Physics II/161 Syllabus UNM-Valencia   Spring Semester 2017   Clifton Murray
Class meets T&Th 10:30-11:45a.

Instructor's Office A126-A. Hours MW 3:15-4:15p; T 4:15-6:15p; Th 11:45a-12:30p, 1:30-2:45p, 4:15-6:15p
505-925-8727   wcmurray@unm.edu

Prerequisite: Completion of Phyc 160 with course grade of C or higher.
 Useful Materials:
    Text: Fundamentals of Physics 10th ed., by Halliday, Resnick, & Walker. Nearly all homework assignments, and some test problems, will come from the text.
    Calculator: A graphing scientific calculator will occasionally be used in basic ways—arithmetic, scientific notation, trig/inv trig functions, exponents, logs, and graphing. Calculators may be used on tests; however, all test problems requiring calculations must show those calculations, clearly and in detail, on paper--merely writing down results from a calculator (other than arithmetic), without giving the full reasoning &/or mathematics behind it, will result in little or no credit.

Student Learning Objectives: By the end of the course, the student should be able to explain the physical meaning of, and solve problems involving, at least the following*: In Electricity and Magnetism*: 1) electric charges and Coulomb's Law; 2) electric fields; 3) electric flux and Gauss's law; 4) electric potential, and its relation to the electric field; 5) capacitance and capacitors, singly and in combination; 6) the relation between voltage, current, and resistance, in Ohm's law and in circuits; 7) resistors, singly and in combination; 8) electric power in d.c. circuits; 9) RC circuits and their behavior when charging or discharging; 10)magnetic fields; 11) how magnetic fields are produced; 12)the use of magnetic and electric fields to accelerate charge; 13) the relation between current and the magnetic field it produces (Ampere's law); 14) magnetic induction, inductance, inductors; 15) the relation between the rate of change of magnetic flux and the induced emf (Faraday's law); 16) electromagnetic oscillations and a.c. circuits; 17) the voltage-current transformer; 18) capacitive reactance, inductance, and impedance in RLC a.c. circuits; 19) rms votage, current, and power in a.c. circuits; 20)magnetism in matter, incl. the Earth's magnetic field; 21) Maxwell's equations. *In Temperature, Heat, and Thermodynamics*: 22) the meaning of temperature and heat, and their units of measure; 23) the First Law of Thermodynamics; 24) how to calculate the amount of heat for change-of-temperature processes and for change-of-state processes; 25) the 3 classical ways of thermal energy transfer: 26) the kinetic theory of gases; incl the Ideal Gas law in that theory; 27) entropy; 28) the 2nd Law of Thermodynamics, and it's consequence for heat engines; 29) the First Law of Thermodynamics applied to heat engines.

Academic Dishonesty as defined in the UNM-VC catalog includes copying work from other students. Any student found doing this on tests is subject to disciplinary action, ranging from "a reduced or failing grade for the work in question and/or the course" to "dismissal from the University".

Disruptive Behavior is any behavior which interferes with other student's learning or the instructor's ability to guide that learning. Examples include loud talking/ laughing/chatting with your buddy which require repeated warnings from the instructor, or derisive/ridiculing comments toward well-meaning students or the instructor—this is the quickest way to get expelled from the class. Keep your motives constructive, and it'll be a good educational experience.
 * Please Keep *cell phones OFF* during class.*

Sexual Misconduct : Any report made to a faculty member, TA, or GA regarding sexual misconduct or gender discrimination must be reported to the Office of Equal Opportunity and the Title IX Coordinator. For more information on campus policy regarding sexual misconduct, see https://policy.unm.edu/university-policies/2000/2740.html

Children in Class: Children are not permitted in class. This is regrettable, but it is due to liability concerns.

Disabilities: Should you have a documented disability requiring special accommodations, please provide the instructor with appropriate documentation from Equal Access Services, so those accommodations can be made available.

Makeup Work: Tests: There are no makeup tests, except in genuine emergencies—in such cases, expect a maximum score of 80%. (If needed for good reason, the Instructor will try and arrange an *early* test for the student.) The lowest of the tests or homework is dropped, but note that if any test is not taken—or, if the final homework total is less than 50%-- the student is disqualified from receiving an A+.
                    Homework : 1 class day late: -50%. 2 class days late: Zero credit.
                        All Homework assignments are due at first of class on relevant test day.

Final Exam Minimum: **Less than 65% on the final exam will result in a course grade no higher than "D"**, regardless of semester point total.

Grade weighting:

	Max possible points
Homework	100
4 tests	400
Drop lowest one of tests or homework:	-100
Final exam (not dropped, comprehensive)	150 **min to pass course 97.5** (65%)
	550 Max poss course total

$532 \leq x \leq 550$	A+	(unless a test is missed, or homework total is less than 50%)
$512 \leq x < 532$	A	(unless a test is missed)
$495 \leq x < 512$	A-	
$477 \leq x < 495$	B+	
$457 \leq x < 477$	B	
$440 \leq x < 457$	B-	
$422 \leq x < 440$	C+	
$402 \leq x < 422$	C	
$385 \leq x < 402$	C-	
$330 \leq x < 385$	D	
$0 \leq x < 330$	F	