

PHYSICS 101 – Fundamentals of Physics I

Fall 2009-2010 CRN 12806

Course Description:

First of a four course sequence teaching fundamental physics to engineering and science majors. Topics include: description of motion, inertial and non-inertial frames, special relativity, Newton's Laws, translational and rotational equilibrium, one- and two-dimensional motion, fundamental forces, inverse square laws, Gauss' Law, Bohr's quantization, rotational dynamics, potential energy, black holes, determinism and chaos.

Credits: 0.00 or 4.00

College: Arts and Sciences

Department: Physics

Restrictions:

Must be enrolled in one of the following Program Level(s): Undergraduate Quarter

Co-Requisites: EXAM 080

Pre-Requisites: MATH 121 Minimum Grade: D or PHYS 100 Minimum Grade: D

Course Meetings:

PHYS	101	Lecture	A	Disque 108	
12806	Fundamentals of Physics I	MW	10:00 am - 10:50 am		Joseph Trout

Recitation/Discussion

001	12807	WF	02:00 pm - 02:50 pm	Curtis 352	Hayley Finley
002	12808	WF	03:00 pm - 03:50 pm	Curtis 454	Hayley Finley
003	15552	WF	09:00 am - 09:50 am	Curtis 353A	Vishal Kasliwal
004	15553	WF	04:00 pm - 04:50 pm	Cat 77	Vishal Kasliwal

Lab Disque 820B

060	12809	T	09:00 am - 10:50 am	Vishal Kasliwal
061	12810	T	11:00 am - 12:50 pm	Vineet Kaur
062	12811	T	01:00 pm - 02:50 pm	Hayley Finley
063	15554	T	09:00 am - 10:50 am	Vineet Kaur
064	15555	T	11:00 am - 12:50 pm	Allyson O'Brien

Text Required: University Physics 12th Edition by H.D. Young and R.A. Freedman
Pearson/Addison Wesley
Physics Lab Manual by R. Ramos and S. Tyagi,
Pearson/Addison Wesley

Course Schedule: See attached calendar.

Contact Information:

Teaching Faculty: Dr. Joseph J. Trout

Cell Phone: 610-348-6495

Office Phone: 215-895-1887

Office: Disque 902

Office Hours:

Monday 2:00 – 4:00

Thursday 8:00 – 10:00

Email: st9217c3@drexel.edu

www.physics.drexel.edu/~joetrout

Teaching Assistants - Contact Information:

Vishal Kasliwal	vpk24@drexel.edu	(215)895-1544	Disque 809
Vineet Kaur	vk75@drexel.edu	(302)983-9956	
Hayley Finley	hlf25@drexel.edu	(215) 895-2732	Disque 705
Allyson O'Brien	amo45@drexel.edu	(215) 895-2732	Disque 705
Swati Nigam	sn389@drexel.edu		

Topical Outline:

<i>Week</i>	<i>Date</i>	<i>Topic</i>	<i>Chapter</i>	<i>Recitation Problems</i>
1	09/21/09	Introduction to Vectors Motion along a Straight Line	1,2	1.1, 1.9, 1.21, 1.31, 1.37, 2.1, 2.3, 2.9, 2.13, 2.21
2	9/28/09	Motion along a Straight Line Motion in Two and Three Dimension	2,3	2.35, 2.39, 3.5, 3.9 (a-c), 3.12, 3.18, 3.29, 3.33, 3.47
3	10/05/09	Newton's Laws of Motion	4	3.31, 3.35, 3.54, 4.4, 4.12, 4.24, 4.28, 4.31
4	10/12/09 University Holiday Columbus Day	Applying Newton's Laws	5	4.20, 4.30, 4.34, 4.43, 4.50, 5.2, 5.8, 5.10, 5.20, 5.33
5	10/19/09 First Exam	Applying Newton's Laws Work and Kinetic Energy	5,6	5.50, 5.67, 5.100, 6.3, 6.10, 6.16, 6.19, 6.36, 6.40, 6.46
6	10/26/09	Work and Kinetic Energy Potential Energy and Energy Conservations	6,7	6.57, 6.63, 6.77, 6.82, 7.2,7.16,7.29,7.38, 7.42
7	11/02/09	Potential Energy and Energy Conservations	7	7.30, 7.32, 7.34, 7.56, 7.66, 8.50, 8.52, 8.4, 8.12, 8.29
8	11/09/09	Momentum, Impulse, and Collisions	8	8.18, 8.38, 8.41, 8.46, 8.58, 9.1, 9.4, 9.10, 9.20, 9.34
9	11/16/09 Second Exam	Momentum, Impulse, and Collisions Rotation of Rigid Bodies	8	8.39, 8.42, 8.43, 8.45, 8.59, 9.9, 9.13, 9.23
10	11/23/09	Rotation of Rigid Bodies Dynamics of Rotation	9, 10	9.10, 9.14, 9.19, 9.28, 9.34, 9.40
11	11/30/09	Dynamics of Rotation	10	10.1, 10.9, 10.27, 10.36, 10.41
12	12/07/09	Final Exam		

Holidays:

10/12/09 Columbus Day – University Holiday

11/24/09 – 11/27/09 Thanksgiving – Classes Resume 11/30/09

Notes: 10/30/09 Last Day to Withdraw from Classes

Reading Assignments: Read chapter prior to class.

