Course, section, and term: General Physics I with Lab (PHY1053.01, Fall 2022. Room 2-123, TTh 12:30pm-3:15pm)
Instructor: Professor Erika G. Kisvarsanyi
Office: Building 2-217E **Phone:** 352-854-2322 ext. 1495 **E-Mail:** kisvarse@cf.edu
Office Hours: M 10:30am -1:15pm; **T** 3:15pm-5pm; **W** 10am-1:15pm, 4pm-5pm; **Th** 9:30am – 10:45am

Texts (required): 1) *College Physics used for BOTH PHY1053 and PHY1054 (ISBN 9780134876986)* ***OR*** *College Physics Volume 1 for PHY1053 ONLY (ISBN 9780134987323),* Young and Adams 11th Edition, 2020; 2) *Physics Probeware Lab Manual Sixth Edition,* (*ISBN 9780471476757*) Cutnell & Johnson, 2004
Course Description: PHY1053 is the first of a two-semester survey of non-calculus based physics for science and pre-professional majors. Topics include Newtonian mechanics, conservation laws, heat, and mechanical waves, with applications relative to the biological sciences. The laboratory is an integral part of the course and consists of selected experiments from the laboratory text in addition to simulations available for free at PhET: Free online physics, chemistry, biology, earth science and math simulations (colorado.edu)
Prerequisite: MAC1105 (some knowledge of trigonometry is strongly recommended but not required – anything needed will be in Ch.1).
Minimum Technical Requirements
Students enrolled in this course must be able to:

- Access the internet
- Use all required features of Canvas
- Run HTML5 within a web browser for lab simulations
- Send, receive, and be able to work with Word or pdf document attachments by e-mail

Grading:
The Scale: A (90%-100%); B+ (87%-89.9%); B (80%-86.9%); C+ (77%-79.9%); C (70%-76.9%); D (60%-69.9%); F (Below 60%). This is the standard college-wide grading scale.

The Details:
Tests: There will be 3 tests covering multiple chapters each during the semester, but your low score on these tests will be dropped. The tests will take place during our scheduled class period (see the Calendar portion of this syllabus for exact dates). There will typically be some time at the beginning of class to ask a few last-minute questions, although ideally, if you need help with the material, you would have come to office hours or sought help BEFORE test day. You may leave when you are done with the test. One low score will be dropped.

Diagnostic Quizzes: Each chapter will be quizzed. These quizzes will be taken online using Canvas and should be used to diagnose what kinds of issues you may be having with the content of the chapter so that you may make adjustments or get help well before the exams come around. An individual quiz score will not affect your overall grade very much, so you really should consider these as a way to diagnose your own strengths and weaknesses in any given chapters' topics, or to determine if your study habits are effective. You will be given a time frame during which each chapter's quiz must be taken and quizzes will not be re-opened if you miss the due date. Four low scores will be dropped.

Group Work: There will be group work done during class that will also contribute to your grade. This will be problem solving during class-time that should help you not only with learning and understanding the material, but also with the homework problems, the quizzes, and the exams. If you are attending class regularly, you should get a perfect score on this!

Labs: The labs contribute 20% to your overall course grade, and two low scores will be dropped. Ideally, you should be able to use the labs to expand or support your understanding of the course topics. Some of the labs will be done during class with a lab report handed in at the end of that class period, other labs will be based on Phet simulations, will be done outside of class time with completed lab handouts turned in via Canvas email.

Cumulative Final: This course has a cumulative final exam given during finals week that cannot be dropped. It will be taken during our scheduled final exam time, set by the registrar.

The Breakdown:

- 20% - Best of 3 Chapter tests
- 20% - Second best of 3 Chapter tests
- 5% - Quizzes (four lowest scores dropped)
- 15% - Group work (you must be in class to earn this part of your grade)
- 20% - Labs (the Safety Video and Quiz lab may NOT be dropped)
- 20% - Cumulative Final Exam (given during Finals Week in class, exact date TBD)

There is a price for dropping all of the low scores mentioned previously. ***there will be no make-ups for tests, or group work, quizzes will not be reopened after their due dates, and the grading scale is set in stone.*** For example, if you miss Test 2 for any reason, that will be the test score that is dropped. If you miss one of the quizzes for any reason, it will be one of your four drops. You can miss up to two group works and not have it affect your grade. If you end up with a 79.9 at the end of the semester, I will not round up your grade to an 80%. (In extreme and rare cases, such as a major unexpected medical or legal emergency, making up SOME missed work beyond the drops MAY be allowed with a valid, excused absence provided there is legitimate medical or legal documentation of the event). **In any case**, it is your responsibility to speak with me about any situation in a timely fashion. Waiting until weeks after a critical absence is unacceptable.

