# Physics I/151 Syllabus

Clifton Murray—UNM-Valencia                                                                    Fall 2018

*Prerequisites:*  Completion of Math 150 (Precalculus) or Math 180 (Elements of Calculus I) with a C or higher.
*Class meets*:  Tuesday & Thursday 3:00-4:15 p.

*Instructor's office*:  126A.  MW 3:15-4:15p, T 4:15-5:30p, Th 11:45-12:15, 1:15-2:45, 4:15-5:45p.
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*Useful things*:  Text:  *College Physics 7th ed.*, by Wilson, Buffa, & Lou, mainly for homework, occasionally referred to in class.  It's good for Physics 152, also.  Feel free to share a text with a classmate if that works for you.
        **Calculator:  Scientific type**. **Needed Now**.  Make sure it will accept powers-of-ten numbers, and also that it has the basic trig functions sin, cos, and tan—that makes 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 a 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 Misconduc*t 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:  Keep them turned **off** at all times during class. Do not use during tests, in or out of classroom. If you need to be excused from the classroom, you must leave your phone with the instructor..

*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.

*Missed Test*: Default policy is No Makeup Tests.  For genuine emergencies, the instructor may, at his discretion, make exceptions. No 2$^{nd}$ 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 on Test days, at the start of class.

*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

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

*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.

*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.

| TUESDAY   HMWK DUE 1ST OF CLASS TEST DAY. Turn in stapled by chapter | THURSDAY |
|---|---|
| 21 AUG CH 1 MASS, SPACE, TIME. UNITS. AV SPEED. VELOCITY. HMWK CH 1, EXERCISES 3, 5, 9, 11, 25, 33, 45, 47, 54, 61, 66 | 23 AUG FINISH CH. 1. CH 2 ACCELERATION HMWK CH 2 EXER #1, 3, 9, 14 a, c, 23... (TO BE CONTIN) IF TIME: QUICK INTRO TO RIGHT △ TRIG |
| 28 AUG CH 2 ACCEL CONTIN: FREE-FALL ... # 38, 40, 41, 48, 49, 59, 64, 65, 70 | 30 AUG   RVW |
| 4 SEP HMWK CH 1 & 2 DUE AT START. STAPLED BY CHAPTER. TEST # 1 | 6 SEP CH 3 INTRO TO VECTORS. PROJECTILE MOTION #1, 3, 4, 5, 47, 64, 66... |
| 11 SEP CH 3 CONTIN: MORE VECTORS: RELATIVE MOTION ...#19, 22, 68, 70 CH 4 FORCE, NEWTONS LAWS #2, 4, 5, 12, 14, 31, 33 | 13 SEP CH 4 FORCES CONTIN: FRICTION, SPRINGS, ELEVATOR, INCLINED PLANE. ...#40, 41, 64, 65, 67. |
| 18 SEP   RVW | 20 SEP HMWK CH 3 & 4 DUE AT START. TEST # 2 |
| 25 SEP CH 5 ENERGY & WORK. KINETIC ENERGY. GRAVITATIONAL POTENTIAL ENERGY. #1, 3, 4, 17, 19, 37... | 27 SEP CH 5 CONTIN: THE WORK-ENERGY THEOREM. CONSERVATION OF MECHANICAL ENERGY. POWER. ...#29, 31, 45, 46, 48, 52, 53, 57, 60, 61, 63, 66, 69 |
| 2 OCT CH 6 MOMENTUM. CENTER-OF-MASS. IMPULSE. #1, 2, 5, 13, 19, 21, 30, 37, 38, 45, 48, 74a, 76 | 4 OCT   RVW |
| 9 OCT HMWK CH 5 & 6 DUE AT START OF CLASS. TEST #3 | 11 OCT   FALL BREAK ~ NO CLASS |
| 16 OCT CH 7 ROTATION. ANGULAR SPEED & VELOCITY. ANGULAR ACCELERATION. #1, 2, 6, 7, 11, 19, 23, 45, 46, 49... | 18 OCT CH 7 CONTIN. CIRCULAR MOTION. LAW OF GRAVITATION ... # 30, 31, 36, 53, 60, 63. CH 8 TORQUE. ROTATIONAL INERTIA. |
| 23 OCT CH 8 CONTIN ANGULAR MOMENTUM. ROTATIONAL KINETIC ENERGY. #1, 3, 5, 9, 13, 22, 24, 35, 37, 47, 51, 57, 65, 69, 70 | 25 OCT   RVW |
| 30 OCT CH 7 & 8 HMWK DUE BEFORE TEST TEST # 4 | 1 NOV CH 9 FLUIDS & PRESSURE #21, 23, 25, 31, 44, 45, 53, 54, 57, 59, 61 |
| 6 NOV CH 13 PERIODIC MOTION: SPRING, WAVES, PENDULUM #1, 3, 4, 21, 23, 27, 29, 32, 35, 41, 50, 57. | 8 NOV CH 14 SOUND LEVEL & INTENSITY. DOPPLER EFFECT #1, 3, 7, 13, 15, 20, 21, 24, 47, 49, 51. |
| 13 NOV   RVW | 15 NOV CH 9, 13, 14 HMWK DUE 1ST OF CLASS. TEST # 5 |
| 20 NOV CH 10 MATTER & TEMPERATURE #6, 8, 11, 21, 27, 36, 38, 47, 53, 57 START CH 11 THERMAL ENERGY TRANSFER | 22 NOV   THANKSGIVING ~ NO CLASS |
| 27 NOV CH 11 " " " #1, 4, 5, 6, 9, 14, 25, 29, 43, 45(a), 47 | 29 NOV CH 12 THERMODYNAMICS #5, 7, 12, 19, 23, 28, 33, 37, 49, 51, 53, 57 |
| 4 DEC HMWK CH 10, 11, 12 DUE @ START OF CLASS RVW FOR FINAL | 6 DEC   RVW FOR FINAL |
| 11 DEC FINAL EXAM 3:00-5:00 P | 13 DEC |