

General University Physics II
NVCC – Alexandria
June 28, 2018 – Aug.10, 2018
(SIX WEEK – SECOND)

Instructor: Dr. Parshu Gyawali

Course Title: PHY-232

Start Date: 2018-06-28

End Date: 2018-08-10

Course Section: Lecture: 001A (Class #13771)

Laboratory: 0A1A (Class #13772)

Semester: Summer 2018

Days: Monday (M), Tuesday (T), Wednesday (W), Thursday(R)

Time: Lectures: (M & W) 09:00AM - 12:45PM
(T & R) 09:00AM - 10:15AM

Room: AA 0441
AA 0385

Laboratory: (T & R) 10:30A - 12:45P

Room: AA 0385

Office: Office hour: After class time or by appointment

E-mail: pgyawali@nvcc.edu

Please use NVCC email with course number in the subject area

Textbook: Sears and Zemansky's **University Physics: with modern physics**

14th edition: Hugh D. Young, Roger A. Freedman; contributing author A. Lewis Ford.

ISBN 10:0-321-97361-5; ISBN: 13:978-0-321-97361-0 (Student Edition).

HOME WORK: Please visit website www.masteringphysics.com to make sure you have access card. Use *course ID: PHY232SUMMER2018* to enroll in "Mastering Physics".








Enrollment Requirements: Prerequisite: PHY 231, MTH 174 and satisfactory placement score for ENG 111 or division approval.

Course Description:

Includes wave phenomena, electrostatics, electricity, magnetism, and optics, with extended coverage of selected topics. Course description is give in nova website.

<http://www.nvcc.edu/curcatalog/academics/descriptions/description.asp?subject=PHY&fullname=Physics&catalog=232>

Topics for the course PHY232 include, but are not necessarily limited to:

-  Mechanical waves and sound
-  Electric charges, fields and potential – Gauss's Law
-  Capacitance
-  DC Currents and circuits
-  Magnetic fields and forces
-  Electromagnetic induction
-  Alternating currents

- 💡 Electromagnetic Waves
- 💡 Optics (Propagation of light, Geometric optics, Interference, Diffraction and Polarization)

Course Objectives:

- ▶▶ To prepare the students for more advanced courses in all the sciences and to give the students a basic understanding of the laws of physics which govern the behavior of the physical world.
- ▶▶ To develop problem-solving skills using algebra, calculus, vector and trigonometry
- ▶▶ To develop expressing physical events in the mathematical equation
- ▶▶ To develop the laboratory skills: measurement, data extraction, plot and scientific writing.

Student Objectives:

- 👍 Students must have a general understanding of mathematics (algebra, calculus, vector and trigonometry)
- 👍 Students must be able to state definitions and discuss certain physical quantities emphasized in the course.
- 👍 Students must be able to solve physics problems emphasized in the course.
- 👍 Student is responsible for all work covered whenever you are absent.
- 👍 Read, understand and follow instructions given in the syllabus.

Instructional Methodology:

Each of the topics listed in the course outline will be discussed during the class period. The teaching methodology includes lectures, classroom discussion and demonstrations. Instructor will solve some selected problems in class. Student practice the problem in the class. It is advised to bring own calculator, text book, and pen/pencil for the class work. Students will be required to read each of the chapters in the required textbook related to the topics discussed in class as part of their homework assignments.

Requirements for Class:

1. **Attendance:** Attendance for all class sessions is expected. Each student is responsible for all announcement or information provided in class whether or not he/she is actually present. Attendance to the laboratory sessions is mandatory.
2. **Written Assignment:** The written assignment or reports assigned should be typed and printed.
3. **Reading Assignments and Lecture:** It is advised to read chapter/section before the class. Some of the examples may not be from text book. Students are responsible for the material covered in the class.
4. **Homework:** Problems relevant to the lectured chapter/section will be assigned through the Paterson's online "**Mastering Physics**". Instructions for using Mastering Physics can be found on Blackboard or on the Mastering Physics website. **For any reason, homework extension will not be granted.**
5. **Laboratory:** Each lab laboratory report is due till next meeting. Lab report submitted after due date will not be graded. Thereafter, it will not have counted as turn-in lab report. **There will not be a makeup laboratory session.** Follow guide lines to prepare the lab reports. Every student should have safety training before start of laboratory sessions.
6. **Quizzes:** All quizzes will be online with due date. For any reason, no extension on quiz.

Exam: There will be **four tests** and a **comprehensive final exam**.

Any missed exam without prior information or valid documentation will not be given for makeup. *You must contact me to make arrangements and makeup can't be after the scheduled next regular test.* If some reason class is cancelled on exam day it will be held on the next class time. **You can't leave class before you finish the exam, please use bathroom before you enter the class on exam day.**

The weightage of course and lab activities are as follows:

| Activities | Weightage Percentage |
|---------------------------------|----------------------|
| Three tests [out of four tests] | 36% (12% each) |
| Final exam | 20% |
| Lab report | 20% |
| Assignment | 20% |
| Quiz | 4% |
| Total | 100% |

Grading: There is no curving and rounding

| Percentage range | Letter Grade |
|--------------------------|--------------|
| 90% or above | A |
| $\leq 80\%$ and $< 90\%$ | B |
| $\leq 70\%$ and $< 80\%$ | C |
| $\leq 60\%$ and $< 70\%$ | D |
| Less than 60 % | F |

NOTE: Having zeros in 50% or more homework assignments will not be able to earn a grade above a D.