Important note about ALL quizzes and tests (including the final exam):
ONE (1, UNO, UN, EINS, EGY, ОДИН) HANDWRITTEN (YOUR handwriting), 8 ½ x 11 sheet of paper with notes, etc., may be used on quizzes and tests

Please turn off or silence your phones and any other device that could be disruptive to the class

Disclaimer:
Course policies and regulations are not open for discussion or negotiation. This syllabus has been constructed to be as complete as possible, however, I reserve the right to alter policies, procedures, and the syllabus as needed. Please utilize the Canvas website regularly as any changes to the syllabus will be posted there.

Dates of Interest:
Last day to drop a class and get a refund – Friday, August 19
Labor Day. No classes – Monday, September 5
Faculty Professional Development Day. No Day classes. – Tuesday, October 4
Last day to withdraw with a 'W' no refund – Tuesday, October 25
Veteran's Day. No classes – Friday, November 11
Thanksgiving. No classes – Wednesday, November 23 through Sunday, November 27
Last day of class for PHY1053 – Thursday, December 1
Final Exam for PHY1053 – Given during Finals Week in class**,** date TBD, time 12:30pm – 2:30pm

Learning Objectives:
Upon completion of this course, the student will be able to:
1. Demonstrate a view of physics as a science that deals with forces, energy and matter.
2. Understand relationships between kinematic variables such as displacement, velocity, acceleration, and time.
3. Apply graphical solutions and mathematical models to the solution of physical problems.
4. Apply conditions of equilibrium to determine unknown quantities.
5. Define Newton's three laws of motion and apply them to determine unknown quantities.
6. Understand how work, energy, and power are related.
7. Describe principles of conservation of energy and momentum and apply them to the concepts of mechanics.
8. Analyze rotational motion about a fixed axis and be able to apply physics principles in problem solving.
9. Understand the fundamentals of fluid mechanics, both statics and dynamics.
10. State the relationship between period and frequency, period and angular frequency, and frequency and angular frequency as it applies to periodic motion.
11. Understand and analyze mechanical waves.
12. Analyze the effects of temperature and heat on materials and understand heat as a form of energy.

How to proceed through the course:
Students should plan to study approximately three hours per week for each credit-hour of class. It is not uncommon to spend as much as 15 hours per week doing coursework, for some it may be more, for some, less. The learning management system (Canvas) includes chapter summary slides (these are outlines and NOT a complete set of class notes), and for some chapters, an approximately 40-50 minute introductory video lecture which should be viewed before class. This will enable you to understand the material better during lectures and problem-solving sessions during class time.

College Policies

Academic Integrity – In order to preserve academic excellence and integrity, the College expects you to know, understand, and comply with the Code of Student Conduct, which prohibits academic dishonesty in any form, including, but not limited to, cheating and plagiarism. Cheating can be defined as: receiving or giving unauthorized assistance on a quiz, test, exam, paper, or project or unauthorized use of materials to complete such; collaborating with another person(s) without authorization on a quiz, test, exam, paper, or project; taking a quiz, test, or exam for someone else or allowing someone else to do the same for you. The grades you earn must be based upon your own work and must accurately reflect your own knowledge and skills. Cheating and/or plagiarism will not be tolerated and may result in an "FF" for the course as well as disciplinary action under the Code of Student Conduct. A student will be referred to an Academic Integrity Seminar. There will be a charge for this two-hour seminar, and attendance is required (see Student Handbook). Failure to attend the Academic Seminar may result in the assignment of a final course grade of "FF," denoting course failure due to a violation of the college's Academic Integrity policy.

Access Services for Students with Disabilities – If you have a disability, serious medical condition, a learning or psychological disorder and want to request accommodations, it is your responsibility to register with the Office of Access Services and to provide verifiable documentation to Access Services as soon as possible. If eligible, Access Services will provide you with a notification of approved accommodations to give to your instructors at the beginning of the semester. Faculty will comply with the accommodations approved by Access Services. For information visit the Access Services webpage at http://www.cf.edu/departments/sa/ss/, contact access@cf.edu or call 352-854-2322, ext. 1580 for an appointment.

