

(algebra-based) Physics I (Phys1230) Syllabus

Clifton Murray—UNM-Valencia

Fall 2019

Prerequisites: Completion of Math 1250 (Trigonometry and Precalculus, or old Math 150 Precalc) or Math 1430 (Elements of Calculus I, old Math 180) with a C or higher.

Class meets: Tuesday & Thursday 3:00-4:15 p.

Instructor's office: A126A. MW 3:15-4:15p, T 4:15-5:30p, Th 11:45-12:15, 1:15-2:30, 4:15-5:15p.
wcmurray@unm.edu, 505-925-8727

Useful things: Text: *College Physics 7th ed.*, by Wilson, Buffa, & Lou, mainly for homework, occasionally referred to in class. It's good for Physics II (algebra-based) also, at UNM-Valencia. Feel free to share a text with a classmate if that works for you.

Calculator: Scientific type. Needed Very Soon. Make sure it will accept powers-of-ten numbers, and also that it has the basic trig functions sin, cos, and tan—those features make it scientific. Basic scientific calculators are not very expensive, and will do everything you need in Physics I & II. (Graphing calculators such as the TI-84 are scientific, also, but are more expensive, and will have more features than needed for Phyc151 & 152.)

Disabilities: If you have a documented disability, please provide me with a copy of your letter from Equal Access services as soon as possible, to ensure that appropriate accommodations can be made in a timely manner.

Academic Dishonesty: From the UNM-Valencia Catalog: "Each student is expected to maintain the highest standards of honesty and integrity in academic and professional matters. The University reserves the right to take disciplinary action, including dismissal, against any student who is found responsible for academic dishonesty. Any student who has been judged to have engaged in academic dishonesty in course work may receive a reduced or failing grade for the work in question and/or for the course."

"Academic dishonesty" includes, but is not limited to, "dishonesty in quizzes, tests, or assignments; claiming credit for work not done or done by others..."

Disruptive Behavior: Any behavior which interferes with student education. Examples include loud talking/laughing which require repeated warnings from the instructor, making fun of other students answers in class, making derisive or sarcastic comments toward the instructor during class, etc. Continuing disruptive or unruly behavior will result in the student's being dropped from the class.

Any *Sexual Misconduct* or Gender Discrimination brought to the instructor's attention must be reported by the instructor to UNM's Office of Equal Opportunity and Title IX Coordinator. For information regarding what comprises sexual misconduct, see <http://policy.unm.edu/university-policies/2000/2740.html>

Children: Children are not permitted in the classroom, because of liability concerns and also out of courtesy for other students.

Electronic Communication Devices, incl cellphones, laptops or similar devices: **off** at all times during class. Do not use during tests, in or out of classroom, without instructor's permission.

Attendance: Any registered student who does not appear for the first week of the semester may be dropped from the course.

Upon four accumulated absences, any student may be dropped from the course altogether without further notice. (If you have a work or other frequent conflict, please consult with the instructor regarding your options.)

Missed Test: Default policy is No Makeup Tests. For genuine emergencies, the instructor may, at his discretion, make exceptions. No 2nd makeups will be given. (For unavoidable and pre-planned absences, we may be able to arrange an *early* test without penalty.)

Homework: Chapter homeworks are due at the start of class on Test days. Staple all of one chapter together. Clearly separate problems, and clearly demarcate them—with extra space, or an extra big prob # (e.g. 3, 12, 17, etc. (do NOT make a,b,c extra big), or set the problem # to the left of all other work.

Late homework; -50% for first class day late; Zero % (not accepted) after that.

Grading :

Accomplishment	Maximum possible points
5 tests, worth 100 points each	500
Homework	100
Drop lowest one score of tests or homework:	-100
Final Exam* (comprehensive; score not dropped):	<u>150</u>
Maximum possible grand total:	650

***Note: Minimum Final Exam Score to pass course = 70%.**

x : end-of-semester score

$624 \leq x \leq 650$	A+ (unless a test is missed or homework score is less than 70%).
$606 \leq x < 624$	A (unless a test is missed).
$585 \leq x < 606$	A-
$564 \leq x < 585$	B+
$541 \leq x < 564$	B
$520 \leq x < 541$	B-
$499 \leq x < 520$	C+
$476 \leq x < 499$	C
$455 \leq x < 476$	C-*
$390 \leq x < 455$	D
$x < 390$	F

*Depending on your program of study, a C- may Not meet the prerequisite for a future course or degree. It is your responsibility to know what minimum grade you need for your individual academic pursuit.

Two additional things which can help:

- Take Physics I Lab (Physics 151L). One value of lab is that it helps connect physics with the world beyond the textbook. Many students have said it makes the lectures more understandable.
- Get a Tutor in The Learning Center. It's free, and they'll even let you work together with classmates.

...Phyc 1230 Syll, contin...

