1	Ch1 • Units • Problem solving • Significant figures
2 (Aug. 28-Sept. 1)		Lab1due	HW1due			Lab 2	Ch2 • 1D motion • Velocity, acceleration
3 (Sept. 4-8)	**No class**	Lab2due	HW2due			Lab 3	Ch2,Ch3 • 1D motion, Problem solving • Vectors
4 (Sept. 11-15)		Lab3due	HW3due			Lab 4	Ch3 • 2D motion • Projectiles
5 (Sept. 18-22)		Lab4due	HW4due	**Exam1**		Problem	Ch4 • Force • Newton's laws
6 (Sept. 25-29)			HW5due			Lab 5	Ch5 • Applications of NL • Friction, drag
7 (Oct. 2-6)		Lab5due	HW6due			Lab 6	Ch5, Ch6 • Circular motion • Work, energy
8 (Oct. 9-13)		Lab6due	HW7due			Lab 7	Ch6 • Energy conservation
9 (Oct. 16-20)		Lab7due	HW8due	**Exam2**		Problem	Ch7 • Momentum, conservation • Impulse
10 (Oct. 23-27)			HW9due			Lab 8	Ch8 • Rotation • Kinematics
11 (Oct. 30-Nov 3)		Lab8due	HW10due			Lab 9	Ch8 • Torque • Angular momentum
12 (Nov. 6-10)		Lab9due	HW11due		**No class**	Lab10	Ch9 • Stress, strain • Young's modulus
13 (Nov. 13-17)		Lab10due	HW12due	**Exam3**		Problem	Ch11 • Density,pressure • Pascal's principle
14 (Nov. 20-24)			**No class**	**No class**	**No class**	Lab11	Ch11 • Archimedes' principle
15 (Nov. 27-Dec. 1)		Lab11due	HW13due			Lab 12	Ch11, Ch12 • Flow • Oscillations
16 (Dec. 4-8)		Lab12due	**Study day**		**.**	Post-test	
17 (Dec. 11-15)			**Final 9 a.m.**				