Withdrawal – If you want to withdraw from this class, you must fill out the necessary forms and have them signed by the appropriate parties. If you just stop coming to class after the posted drop date, you may receive the grade of F. The college reserves the right to evaluate individual cases of non-attendance.

Students should be alerted to the fact that
(1) withdrawals do not count in the CF GPA, but may not be viewed favorably at the university level or for financial aid
(2) a withdrawal counts as an attempt under the forgiveness/withdrawal policy and the course repeat policy
(3) there are increased costs to take the course on the third attempt
(4) there may be a reason a withdrawal request may be denied.

Please see the College's withdrawal procedures.

CF STUDENT ASSISTANCE PROGRAM- The CF Student Assistance Program (SAP) is a confidential resource for assisting students who may have personal problems which could affect their school, work, or home lives. SAP provides early intervention and professional assessment and counseling to best meet the needs of the student. Services are free to all active CF students. The SAP is managed by BAY CARE LIFE MANAGEMENT, a health management organization. A student may call a toll-free helpline during regular business hours Monday through Friday from 8:30AM-5:00PM. For crisis situations after hours, on weekends, or holidays a student may call the same number and the therapist on duty will be paged and will promptly respond to the call. For services a student may call the following toll-free number: 1-800-878-5470

Suggested Homework Problems:
Physics cannot be learned by only listening to a lecture or watching someone else work problems. Physics is best learned by doing it – applying the principles covered in class to solve problems. This can be a difficult task to master, and can be developed only by practice. The following list of suggested homework problems from your textbook has been included with this in mind. You should consider this list as a minimum set of problems to work from each chapter to see if you are understanding the basic principles AND how to apply them. Keep in mind that although homework does not get formally graded, and is not part of the overall course grade, it is THE way to test the development of your understanding of the concepts you are learning about during class and how they apply to understanding and analyzing the natural world. Odd numbered exercises have answers in the back of your book. Although solutions will be available (posted on CANVAS), they ARE NOT A GOOD RESOURCE TO LEARN PHYSICS!!! They are being provided mainly so that you can check even numbered problems' answers. There are serious limitations as to what these solutions are really good for. We will discuss this in class! REMEMBER you are not just trying to memorize problems (there are FAR TOO MANY VARIATIONS using just a handful of concepts and the equations that illustrate them)!!!
This list may be modified as needed during the course of the semester.

"The purpose of homework problems is insight, not numbers. An equation is not something you plug numbers into to get other numbers; it tells a story."

THE ASSIGNMENTS BELOW REFER TO THE SECTION AT THE END OF EACH CHAPTER LABELLED 'PROBLEMS' AND IS FOR THE 11TH EDITION OF THE TEXTBOOK!
I WOULD ALSO RECOMMEND THE MULTIPLE-CHOICE PROBLEMS AT THE END OF EACH CHAPTER FOR ADDITIONAL PRACTICE

Chapter 1 – 2, 3, 7, 8, 11, 12, 19, 37, 38, 40, 41, 43, 50

Chapter 2 – 1, 2, 3, 8, 11, 12, 13, 17, 20, 21, 23, 24, 27, 32, 34, 38, 46, 47, 48, 49, 51, 54, 58, 59, 65, 68, 69, 70

Chapter 3 – 1, 4, 5, 9, 11, 12, 14, 15, 21, 24, 26, 28, 32, 33, 36, 37, 40, 42, 46, 48, 51, 55

Chapter 4 – 1, 4, 5, 7, 9, 11, 12, 14, 15, 17, 18, 19, 21, 24, 26, 28, 30, 35, 36, 40, 47

Chapter 5 – 3, 8, 11, 13, 17, 20, 23, 26, 29, 32, 36, 40, 45, 46, 47, 49, 51, 58

Chapter 6 – 2, 4, 5, 6, 10, 13, 14, 16, 17, 20, 22, 27, 29, 33, 34, 35, 42

Chapter 7 – 1, 3, 7, 9, 11, 12, 13, 15, 20, 23, 24, 25, 29, 31, 32, 35, 36, 41, 42, 48, 49, 55, 57, 65, 75

Chapter 8 – 1, 3, 5, 8, 9, 11, 12, 16, 18, 19, 20, 21, 27, 29, 31, 34, 36, 38, 39, 42, 56, 61

