Physics 121-03: General Physics I

Syllabus: 2002 Fall

Instructor: Prof. David Jeffery, Workman Center Rm 313, Tel: 505-835-5226, Email: jeffery@kestrel.nmt.edu, Office Hours: MTWF 2:00–4:00 pm (Make an appointment if you need to see the instructor for sure.)
Time and Place: MWF 10:00–10:50 am, R 2:00–4:00 pm (recitation) Workman Center, Rm 113
Course Section Webpage: http://kestrel.nmt.edu/~jeffery/course/c_intro/

Co/Prerequisites: Math 131 (co), Physics 121L (co)

Text: Halliday, Resnick, & Walker "Fundamentals of Physics, Extended" 6th Edition (common name Halliday & Resnick).

Catalog Course Description: 4 Credits. Introductory concepts. Mechanics, including Newton's laws of force, linear and angular momentum, energy, gravitation, heat, and thermodynamics, and applications.

Supplementary Course Description: This is a first semester course in introductory physics. But introductory doesn't mean easy. Many topics are covered and in some depth. Mathematical tools including calculus are needed. The emphasis is on concepts and calculations, logic, beauty, utility, and the unity of the physics. You may never return to particular topics in later life, but the physics approach should be a lifetime achievement and strength. And we'll have some fun too.

Daily Grind: We have three 50 minute lecture periods Mondays, Wednesdays, and Thursdays starting at 10:00 am. We will have 5 minute quizzes Mondays and Wednesdays at the end of the period. The lectures are primarily for presenting new material. The recitation period on Thursdays 2:00–4:00 pm will be partially used for lectures. The large coverage required for this course demands that I use the 1st hour of the recitation for lecturing on new material especially in those weeks designated for two chapters of the text. The 2nd hour of the recitation will be used for working examples, looking at homework problems, and review. In the recitation, students will break into groups of about 4 for problem discussion and solution. We will break for 10 minutes at about 3:00 pm. The recitation period will also be used for the 3 in-class tests: we will use the 1st hour or so for review and the 2nd hour for the test on test days.

Evaluation and Grading: The 4 grading categories, their weightings, and their drops are:

in-class quizzes	$\leq 3\,\%$	3 drops
weekly homeworks	$\leq 10\,\%$	1 drop
3 in-class tests	$54\,\%$	no drop
comprehensive final exam (2 hours)	$\geq 33\,\%$	no drop

Preliminary letter grades based cumulative average marks will be assigned according to lower bound scheme:

A	$90\,\%$
A−	$87\,\%$
B+	$84\,\%$
B	$80\,\%$
B−	$77\,\%$
C+	$74\,\%$
C	$70\,\%$
C−	$67\,\%$
D+	$64\,\%$
D	$60\,\%$
D−	$57\,\%$
F	$0\,\%$

The instructor will, however, make a final judgment on letter grades at the end of the course.

Posting of Marks and Grades: Marks and grades will be posted at the course section webpage. Posting will only be for those students who have requested their marks and grades be posted with a signature and have given a confidential alias: no social security number, student number, or recognizable parts of your own name. The alias is for posting only: use your real name on all items (homeworks and exams) that are handed in. The homeworks and exams will be handed back in class.

Quizzes: The quizzes are for quick feedback. They will be easy: "don't panic."

Homeworks: There will be weekly homeworks usually assigned on Fridays and usually due on the following Friday by 3:00 pm???. The homeworks will consist of multiple-choice and full-answer questions. Some of these will come from the text and others will be made up by the instructor. The questions for the week will be/are posted on the course schedule at the course section webpage. Solutions to the homeworks will be posted on the course schedule after the deadline.

In-Class Tests: There will be three 1-hour in-class tests. These tests are already on the schedule given below: they all occur on Thursdays.

Comprehensive Final: There will be a 3-hour comprehensive final in the exam week. It will be heavily weighted on the material from the last part of the course that has not be tested by the in-class tests.

Make-ups: Make-ups on exams are possible, but the student must have a good reason for needing one and must ask for it promptly.

Disabilities: If you have a disability that requires assistance or accommodation, you should contact Counseling and Academic Support Services (CASS, Wells Hall, Rm 113, Tel: 505-835-5208) and alert the instructor. The webpage for CASS is

http://www.nmt.edu/~stusvcs/Counsel/CouHome.html

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Tentative Schedule:  2002 Fall <br>
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Week of       Events in Space-Time
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August 26     Chapt.  1:  Measurement, Significant Figures     1 lectures
              Chapt.  2:  Motion in One Dimension              3 lectures
              <a href="./homewk/home01.pdf"> Homework 1 </a>
              <a href="./homewk/solution01.pdf"> Homework 1 Solutions </a>


