



## Physics 105: Fundamentals of Physics Spring 2017.

### Welcome!

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**Instructor:** Dr. Rebecca Rosenblatt

**Office:** 313A Moulton Hall

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**Office Hours:** Monday at 5:15 (after class) & Wednesday 3 pm (before class)

### Course Meeting Times:

Lecture: M,W Moulton Hall Room 208, 4:00 pm - 5:15 pm

Lab: T Moulton Hall Room 203, 8:00 am - 11:00 am

Moulton Hall Room 203, 1:00 pm – 4:00 pm

Moulton Hall Room 203, 6:00 pm – 9:00 pm

R Moulton Hall Room 203, 8:00 am - 11:00 am

(Please attend your assigned lab time unless previous arrangements have been made with your instructor.)

## Course Description

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### Introduction

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Welcome to Physics 105, Fundamentals of Physics! This class is an Algebra and Vector based introduction to fundamental physics. The lectures and lab sessions are designed to provide an active learning experience with illustrations and practical demonstrations of applied fundamental physics concepts.

The weekly lab is designed to give you the opportunity to explore the concepts you have encountered in lecture and integrate your knowledge into a more global understanding or theory and practice.

**Also there will be open office hours every week to give you one-on-one assistance if you need more help; do not be bashful about taking advantage of these!**

In order to succeed in Physics 105, you must not fall behind! This course covers a large amount of new material, and the understanding of new topics usually requires mastery of previous material.

## **Course Components: All Course Materials Covered in Class will be available via reggienet in Resources and Materials!**

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### **Lectures:**

The primary focus of the lecture will to convey the basics of each chapter, work on example problems, and practice simple concept and mathematical problems to test our understanding and point out areas of each topic that can be tricky for students.

In order to provide an environment more conducive to participation and interaction, each student will have a clicker with which to answer various questions during lecture. You will receive one “point” based on your participation in each lecture. (See the quiz section for how these “points” can be used.)

During times when you are working on a clicker question or we are solving problems together, students should work with those around them to discuss their ideas.

This format allows the instructor and the students to pinpoint problems in understanding and deal with them before moving on. The purpose is to help your understanding, and your participation is critical.

### **Clickers**

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We will be using clickers in every lecture. If you have not already done so, please register your clicker by visiting Reggienet. **Answering with another student’s clicker, or having another student answer questions using your clicker, is a serious academic violation!**

### **Homework:**

Each week will have suggested homework problems from the book. These problems will help you to learn the material and prepare you for doing well on the quizzes and tests. They are not graded directly but inability to do these problems usually leads to poor exam and quiz scores.

### **Lab Session:**

Each of the three-hour laboratories will involve a series of activities, including (i) setting up simple experiments to study topics studied in class, (ii) making predictions about the outcome of your experiments, (iii) performing measurements of different phenomena you have studied, (iv) working through worksheets designed to mesh the theory with the hands on activities (v) analyzing your results, and (vi) answering questions concerning

your results and predictions. In addition, at the end of each lab, you are expected to turn in response to a subset of the lab questions and findings. These will be graded for correctness and counted as part of the total lab score. Some labs will have additional reports which must be completed after class and turned in the following week if there is insufficient time for students to complete these during the lab time allotted.

The lab sections start the second week of the course.

### **Hour Exams and Final Exam:**

Three 75 minute multiple-choice exams and a Final exam will be given. (See the schedule for the dates.)

The lowest of the exam scores will be dropped. Scores will be posted in the gradebook as soon as possible following the exam. A formula sheet will be posted before the exam.

The final exam is comprehensive and will not be dropped.

### ***Any conflicts with exams must be discussed with the instructor prior to the exam.***

Make up exams will be scheduled at the instructor's discretion. In cases of illness or similar last minute, unavoidable conflicts, arrangements will be made only for those with appropriate documentation (e.g. a doctor's note indicating that the student could not attend due to illness). Because of the lowest exam score being dropped, make up exams will be given only for extreme situations.

### **Quizzes:**

Most weeks there will be a quiz on wednesday about material covered in the previous weeks laboratory and lecture periods. (13 quizzes in all.) Practice quizzes will be posted to study from. You may drop 1 quiz for free; this is designed for illness or unavoidable life issues. For each 6 lecture participation "points" earned you may drop an additional lowest quiz score. There are 28 lecture days so you can drop up to 4 additional quizzes. (There will not be additional make ups for quizzes available.)

One of these 13 quizzes is a flex quiz that you will complete toward the end of the semester. Mr. Raymond Zich will contact you about this quiz. He will arrange a time at your convenience to participate in a 50 minute activity session which will be graded on completion of the activities in this session.

### **Gradebook**

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You will be able to view your grades on all components of the course using the course gradebook through reggienet. During the semester, you should check that your lab and quiz grades are correctly entered in the gradebook; any problems here should be brought to the attention of your instructor immediately.

## Grading

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Your final grade for Physics 105 will be based upon your total score on all the components of the course. The total possible score is 500 points, broken down as follows:

Course Component	Points
Quiz scores	100
Labs	100
3 Hour Exams (100 each with 1 being dropped)	200
Final Exam	100

The breakdown of total points versus course letter grade will be approximately:

**A (450), B (400), C (350), D (300), and F(<300).**

## Academic Integrity

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All activities in this course are subject to the Academic Integrity rules. Infractions include, but are not limited to: cheating, plagiarism, fabrication, academic interference, computer-related infractions, unauthorized use of university resources, sale of class materials or notes, and facilitating infractions of academic integrity. Violations of any of these rules will be prosecuted and reported to the home college of the student. All aspects of the course are covered by these rules, including quizzes, clickers, exams and labs.

## 105 Weekly Schedule (Subject to Change!)

Week #	Date	Weeks with No Lab	Quiz	Exam	Ch
1	1/16/2017	No Lab			1
2	1/23/2017	Lab 1 – G Disk			2
3	1/30/2017	Lab 2	#1 2/1/2017		3
4	2/6/2017	Lab 3 – Addition of forces	#2 2/8/2017		4
5	2/13/2017	Lab 4 – Acceleration of Gravity	#3 2/15/2017		5,6
6	2/20/2017	Lab 5 – Newton's Second Law	None	Ch 1-5 Exam 1 2/22/2017	6
7	2/27/2017	Lab 6 – Centripetal force	#4 3/1/2017		7
8	3/6/2017	Lab 7	#5 3/8/2017		8
9	3/13/2017	Spring Break			
10	3/20/2017	Lab 8 - Simple Harmonic Motion	#6 3/22/2017		13
11	3/27/2017	Lab 9 – Velocity of Projectile	#7 3/29/2017		15
12	4/3/2017	Lab 10	#8 4/5/2017	Ch 6,7,8,13 Exam 2 4/3/2017	20
13	4/10/2017	Lab 11 - - Latent Heat	#9 4/12/2017		20
14	4/17/2017	Lab 12 - Specific Heat	#10 4/19/2017		21
15	4/24/2017	Lab 13- Ohms Law	#11 M:4/24/2016	Ch 15,20,21 Exam 3 4/26/2017	22
16	5/1/2017	Lab 14	#12 5/3/2016		17 & 18