Chapter 9 – 1, 3, 5, 9, 11, 12, 14, 18, 20, 21, 22, 30, 31, 36, 37, 43, 45, 47, 55

Chapter 10 – 1, 2, 6, 7, 9, 10, 12, 14, 19, 20, 21, 25, 28, 34, 35, 41, 45, 46, 49

Chapter 11 – 1, 2, 6, 7, 8, 9, 15, 16, 20, 21, 23, 24, 25, 27, 28, 33, 37, 41, 42, 44, 45

Chapter 12 – 1, 2, 3, 5, 6, 7, 13, 16, 21, 23, 25, 27, 30, 34, 37, 38, 42, 45, 46, 49, 51, 52

Chapter 13 – 1, 2, 8, 11, 14, 17, 23, 27, 29, 32, 35, 42, 43, 47, 50, 54, 55

Chapter 14 – 1, 2, 3, 7, 8, 9, 18, 21, 23, 27, 28, 31, 36, 37, 39, 42, 43

There is no substitute for practice!!!

Disclaimer: The tentative schedule for the course follows. Due to unforeseen circumstances, it may be necessary for the course schedule to change. I will always strive to be fair and timely about any changes.

PHY1053 Schedule

Tuesday	Thursday
8/16 Course overview/Chapter 1 QUIZ Ch. 1 Due by Monday 8/22 midnight	8/18 Chapter 2 *Lab: Lab Intro/Safety Video & Lab Quiz (your first lab grade!)*
8/23 Chapter 2 QUIZ Ch. 2 Due by Monday 8/29 midnight	8/25 *Lab: CJ01/02 (Cutnell Johnson Lab Activity 01 and 02) Motion in One Dimension; Position, Velocity and Acceleration* lab report turned in at end of class
8/30 Chapter 3 QUIZ Ch. 3 Due by Monday 9/5 midnight	9/1 Chapter 3 *Lab: Projectile Motion (Phet Simulation)* lab handout submitted via email by class time Tuesday 9/6
9/6 Chapter 4 QUIZ Ch. 4 Due by Monday 9/12 midnight	9/8 *Lab: CJ04A/04B Newton's Second Law of Motion* lab report turned in at end of class
9/13 Review Chs. 1-4	9/15 **Test 1 Chapters 1-4**
9/20 Chapter 5 *Lab: Forces and Motion (Phet Simulation)* lab handout submitted via email by class time Tues 9/27	9/22 Chapter 5 QUIZ Ch. 5 Due by Monday 9/26 midnight
9/27 Chapter 6	9/29 Chapter 6/7 QUIZ Ch. 6 Due by WEDNESDAY 10/5 midnight
10/4 No Classes, Faculty Professional Development	10/6 Chapter 7 *Lab: CJ07 Cons. Of Energy* (turned in at end of class) QUIZ Ch. 7 Due by WEDNESDAY 10/12 midnight
10/11 Chapter 7/8	10/13 Chapter 8 QUIZ Ch. 8 Due by WEDNESDAY 10/19 midnight
10/18 *Lab: CJ08 Impulse v. Change in Momentum* turned in at end of class	10/20 Review Chapters 5-8
10/25 **Test 2 Chapter 5-8**	10/27 Chapter 9/10 QUIZ Ch. 9 Due by TUESDAY 11/1 midnight
11/1 Chapter 10 QUIZ Ch. 10 due by FRIDAY 11/4 midnight	11/3 Chapter 11 QUIZ Ch 11 due by WEDNESDAY 11/9 midnight *Lab: Hooke's Law (Phet Simulation)* lab handout submitted via email by class time Tues 11/8
11/8 Chapter 12 *Lab: CJ12/13 Simple Harmonic Motion* turned in at end of class	11/10 Chapter 12, Review Chapter 9-12 QUIZ Ch. 12 due by Monday 11/14 midnight
11/15 **Test 3 Chapter 9-12**	11/17 Chapter 13 QUIZ Ch. 13 due by Monday 11/28 midnight
11/22 Chapter 13/14 *Lab: Fluid Pressure and Flow (Phet Simulation)* lab handout submitted via email by class Tues 11/29	11/24 No class. Thanksgiving
11/29 Chapter 14 QUIZ Ch. 14 due by FRIDAY 12/2 midnight	12/1 Review Chapters 1-14
12/6 FINAL EXAM (TBD)	12/8 FINAL EXAM (TBD)