September 2   Chapt.  3:  Vectors                              2 lectures
              Chapt.  4:  Motion in 2 and 3 Dimensions         2 lectures
              <a href="./homewk/home02.pdf"> Homework 2 </a>
              <a href="./homewk/solution02.pdf"> Homework 2 Solutions </a>
              Labor Day:  Sept. 2 Monday
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September 9 Chapt. 4: Motion in 2 and 3 Dimensions 2 lectures
Chapt. 5: Force and Motion I 2 lectures
 Homework 3
 Solutions to Homework 3
Registration closes: Sept. 13 Friday
Class Test 1: Sept. 12 Thursday
 Solutions to Test 1

September 16 Chapt. 5: Force and Motion I 2 lectures
Chapt. 6: Force and Motion II 2 lectures
 Homework 4
 Solutions to Homework 4

September 23 Chapt. 7: Kinetic Energy and Work 3 lectures
 Homework 5
 Solutions to Homework 5

September 30 Chapt. 8: Potential Energy and Energy Conservation 2 lectures
 Homework 6
 Solutions to Homework 6

October 7 Chapt. 9: Systems of Particles 2 lectures
Chapt. 10: Collisions and Momentum Conservation 2 lectures
 Homework 7
 Solutions to Homework 7
Class Test 2: Oct. 10 Thursday
 Test 2 Solutions

October 14 Chapt. 10: Collisions and Momentum Conservation 2 lectures
Chapt. 11: Rotation 2 lectures
 Homework 8
 Solutions to Homework 8
Academic Holiday, Homecoming: Oct. 18 Friday

October 21 Chapt. 11: Rotation 3 lectures
Chapt. 12: Torque and Angular Momentum 3 lectures
 Homework 9
 Solutions to Homework 9

October 28 Chapt. 12: Torque and Angular Momentum 3 lectures
Chapt. 13: Equilibrium and Elasticity 2 lectures
 Homework 10
 Solutions to Homework 10

November 4 Chapt. 14: Gravitation 2 lectures
 Homework 11
 Solutions to Homework 11
W deadline: Nov. 5 Tuesday: last day to withdraw with W
Class Test 3: Nov. 7 Thursday

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              <a href="./homewk/exam3.pdf"> Test 3 Solutions </a>


November 11   Chapt. 38:  Special Relativity                    3 lectures
              <a href="./homewk/home12.pdf"> Homework 12 </a>
              <a href="./homewk/solution12.pdf"> Solutions to Homework 12 </a>


November 18   Chapt. 38:  Special Relativity                    3 lectures
              <a href="./homewk/home13.pdf"> Homework 13 </a>
              <a href="./homewk/solution13.pdf"> Solutions to Homework 13 </a>


November 25   Chapt. 19:  Thermodynamics I                      3 lectures
              <a href="./homewk/home14.pdf"> Homework 14 </a>
              <a href="./homewk/solution14.pdf"> Solutions to Homework 14 </a>
              Thanksgiving Holiday:  Nov. 22--23 Thursday--Friday


December 2    Chapt. 20:  Thermodynamics II                     3 lectures
              <a href="./homewk/home15.pdf"> Homework 15 </a>
              <a href="./homewk/solution15.pdf"> Solutions to Homework 15 </a>


December 9    Chapt. 21:  Thermodynamics III                    3 lectures
              Extra Topics ???
              <a href="./homewk/home16.pdf"> Homework 16 </a>
              <a href="./homewk/solution16.pdf"> Solutions to Homework 16 </a>


December 16   Finals Week
              <a href="http://www.nmt.edu/~registra/info/finalexams.html"> Final Schedule
??? </a>
              Comprehensive Final
              Date: December 1????
              Time:  ????
              Location: ???
              Duration: 3 hours
              <a href="./homewk/exam4.pdf"> Solutions to Final </a>

December  23  Grades will be submitted to Registrar  ????
              Queries to the instructor about grades must be made prior
              to submission:   the earlier, the better.
              With any luck, final exams will be marked and
              grades will be posted December 1???, sometime in
              the afternoon.

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Fun Quiz: Not Marked: Voluntary Except for Name

Name:

Email Address:

Year:

Major, Possible Major, or Engineering Concentration:

Astrological Sign:

1. What is the density of water in grams per cubic centimeter?

2. What is a particle in the context of physics?

3. What is a force in the context of physics?

4. What is energy in one sentence?

5. Do you have personal internet access?

6. If you would like to have your marks and grades posted at the course section webpage, give an unidentifiable confidential alias (no social security numbers, student numbers, or recognizable parts of your own name) and sign to give permission for posting. The alias should be 14 characters or less in length. You may include small and large letters, numbers, spaces, and the special symbols `,-.'%*@`. **NOTE:** The alias is only for posting: hand in items with your real name only. Remember your alias!

Tear this page off and hand it in.