

PHYS 121, sections 01, 02, and 03
GENERAL PHYSICS I
 Professor Minschwaner

Lecture Times: Tue, Thu 9:30 – 10:45

Recitations: Wed 19:00-20:55, Thu 14:00-15:55 and 19:00-20:55

Location: Workman 101 (lecture), 109 or 113 (recitations)

Text: *University Physics Volume I*, by Ling, Sanny and Moebs

Available for free download at openstax.org

Contact Info: Office in Workman 309, Kenneth.minschwaner@nmt.edu, x5226

Class website: http://www.nmt.edu/~krm/TEACHING/phys121_F2017.html

Learning Goals: Students in PHYS121 should gain a deep understanding of statics and mechanics, including Newton’s Laws, concepts of energy and work, momentum, rotation, and oscillations. This understanding will be measured by the ability to solve problems, either symbolically or numerically. Proficiency in algebra, geometry, and trigonometry will be assumed. Simple concepts in calculus will be introduced and applied to physical situations.

Below is an approximate schedule of topics and reading assignments. It will really help you to read the material before coming to class.

	<u>Week</u>	<u>Comment</u>	<u>P121 Lecture (K. Minschwaner)</u>	<u>P121Lab.</u>
1	08-21	First Week	Ch 1 Units and Measurement; Ch 2 Vectors	NO Lab
2	08-28		Finish Ch 2; cover Ch 3 Straight-line motion	Measurement Uncertainty
3	09-04	Labor Day	Ch 4 Motion in 2- and 3-D	Accel. of G. and Vec. Add. Forces
4	09-11		Ch 5 Newton's Laws	Projectile Motion
5	09-18		Ch 6 Applications of Newton's Laws	Newton’s Laws I
6	09-25		Ch 7 Work and Kinetic Energy	Newton’s Laws II
7	10-02		Ch 8 Potential Energy and Conservation Laws	Conservation of Energy
8	10-09	MidSemester	Ch 9 Linear Momentum and Collisions	Binary System
9	10-16	49ers	Ch 10 Fixed-axis Rotation	Collisions in 1-D and 2-D
10	10-23		Finish Ch 10, start Ch 11 Angular momentum	Inelastic Collisions
11	10-30		Finish Ch 11 Angular momentum	Torque
12	11-06		Ch 13 Gravitation	Rolling Without Slipping
13	11-13		LSM Ch 15 Oscillations	Angular Momentum
14	11-20	Thanksgiving	Finish Ch 15	NO Lab
15	11-27		LSM Ch 16 Waves	Harmonic Oscillators
16	12-04	Last Week	Finish Ch 16, review	NO Lab

Homework: There will be a mix of computer based (Expert TA, <http://www.theexpertta.com/>) and written homework assignments using problems from the textbook. Parts of the written assignments will be discussed during recitation periods. You must be able to attend a weekly recitation section in order to pass this course. Make sure that your recitation corresponds to sections 121-01, 121-02, or 121-03.

All students are strongly encouraged to submit their own work for the written homework assignments. You may work together and discuss the problems, but you will get the maximum benefit on the homework by solving each problem on your own. **The main purpose of homework is to prepare students for quizzes and exams;** therefore, copying solutions from online sources or from other students generally has a negative impact on quiz and exam scores.



Homework assignments will assigned on Tuesdays and will be due the following Monday by 4 pm. Paper assignments should be submitted in my homework slot (“Phys121-Minschwanger”) in the Physics Department copy room, Workman 335. For all homework, a late penalty of 20% per day will be assessed, up to a maximum of 50% (i.e. homework submitted on the last day of classes will still qualify for 50% credit).

Quizzes: Short (20-30 minute) quizzes will be taken roughly biweekly during recitation periods.

Exams: There will be one midterm and one final exam. The midterm will take place in a regular lecture meeting during the week of October 9-13. We will have a comprehensive final exam (time and place TBD).

iClickers: All students will need to have a registered iClicker (available from the book store) or smart phone app (<https://www.iclicker.com/>) to participate in class discussions and examples during lecture periods. Clicker credit will be based on participation alone, and not on correct/incorrect responses. Note that attendance is not required in either the recitation or lecture periods, although a part of your grade is determined by class participation (answering in-class questions with the iclicker) and by quizzes in the recitation sections.

Grading: Homework will count towards 20% of the overall grade (written and computer-based homework scores will be combined). The midterm and final exams will count for 25% each.

The recitation quiz average will contribute 20%, and the lowest quiz grade may be dropped from the average. Finally, Clicker points will round out the remaining 10%.

Letter grades will be based on the following numerical scores:

A: 90-100

B: 80-90

C: 70-80

D: 60-70

Additional Information and Help:

New Mexico Tech is committed to protecting the rights of individuals with disabilities. Qualified individuals who require reasonable accommodations are invited to make their needs known to the Office of Counseling and Disability Services (OCDS) as soon as possible. In addition, New Mexico Tech offers mental health and substance abuse counseling through the Office of Counseling and Disability Services. The confidential services are provided free of charge by licensed professionals. To schedule an appointment, please call 835-6619.

The Physics Department and the Office of Student learning (OSL) offer drop-in help from graduate students and learning coaches in Speare 104 or 110. The times when these help sessions are staffed will be available from either the Physics Department (Workman 333) or the OSL in Speare.

Academic Honesty:

New Mexico Tech's Academic Honesty Policy can be found starting on page 59 of the NMT catalog,

http://www.nmt.edu/images/stories/registrar/pdfs/20132014_UNDERGRADUATE_Catalog_FINAL.pdf

You are responsible for knowing, understanding, and following this policy.