Course withdrawal:

It is advised to visit http://www.nvcc.edu/curschedule/course_detail.asp?indexno=13771 to check due dates. **Drop with refund:** 7/5/2018; **Drop without F:** 7/25/2018

Academic integrity: Students will be penalized in case of plagiarism and cheating. Please visit college website for more information

<http://www.nvcc.edu/catalog/cat2014/policies/integrity.html>.

A student found and or abetting cheating/plagiarism will get a zero for the assignment and or exam.

Electronics:

Turn off cell phone or mute the ringtone. (Lecture, Lab and exam time)

The cell phone calculator is not allowed on examination.

Bring your calculator for the test/class work.

Disability Statement

The College is committed to the goal of providing each qualified student an equal opportunity to pursue a college education regardless of disability. Efforts will be made toward meeting reasonable requests for services to students with disabilities eligible under Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act (ADA). Students with disabilities are encouraged to contact for Disability Services in the Student Services or Counseling Center of any campus to discuss possible accommodations. <http://www.nvcc.edu/current-students/disability-services/>

WEATHER:

For closings due to inclement weather, register for NOVA Alert, check the NOVA website www.nvcc.edu , listen to local radio/TV stations, or call NOVANET (703) 330-3770. *Please check blackboard for assigned homework if college is closed due to weather or other reason.*

I maintain the right to modify this syllabus at any time. Change of syllabus will be notified through the blackboard or in class. You have to finish homework timely. Bring proof of paper to request an additional time for written assignment. Written work must be your own. **Verbatim copying will get you a zero** for that paper and possibly forwarded to the ethics committee.

Lectures: (M & W) Room: AA 0441) ; (T & R) Room: AA 0385
 Laboratory: (T & R) 10:30A - 12:45P Room: AA 0385

| Week | Day | Chapter | Lab | Remarks |
|--------------------------|------|---|--------------------------|------------------|
| 1:(June 25- June 29) | R,28 | Introduction CH 15: Mechanical Waves | L1: Waves (Online) | |
| 2: (July 2- July 6) | M,2 | CH 16: Sound | | |
| | T,3 | CH21: Electric Charge & Field | Quiz:1 | Test 1(CH:15,16) |
| | W,4 | | | |
| | R,5 | CH21: Electric Charge & Field | L2: E. Field | |
| 3:(July 9- July 13) | M | CH22: Gauss's Law | | |
| | T | CH 23: Electric Potential | | |
| | W | CH:24 Capacitance | | |
| | R | CH:24 Capacitance | L3: Equipotential | Quiz 2 |
| 4: (July 16- July 20) | M | CH25: Current | | Test 2 (CH21-24) |
| | T | CH 26: DC Circuits | L4: Ohm's Law | |
| | W | CH 26: DC Circuits | | |
| | R | CH 27: Magnetic field | L5: Resistivity | Quiz 3 |
| 5:(July 23- July 27) | M | CH 27: Magnetic field | | Test 3(25-26) |
| | T | CH28: Sources of Magnetic Field | L6: Kirchhoff's Rules | |
| | W | CH 29: EM Induction | | |
| | R | CH 30: Inductance | L7: e/m calculation | Quiz 4 |
| 6:(July 30 – Aug. 3) | M | CH:31 AC Current | | Test 4(CH27-30) |
| | T | CH 31: AC Current | L8: AC Circuit | |
| | W | CH 33: Propagation of light | | |
| | R | CH 33: Propagation of light | | |
| 7:(Aug 6- Aug. 10) | M,6 | CH 34: Geometric Optics | | Quiz 5 |
| | T,7 | CH 34: Geometric Optics | L9: Lenses | |
| | W,8 | CH 35: Interference, CH36: Diffraction | | |
| | R,9 | Final Exam | | |

This schedule is subject to change at any time by instructor. Students get notification of any changes or updates.

You can access lab manual from <https://blogs.nvcc.edu/tstantcheva/laboratory/phy-2xx-labs/ac-circuits/>

LAB REPORTS

1. General:

- Student must submit typed report for each laboratory work.
- Calculation and Graph must be untestable to instructor.
- All questions at the end report must be clearly answered. Need to show explicit calculation for mathematical questions.
- Handout could be important for you, make a copy before turning in

2. Format:

- First (Cover) page: a) Name of experiment, b) Your name c) Date
d) Name of your lab partners (Small Font)
- State objectives
- State relevant theory and mathematical relation(s) you will be using
- Data sheet (if provided, use them)
- Result: The final result of your work
- **Discussion/Conclusions: Discuss whether you achieved the objective or not. Factors affecting your work. Write down couple of sentences. Explain sources of error(s) do not include human error.**
- **Answer post lab questions (if any) individually and attach with the report.**

3. Remember

- Turn in hard copy of a lab report. Digital copy is not accepted
- Graph should be on a full page
- Use lap computers/laptop to analyze the data and to print the graph.
- **You can't use lab printer to print your lab report**
- Do not save your data on a lab computer, use a flash drive/cloud/ take note

4. Rubric:

Labs are graded on 20 points.

15 points : *Cover page [With Lab Number, Your name, Name of Partners]*

Objective

Theory

Data Collection (should be clean)

Result presentation:

Graph, Discussion/conclusions and error analysis

5 points

Post lab. Questions