

PHY 202 Syllabus Spring 2018

Prof. Wimbush 703-845-6526 email: wwimbush@NVCC.EDU

Lecture M W 11:00 AM – 12:20 PM

Lab M 1:00 PM – 2:30 PM

internet: <http://www.nvcc.edu/home/nwimbw>

Secretary phone: 703-845-6341

Textbook: College Physics, OPENSTAX COLLEGE, 2012 free Download at

<http://openstaxcollege.org/>.

Lab textbook: Wimbush 201-202 lab manual

Good Web sites:

Physics for Biology and Chemistry majors: an excellent web textbook

<http://cw.prenhall.com/bookbind/pubbooks/giancoli/>

<http://www.rwc.uc.edu/koehler/biophys/contents.html>

You can get video tutoring from these web sites:

<http://www.hippocampus.org>

<http://www.brightstorm.com/physics>

<http://www.khanacademy.org>

<http://www.wolframalpha.com>

And a nifty site to do calculations. . . like a powerful computer

www.learner.org **The Mechanical Universe** . A complete course on physics including a historical presentation. Excellent. . download or streamline the videos.

Classroom Etiquette:

All cell phones and pagers are to be turned off during class.

Students are to arrive in class on time.

Attendance will be taken every day.

Students are responsible for all material covered in either the textbook or in the lectures. If you miss a lecture, you should get the material from another student.

Make-up policy: If you miss an exam or score below a 70%, The final exam will be increased in value to make up for the missed exam or replace the failed exam.

If you miss a lab, you need to contact **DR. Wimbush** for a time and date to make up the lab with another class. If this is not possible, I will assign an alternative assignment in its place.

Withdraw/Audit Grades: No audit will be permitted after the first two weeks of classes.

The last day to drop with refund: **1/29/2018**

The last day to withdraw with a grade of "W" is **Mar 22, 2017.**

You are responsible for withdrawing yourself from the class.

Academic Misconduct:

Any cheating on any exam or laboratory quiz will result in a grade of "0" for that test. **The second time you are caught cheating will result in a grade of 'F' for the course.**

Cheating is defined as either the giving or the receiving of unauthorized help. Copying someone else's work or letting someone copy your work will be considered as cheating and will result in a grade of "0" for the assignment.

Only **authorized** FORMUAL SHEETS WILL BE PERMITTED; Learn (memorize) the FORMULAS; this WILL help you in doing your homework and passing the exams.

Special Needs and Accommodations: Please address with the instructor any special problems or

needs at the beginning of the semester. If you are seeking accommodations based on a disability, you must provide a disability data sheet, which can be obtained from the counselor for special needs, who is located in Room 148 of the Bisdorf Building, telephone number 845-6301.

Each Exams = 100 pts Final 200 pts. Lab = 200 pts homework = 100 pts
 A = 90 to 100% B = 80 to 89% C = 70 to 79% etc.

Lecture Schedule:

1/10	Static Electricity	(ch 18) 1,10,26,28,29
1/12	Electric Field	(ch 18) 39,42,46,53,60
1/17	Holiday Martin Luther King Day	
1/19	Electric Potential & Capacitors	(ch 19) 2,9,21,25,26,36,
1/24	Dielectrics	(ch 19) 41,46,53,60,61,
1/26	Exam I	
1/31	Electric Current & Resistor Circuits	ch 20: 1,7,19,24,29,41,
2/1		ch 20: 50,64,72,88,95
2/5	Bioelectricity,Kirchoff, RC	ch 21: 2,15,21,31,36,42,47,48,58,64,68
2/7	Exam II	
2/12	Magnets	(ch 22) 1,13,17,20,23,
2/14	Magnetic field due to currents	(ch 22) 26,40,42,55,64,72
2/21	induced EMF	(ch 23) 2,5,17,28,44,56,70
2/21	Alternating Current	(ch 23) 74,79,82,84,92,93,101
2/26	Exam III	
2/28	Electromagnetic Waves	ch 24 4,6,9,18,25,32
3/5	reflection & refraction	ch 25 2,7,10,20,27,32,42,57,58
3/7	optical instruments	Ch 26 1,6,9,15,26,30,33,35
3/12 – 3/16	SPRING BREAK	
3/19	interference & diffraction	ch 27 3,6,19,26,45,60,70,71,79,89
3/21	Exam IV	
3/26	Relativity	(ch 28) 3,15,25,29,35,44,47,52,67
3/28	homework	
4/2	Early Quantum Physics	(ch 29) 1,4,8,20,29,41,51,63
4/4	homework	
4/9	Quantum Physics	(ch 29)
4/11	Atomic Physics	(ch 30) 5,11,19,24,32,35,47
4/16	homework	
4/20	Radioactivity	(ch 31) 4, 12, 21, 22, 23, 25, 35, 38, 45,
4/23	Nuclear Physics	(ch 31)
4/25	Biological, fission, fusion	(ch 32) 45,47, 51, 55, 57
5/2	FINAL ?	
5/2	Final	11:00 AM to 12:45 PM

5 points will be added to your final exam grade if you complete the course evaluation online, (you must proof)

Lab schedule

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|---------------------------|---------------------------|
| 1. Milikan oil drop expt. | 2. Electric Field mapping |
| 3. Ohm's LAW | 4. RC Circuit |
| 5. E/M | 6. AC circuits |
| 7. Ray optics | 8. Wave optics |
| 9. Analysis of light | 10. Geiger tube |

NEW FOR 2018

Experiments are to be performed as outlined either in the textbook or the handouts; lab reports are to be submitted at the start of the next laboratory period. Each student writes his/her own lab report (no group reports)

The lab report should include:

1. **Abstract:** A brief statement of what the experiment "proves" and the validity of the method or procedures used.
2. **Theory:** Derive the formulas used in the experiment.
3. A **labeled diagram** of the apparatus. (Labels in ink artwork in pencil)
4. **Procedure:** Should be written in 3rd person, passive voice, and past tense **example:** The thermometer was read in three-minute intervals and the value recorded in table II. (Do not write "I read the thermometer" or "read the thermometer every three minutes.")
5. **Data tables:** (data in pencil; labels and lines separating columns and rows in ink)
Graphs: (labels, scales for x- and y - axis: in ink, curve in pencil)
6. **Estimation** of % Error.
7. **Conclusion:**