Textbook: Ser and Zemansky's University Physics, 12th ed., Young and Freedman. 2007. Addison Wesley.

Please note that this book comes with an access code for the website, "mastering physics."

To get started, please go to: <http://www.masteringphysics.com/site>

Course Overview:

Typically cover about a chapter each week (our goal is to get up to Chapter 10 in your book), so make sure you are up-to-date on your reading. We will meet twice a week for 1 hour. Lectures will consist primarily of information based on the readings, though there will also be some in-class demos.

- Prior to each lecture, you should read the assigned material.
- You are obviously expected to attend all lectures, and there is an explicit class participation component to your final mark.
- For most lectures, but not every lecture, an attendance sheet will be passed around and you will sign in.

Recitation:

- More informal part of the class.
- You will meet in smaller (approximately 20/section) groups with your TA.
- You will discuss the homework, do additional problems from the book , and go over concepts that you are having difficulty with.
- Recitation sections are a required part of the course, and your attendance and participation will be included in the class participation component of your grade.

Course Website: Please note we will use blackboard or vista for this class. All handouts, practice exams, notes, announcements, grades, etc. will be posted on banner/webct. (see one.drexel.edu) A secondary source can be found on www.physics.drexel.edu/~joetrout. The secondary source can be used if banner/webct is unavailable. This secondary source will NOT contain all the material found on the official website and will have no grades posted. Please use my Drexel email, st9217c3@drexel.edu to contact me.

Grade Breakdown:

Class Participation	10%
Homework	15%
Laboratory	15%
Two Mid Terms (15% each)	30%
Cumulative Final	30%

Total: 100%

Class Participation (10%):

- Occasional attendance will be taken in in lecture, and it is expected that you be there.
- Your recitation instructors will take attendance every week.
- Make sure you show up, have done your recitation problems, and are ready to ask questions and learn.

Homework (15%):

Homework in this class will take two forms.

1. Every Monday (today included), a new assignment will be posted on the "Mastering Physics" site. It will be due at midnight the next Monday.
 - While you can discuss general topics from the class with your friends, it is expected tat you do the work on your own.
 - Each assignment will consist of 3-5 problems with multiple parts.
 - The system gives you opportunities to get hints and take multiple attempts, but you should definitely contact me or your TA if you are having difficulty.
2. On Wednesday of weeks 2, 5, and 8, you will be given a written assignment in recitation, to be turned in a week later.
 - These problems will be ones I make up as well as a few from your book.
 - The reason for these is that we want to give you an idea of how we grade and the sort of problems I like to give before you take any of your exams.
 - As a guideline, half the points are given for your answer, and half the points are given for your work, so be sure to be clear about how you solve your problems.

Labs (15%):

- ◆ There will be four labs over the course of the term.
- ◆ Even numbered labs sections will meet ONLY in even numbered weeks (2,4,6,8), and odd numbered sections will meet ONLY in odd numbered weeks (3,5,7,9).
- ◆ All labs are held in Disque 820A.
- ◆ You are expected to read over the purpose and theory prior to lab section, as well as do your pre-labs.
- ◆ You will not be able to start your labs unless you have done so.
- ◆ You will also get a significant penalty on your lab score if you show up without doing your pre-lab.
- ◆ Students in each group work together as a team to collect data. The students themselves decide upon the responsibilities of each group member, although all should make roughly equal contributions.
- ◆ Each group must submit a copy of the data sheet, with all members signing it before leaving the laboratory. Each student should also keep a copy of the experimental data for use in his/her lab report.

Exams (15% each, 30 % total):

- During weeks 4 and 8 of term, we will have exams from 8-9am.
- Rooms and days will be announced shortly.
- These exams will be comprehensive and closed book.
- It is expected that you bring a calculator.
- It is important that you show all of your work in addition to getting the correct answer.
- The exams consist of 4 to 8 multiple choice questions and 2 to 3 long problems.

Final Exam (25%):

During finals week, you will have a cumulative exam.

Actual date and room assignment will be posted later in the semester.

Anything/everything that we've discussed in class is fair game.

The exam will be closed book and an equation sheet will be provided.

