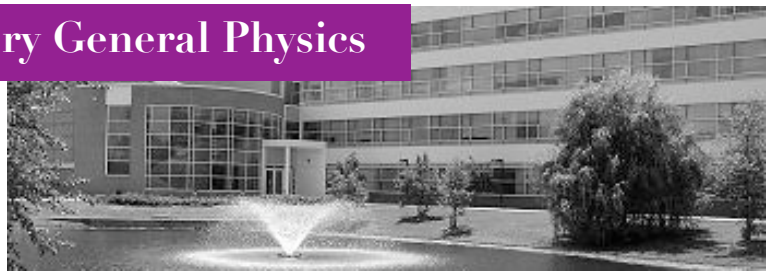
Fall 2007

Physics 111N - Introductory General Physics



Course Description

In this course you will be introduced to some core topics in physics - the study of motion, or *mechanics*; the propagation of waves in substances and basic ideas of heat and temperature, or *thermodynamics*.

Through lectures, laboratories, reading and homework problem solving you will learn how to describe simple physical processes in terms of the laws of physics in their mathematical formulation.

Prerequisites

Since there is a considerable mathematical (algebraic, no calculus) component to this course you are required to have completed Math102M, Math162M, Math166 or an equivalent. *If you have not passed such a course it is vitally important that you contact me before the semester begins.*

Math preparation

All students should ensure that they can answer all questions on the math quiz *(www.physics.odu.edu/~dudek/phys111N/fall07/math_prep_quiz.pdf)* before the semester begins. If you are unable to answer a majority of the questions you should contact me.

Textbook

The lectures will follow the material in:

> **Sears & Zemansky's College Physics, Vol. 1 (8th Edition)**
>
> *Young & Geller* (Addison-Wesley 2006)

For homework problems you will require the **MasteringPhysics Student Access Kit** supplied with new copies of the above textbook. If you have bought a used copy of the textbook you can buy access to **MasteringPhysics** online using a credit card (*www.masteringphysics.com*).

The laboratory work requires a copy of the **Physics 111 & 231 Laboratory Manual, 12th Edition.**

Lecturer

Prof. Jozef Dudek
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Office Hours

Tuesday 4pm-5pm in the **Physics Learning Center** (**OCNPS 142**) and **Thursday 3pm-6pm** in **OCNPS 325**

Help with any aspect of physics is available from other students and faculty members in the **Physics Learning Center** (**OCNPS 142**), Monday-Friday 9am-5pm.

Lectures

Tuesday 11.00am - 12.15pm, OCNPS Room 200

Thursday 11.00am - 12.15pm, OCNPS Room 200

Lectures are designed to help clarify material that you will find in the course textbook. In part this will be achieved through solving illustrative problems of the type set as homework. In order to get the most from the lectures I strongly advise reading the appropriate textbook sections *before* the lecture. Re-reading the material after the lecture is recommended.

Homework

Physics is best learnt by attempting to solve problems, in this way one becomes familiar with the concepts and comfortable with the mathematical methods required.

Homework assignments will be set and your answers collected using the **Mastering Physics** online service. You must be sure to have the Student Access Kit that comes with your copy of the course textbook - this contains a code that allows you to register at the website *www.masteringphysics.com* . Once registered with the service you

should put yourself on the class-list for this course using the code **DUDEK10076**. It is advisable to register in this way as soon as you can.

Homework will be set as we progress through the course.

N.B. No individual extension of assignment submission dates will be given

Assignment solutions will be posted at the web address *www.physics.odu.edu/~dudek/Phys111N*

Although you will submit your homework assignment answers through **Mastering-Physics**, it is advisable for you to keep copies of your working and answers on paper for future reference and especially for examination preparation.

Laboratory

Attendance is required in the laboratory portion of this course. Any student with more than one absence will fail the laboratory and hence the entire course. **You must hand in a lab report to get credit for the session.** If you cannot avoid missing a lab session, contact the instructor *in advance*.