Course Learning Objectives:

By semester's end, you should be able to demonstrate that you understand and can solve quantitative problems involving:

- units of mechanical measure
- constant-speed and accelerated motion in one and two dimensions (kinematics), including free-fall situations
- forces, esp. net force, as the cause of changes in motion (dynamics)
- the first, second, and third laws of motion
- the law of gravitation
- mechanical energy
- linear momentum
- circular motion, especially centripetal acceleration and force
- rotational motion, including torque, rotational kinetic energy, and angular momentum;
- vibrational and wave motion;
- sound;
- fluid pressure and fluid flow;
- thermal energy, heat and thermodynamics.

HWK TURN-IN = STAPLE
BY CHAPTER
AT START OF TEST.

FALL 2019 Physics I/1230 TH

CLIFFORD MURRAY
UNM - VALDEZ
3:00-4:15 P

20 AUG CH 1 MASS, SPACE, TIME, UNITS OF MEASURE. AV. SPEED, AV. VELOCITY. HWK: EXER 3, 5, 9, 11, 25, 33, 45, 47, 54, 61, 66	22 AUG CH 2 ACCELERATION EXERCISES # 1, 3, 9, 23... (to be contin) INTRO TO RIGHT-TRIANGLE TRIG
27 AUG CH 2 ACCELERATION CONTIN; FREE-FALL ... # 38, 40, 41, 48, 49, 59, 64, 65, 70	29 AUG RVW
3 SEP HWK CH 1 & 2 STAPLED SEPARATELY DUE BEFORE TEST TEST # 1 UNITS, MOTION.	5 SEP CH 3 INTRO TO VECTORS. MOTION IN TWO DIMENSIONS (PROJECTILE MOTION) # 1, 3, 4, 5, 47, 64, 66...
10 SEP CH 3 CONTIN. RELATIVE MOTION ... # 19, 22, 68, 70.	12 SEP CH 4, FORCES, CONTIN; FRICTION. SPRINGS. ELEVATORS. INCLUDED PLANE. ... # 40, 41, 64, 65, 67.
CH 4 NEWTON'S FORCE LAWS # 2, 4, 5, 12, 14, 31, 33... 17 SEP RVW	19 SEP HWK CH 3 & 4 DUE AT START TEST # 2 VECTORS, PROJ. MOTION, FORCE
24 SEP CH 5 ENERGY & WORK. KINETIC ENERGY, GRAVITATIONAL POTENTIAL ENERGY. # 1, 3, 4, 17, 19, 37...	26 SEP CH 5 CONTIN; WORK-MECHANICAL ENERGY THEOREM, CONSERVATION OF ENERGY PAPER # 29, 31, 45, 46, 48, 52, 53, 57, 60, 61, 63, 66, 69
1 OCT CH 6 MOMENTUM # 1, 2, 5, 13, 19, 21, 30, 37, 38, 45, 48, 74 & 76	3 OCT RVW
8 OCT HWK CH 5 & 6 DUE BEFORE TEST TEST # 3 ENERGY, WORK, POWER, MOMENTUM.	10 OCT FALL BREAK
15 OCT CH 7 ROTATION. ANGULAR VELOCITY, ANGULAR ACCEL. # 1, 2, 6, 7, 11, 19, 23, 45, 46, 49...	17 OCT CH 7 CONTIN; CIRCULAR MOTION, LAW OF GRAVITATION... # 30, 31, 36, 53, 60, 63. CH 8 TORQUE, ROTATIONAL INERTIA
22 OCT CH 8 ANGULAR MOMENTUM, ROTATIONAL KINETIC ENERGY. # 1, 3, 5, 8, 13, 23, 24, 35, 37, 47, 51, 57, 65, 69, 70	24 OCT RVW
29 OCT HWK CH 7 & 8 DUE BY TEST. TEST # 4 ROTATION	31 OCT CH 9 PRESSURE, FLUID PHYSICS. # 21, 23, 25, 31, 44, 45, 53, 54, 57, 59, 61
5 NOV CH 10 PERIODIC MOTION. WAVES. # 1, 3, 4, 21, 23, 27, 29, 32, 35, 41, 50, 57	7 NOV CH 10 SOUND WAVES: INTENSITY, LEVEL, DOPPLER EFFECT. # 1, 3, 7, 13, 15, 20, 21, 24, 47, 49, 51
12 NOV RVW	14 NOV CH 9, 13, 14 HWK DUE @ START. TEST # 5 PRESSURE, FLUIDS REPEATED MOTION, WAVES, SOUND
19 NOV CH 10 TEMPERATURE OF MATTER # 6, 8, 11, 21, 27, 36, 38, 47, 53, 57 START CH 11, THERMAL ENERGY TRANSFER	21 NOV CH 11 THERMAL ENERGY TRANSFER # 1, 4, 5, 6, 9, 14, 25, 29, 43, 45a, 47
26 NOV CH 12 THERMODYNAMICS # 5, 7, 12, 19, 23, 28, 33, 37, 49, 51, 53, 57	28 NOV THANKSGIVING
3 DEC RVW FOR FINAL	5 DEC RVW FOR FINAL
10 DEC FINAL EXAM 3:00-5:00 P	12 DEC