Grading Scheme:

A+	98 - 100
A	93 - 97
A-	90 - 92
B+	87 - 89
B	83 - 86
B-	80 - 82
C+	77 - 79
C	73 - 76
C-	70 - 72
D+	67 - 69
D	63 - 66
D-	60 - 62

F 59 and below.

Academic Policies:

Attendance is required. If you must miss class due to work, personal illness or injury, or family illness, injury or death, please e-mail me as soon as possible. Attendance will be taken. Lateness cannot be tolerated. It disrupts class and will also disrupt your academic achievement. In regards to civility, this is a college course and you will be expected to act accordingly. There will be no foul language or disrupting other students or the class. Class participation will be expected, but not graded. There will be no make-up for missed assignments. Assignments will be turned in on time. Problems due to personal injury/sickness or family injury/sickness will be handled on a case-by-case basis. Academic Integrity is the same as is expected in any academic environment. No cheating or copying of assignments or answers to test will be tolerated. Any cheating will result in an F in the course.

Please feel free to call or email me with any questions or concerns regarding the class at any time. I will do my best to get back to you as soon as possible. I prefer that you talk to me directly if you are experiencing any difficulties with any of the material.

		Fall 2009 – 2010							Disque 820 B		
		09/22/09	09/29/09	10/06/09	10/13/09	10/20/09	10/27/09	11/03/09	11/10/09	11/17/09	11/24/09
Week:		ONE	TWO	THREE	FOUR	FIVE	SIX	SEVEN	EIGHT	NINE	TEN
09:00	09:30	12809	15554	12809	15554	12809	15554	12809	15554	12809	15554
09:30	10:00	Phys 101 – 60	Phys 101 – 63	Phys 101 – 60	Phys 101 – 63	Phys 101 – 60	Phys 101 – 63	Phys 101 – 60	Phys 101 – 63	Phys 101 – 60	Phys 101 – 63
10:00	10:30	Lab One	Lab One	Lab Two	Lab Two	Lab Three	Lab Three	Lab Three	Lab Three	Lab Four	Lab Four
10:30	11:00	Speed of Light	Speed of Light	One and Two Dimensional Motion	One and Two Dimensional Motion	Simple Harmonic Motion (Springs)	Simple Harmonic Motion (Springs)	Simple Harmonic Motion (Springs)	Simple Harmonic Motion (Springs)	Conservation Laws (Collisions)	Conservation Laws (Collisions)
11:00	11:30	15555	12810	15555	12810	15555	12810	15555	12810	15555	12810
11:30	12:00	Phys 101 – 64	Phys 101 – 61	Phys 101 – 64	Phys 101 – 61	Phys 101 – 64	Phys 101 – 61	Phys 101 – 64	Phys 101 – 61	Phys 101 – 64	Phys 101 – 61
12:00	12:30	Lab One	Lab One	Lab Two	Lab Two	Lab Three	Lab Three	Lab Three	Lab Three	Lab Four	Lab Four
12:30	13:00	Speed of Light	Speed of Light	One and Two Dimensional Motion	One and Two Dimensional Motion	Simple Harmonic Motion (Springs)	Simple Harmonic Motion (Springs)	Simple Harmonic Motion (Springs)	Simple Harmonic Motion (Springs)	Conservation Laws (Collisions)	Conservation Laws (Collisions)
13:00	13:30	12811		12811		12811		12811		12811	
13:30	14:00	Phys 101 – 62		Phys 101 – 62		Phys 101 – 62		Phys 101 – 62		Phys 101 – 62	
14:00	14:30	Lab One		Lab Two		Lab Three		Lab Three		Lab Four	
14:30	15:00	Speed of Light		One and Two Dimensional Motion		Simple Harmonic Motion (Springs)		Simple Harmonic Motion (Springs)		Conservation Laws (Collisions)	

PHYSICS 101 – Fundamentals of Physics I

Fall 2008-2009

Labs

You must complete each of the four labs. There are NO exceptions. If you miss a lab for legitimate reasons, you may make up the lab, but the lab must be completed or you will receive an F for the course. If you miss a lab contact me and your lab instructor immediately by e-mail. (st9217c3@drexel.edu) It is important that you understand that you will receive an F for the entire course, not just for the lab missed or the lab section of the course. If you miss a lab, and you do not have a valid excuse, you must still make up the lab but you will be penalized 25 points on that lab.

I, _____ (print your name) understand that I must complete ALL four labs or I will receive an F for the course.

Signature: _____

Lab Section: _____

e-mail: _____

My Best Advice:

Don't miss lab.

Attending your assigned lab will make your life, my life and the life of your TA so very much easier.

Missing lab will complicate your life, my life and the life of your TA, which can never be a good thing.