You should bring with you to the lab session a scientific calculator and a copy of the laboratory manual. The lab instructor will detail the format of lab reports and the grading criteria to be applied.

Physics Learning Center

The Physics Learning Center, located in Room 142 OCNPS, is a place where students can get together to work on their homework and get assistance, if needed, from physics faculty and grad students. No appointment is necessary. Students in any introductory class are encouraged to drop by the Learning Center for help on homework, lab, lecture, other course material, or just for a place to work while in the physics building.

The Physics Learning Center will be open all week during normal business hours. A physics staff member will be on duty to help students approximately 20 hours per week. A detailed staff schedule will be posted on the door to Room 142 and on the web at *www.physics.odu.edu/learning/schedule.html* Students are encouraged to use the room to work together on their assignments, even when a physics staff

member is not available for tutoring. Note: the Physics Learning Center will be open starting the second week of the classes.

University Honor Code

You are expected to conform to the University Honor Code in all aspects of your conduct in this course.

Examinations

This course will contain two mid-term examinations and a final. The final exam will contain questions taken from all subject areas covered in the course.

No make-up examinations will be offered. If you must miss a test, contact me as soon as possible. If, and only if, you have a very good reason for your absence, your score for the missed test will be whatever you score on the final.

All examinations are closed book. You are advised to bring along a calculator. You will be permitted a formula-sheet of your own construction (both sides of a 8½″ ×11″ sheet) which may not contain any words. You must hand in your formula-sheet along with your test and you will lose points if there is anything but formulae on your sheet.

Final Course Grade

A letter grade will be assigned at the end of the course on the basis of numerical scores obtained from the two mid-terms, final exam, laboratory work and assigned homework. The weighting will be *approximately* as follows

Best score from the two mid-term examinations	30%
Laboratory	20%
Homework	15%
Final Examination	35%

N.B. You must receive a passing grade in the lab to pass the course

Course Syllabus

from **Sears & Zemansky's College Physics, Vol. 1 (8th Edition)** *Young & Geller* (Addison-Wesley 2006)

Tuesday & Thursday 11.00am - 12.15pm, OCNPS Room 200

Date	Chapter(s)	Material
Tue. Aug 28th	1	Introduction
Thu. Aug 30th	1	Models, Measurements & Vectors
Tue. Sep 4th	2	Motion in a straight line
Thu. Sep 6th	2	Motion in a straight line
Tue. Sep 11th	3	Motion in a plane
Thu. Sep 13th	3	Motion in a plane
Tue. Sep 18th	4	Newton's Laws
Thu. Sep 20th	4/5	Newton's Laws & Applications
Tue. Sep 25th	5	Newton's Laws & Applications
Thu. Sep 27th	1-5	Recap
Tue. Oct 2nd	1-5	**First Midterm**
Thu. Oct 4th	6	Circular motion
Tue. Oct 9th		**Fall Holiday**
Thu. Oct 11nd	6	Gravitation
Tue. Oct 16th	7	Work & Energy
Thu. Oct 18th	7	Work & Energy
Tue. Oct 23th	8	Momentum
Thu. Oct 25th	8	Momentum
Tue. Oct 30th	9	Rotational Motion
Thu. Nov 1st	10	Dynamics of rotational motion
Tue. Nov 6th	11	Periodic Motion
Thu. Nov 8th	12	Waves & Sound
Tue. Nov 13th	6-12	Recap
Thu. Nov 15th	6-12	**Second Midterm**
Tue. Nov 20th	12	Waves & Sound
Thu. Nov 22nd		**Thanksgiving Holiday**
Tue. Nov 27th	13	Fluid Mechanics
Thu. Nov 29th	14	Temperature & Heat
Tue. Dec 4th	14	Temperature & Heat
Thu. Dec 6th	1-14	Review
Thu. Dec 13th	1-14	**Final (12.30pm-3.30pm)**