50:750:203 - General Physics I

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Phone	856-225-6293	Office Hours	TBA
Office	CNS 216E	Final Exam	TBA

Class meeting time: T & TH, 2:00 p.m. - 3:20 p.m, CNS 201

Description:

This course is the first part of the General Physics tandem, which are algebra-based physics courses taught mostly to Biology and Pre-Health majors. While there are no prerequisites for the course, you will be expected to use algebra, geometry, and trigonometry in order to solve problems.

During the course of this semester you will become familiar with the principles of physics that rule the motion of objects e.g. Newton's laws of motion. You will also be introduced to the concept of using mathematics to describe physical phenomena. The overall goal of this course is to gain a better understanding of the laws of physics which govern our universe.

Co-requisite: 50:750:133 Laboratory. The grade for the laboratory is assigned by the laboratory instructor and is separate from the lecture grade. If you are not co-enrolled in a laboratory section, you will be automatically dropped from the lecture.

Specific Student Learning Outcomes (SLOs) Objectives:

1. Utilize the problem-solving process and develop critical thinking skills.
2. Analyze and solve a variety of problems using trigonometry, algebra, and geometry.
3. Understand laws of motion and causes.
4. Use the concepts of work and energy to solve problems.
5. Understand momentum and its role in collisions.
6. Understand rotational motion and its relationship to translational motion.
7. Correctly define mechanical equilibrium.
8. Gain an introduction to waves and their properties.

Class Resources:

Our course website can be found on Canvas. All course materials, announcements, grades, and assignments will be posted here.

Textbook:

Great news: your textbook for this class is available for **free** online!
College Physics from OpenStax, ISBN 1-947172-01-8

You have several options to obtain this book:

- View online (Links to an external site.)
- Download a PDF (Links to an external site.)
- Order a print copy (Links to an external site.)
- Download on iBooks: Part One, Part Two (Links to an external site.)

You can use whichever formats you want. Web view is recommended -- the responsive design works seamlessly on any device.

For additional reading, you are welcome to purchase the following textbook, but it is not required. I will supply problems and solutions from this book:

"**Physics**," Cutnell & Johnson, Vol. 1 – **10th** Edition.

ISBN : 978-1-118-48689-4, *Hardcover*, contains both Vol. 1 & 2

ISBN : 978-1-118-89917-5, *E-Text*, contains both Vol. 1 & 2

Student Response Device:

We will be using an app based student response device for this class for attendance, active-learning, as well as in-class quizzes. You can use this app on any device you wish to bring to class (phone, tablet, or laptop).

You will be required to purchase an iClicker Reef subscription for either the semester or the entire year, depending on whether or not you will be taking General Physics II. You will receive a free 14-day trial when you sign up for the account.

Online Practice Problems:

We will be using OpenStax Tutor for homework and practice problems. You can sign up for an OpenStax Tutor account and access assignments from within our Canvas course site. There will be a $10 per semester fee.

Total cost of course supplies:

	1 semester only	Both semesters
OpenStax Textbook	FREE	FREE
iClicker Reef	$15.99	$24.99
OpenStax Tutor	$10.00	$20.00
Total	**$26.99**	**$44.99**

Attendance Policy:

This class will only be offered in person, and thus your attendance is expected at every class meeting. 10% of your final grade will be based on attendance and participation. I understand that with COVID-19, many emergencies and scheduling difficulties may arise. Thus, I will give everyone **four** excused, no-questions-asked, absences for the semester. After these absences, excused absences will be at my discretion. Please note, that "no-questions-asked" absences cannot be used on an exam day. Documentation must be provided and confirmed by the Dean of Students Office to be excused from an exam.

Grading:

4 in-class examinations (3 semester + 1 final	60% of final grade (15% each x 4)
Electronic responses and attendance	10% of final grade
OpenStax Tutor assignments	15% of final grade
Quizzes	15% of final grade

- Specific questions regarding exam points are permitted, however, all disputes must be presented within one week of receiving your exam grade. I.e., I will not consider any exam grade changes at the end of the semester.
- A curve may or may not be implemented depending on the class average. Do not count on a curve as it is not guaranteed. If a curve is not applied, letter grades will be assigned based on the following ranges:

A	89.50 - 100%	C	66.50 - 75.49%
B+	86.50 - 89.49%	D	55.50 - 66.49%
B	79.50 - 86.49%	F	<55.49%
C+	75.50 - 79.49%		

*Please note, these numbers already reflect rounding and no additional rounding will be implemented. Emails requesting additional grade rounding will not be responded to.

- Attending the lecture is not enough. Take notes in class and read the relevant sections in the textbook. In addition, make sure to review all example problems and attempt all the homework problems.

Exams and Quizzes:
- There will be four exams throughout the semester. Exams will be given in person during our regularly scheduled class period.
- Exams will not officially be cumulative, however, many topics build upon previous chapters.
- Exam dates are set in the syllabus (see schedule below).
- There will be a minimum of four quizzes throughout the semester. Quizzes may be either announced or unannounced.

Extra Help:
- I will holding two hours of office hours per week. Office hours will usually be virtual, via BigBlueButton.
- If you are unable to attend scheduled office hours, I will do my best to accommodate alternate scheduling, but please keep in mind that there are many of you and one of me!
- Please come to office hours prepared with specific questions. In other words, office hours are not a substitute for independent studying or tutoring.
- Types of questions that are acceptable in office hours:
    - "Can you explain why you plugged in this value here?"
    - "Can you explain why you used this equation?"
    - "I got up to this part but don't know where to go next. Can you help me figure out the next step?"
- Types of questions that are not acceptable during office hours:
    - "I haven't been attending lectures and don't have time to watch them. Can you review everything you've done in class for the past week?"
    - "I don't understand any of the homework problems or the OpenStax problems. Can we go through them all together?"
    - "I am confused about chapters 1, 2, and 3. Can you help me?"
- I will be adding a question thread on Canvas where you can post questions and help each other. This will not be mandatory, but highly encouraged. Helping someone else is the best way to gauge your own understanding!
- Tutoring is available through The Learning Center. Please see the Student Resource section on Canvas for details. Tutoring appointments for Physics book up very quickly so I advise that you book sessions early.

Additional details:
- Please note that it is necessary to explain all steps that you take on exams – make an effort to *clearly* show your work. Full or partial credit will only be granted for answers that can be clearly followed. Answers without justification will not be accepted (even if the final answer is correct)!

- Do not excessively use cell phones in class or disrupt class in any way. If you do so, you will be asked to leave and will not be welcomed back for the rest of the class period.

- You are not permitted to record class.

- Attendance is strongly suggested at all class meetings. Your class participation grade (10%) will be based on your electronic responses in class. Excused participation points may be granted on a case-by-case basis at the instructor's discretion, however, must be requested in a timely fashion. Please note: Responding to iClicker questions for an absent friend will be considered an academic integrity violation and will be reported.

- *There are no make-up exams*. If you must miss an exam, you must provide acceptable documentation to the Dean of Students Office. They will verify your excuse and contact me. In addition to providing documentation, you should make every effort to inform me ahead of time if you will be missing an exam. Failure to contact me in a timely fashion may result in a zero for that exam. If proper procedures are adhered to for an exam absence, that exam will be excluded from your exam average. Missing an exam without proper documentation will result in a zero that cannot be dropped.

- Homework will be assigned for each chapter, both on paper, and through OpenStax Tutor. The homework through OpenStax Tutor will be graded, but the paper problem solving will not be collected nor graded. Both are equally important and you will not pass this class if you do not do problem solving. Exams will be based on these problems, OpenStax Tutor questions, iClicker questions, and lecture notes.

- In addition to exams, I reserve the right to administer quizzes that will count towards your final grade. There will be no make-up quizzes. Students missing a lecture quiz will receive a zero for that quiz. The lecture quizzes are intended to assess your study habits and help you stay on track.

Academic Integrity Policy:

I take academic integrity **very** seriously and will report and follow through with all violations. As a student at Rutgers University-Camden, you have agreed to adhere to the Academic Integrity Policy which you were provided with upon enrollment. In addition to the written University policy, some additional guidelines apply specifically to our class:
- You are not permitted to give or receive help on a graded assignment unless otherwise advised.
- You will be asked to show work for some graded assignments (for example, problem solving on exams). Answer only responses may be considered a violation of academic integrity.
- All material in this course is my property, and posting it online outside of our Canvas site is strictly prohibited and will be considered an academic integrity violation. This includes, but is not limited to, websites like Chegg or Reddit.
- Group chats which take place during graded assignments will be considered a violation of academic integrity. If you are in a group chat, you could be held accountable, even if you do not contribute.
- Responding to iClicker questions for a friend who does not come to class is considered an academic integrity violation.
- If you wish to report an academic integrity violation in our class, I will keep your identity anonymous.
- If you are unsure if something is a violation, please do not hesitate to ask. I will not hold it against you!

COVID-19 Statement:

F22 General Physics I has been approved by the University to meet **in-person**. There is no remote/hybrid option for this class. Please visit the Rutgers Universitywide COVID-19 Information Page for all official Rutgers announcements regarding the pandemic.

- Due to the ongoing challenges associated with the pandemic, I will be allowing four, no-questions-asked, absences where you will be exempt from participation/attendance. Please note, the no-questions-asked absences do not apply to exam days.
- Should you have a situation where you anticipate a long-term absence, please contact me to discuss.
- If there are any changes to policies or scheduling, I will post an announcement on Canvas. Please check the Canvas page frequently.

Tentative Class Outline:

Chapter 1: Math Review and Introduction
Chapter 2: Kinematics
Chapter 3: Kinematics in 2D
Exam 1: Chapters 1, 2, and 3
October 4
8 lectures

Chapter 4: Dynamics: Force and Newton's Laws of Motion
Chapter 5.1: Friction
Chapter 7: Work, Energy, and Energy Resources
Chapter 8: Linear Momentum and Collisions
Exam 2: Chapters 4, 5.1, 7, and 8
Nov 3
8 lectures

Chapter 6: Uniform Circular Motion
Chapter 9: Statics and Torque
Chapter 10: Rotational Motion and Angular Momentum
Exam 3: Chapters 6, 9, and 10
Dec 1
6 lectures

Chapter 16: Oscillatory Motion and Waves
Chapter 17: Physics of Hearing
Exam 4: Chapters 16 and 17
3 lectures
During final exam period

*Note: Exam 4 will not be cumulative, but will be administered during the University scheduled final exam period