The University of Texas at Tyler
Syllabus
Spring 2024
College Physics I
Physics 1301
Section 1

Instructor: Dr. Randy Back
Classroom: RBS 2024
Class Time: MWF 10:10-11:05
Office: RBN 4047
Phone: (903) 565-5797
Email: rback@uttyler.edu
Office Hours: MWF 9-10 and M 12-1 or by appointment. You should feel free to stop by my office any time. If I am available, I will be happy to help you.
Course Topics: This course will introduce the student to some basic concepts and principles in physics. Problem solving will be a major component of this class. Major topics covered will include Kinematics, Newton's Laws, Energy, Momentum, Rotational motion and Gravity.
Text:
College Physics - Modified Access

By Knight, Randall D. / Jones, Brian / Field, Stuart
Edition: 4TH 19
Publisher: PEARSON
ISBN 13: 9780134724744
The link below is to the Pearson website. You can purchase access to the homework site and it will come with an electronic copy of the textbook.
https://www.pearson.com/en-us/subject-catalog/p/college-physics-a-strategic-approach/P200000007003/9780136782216

Prerequisite: MATH 1316 or MATH 2312.
Homework: Homework will be done on https://mlm.pearson.com/northamerica/masteringphysics/. The course ID is back06380. Homework is one of the most important parts of this class. You must spend significant time on the homework to really understand this material.
Tests: There will be four tests given during the semester: Test 1 – February 7, Test 2 – March 1, Test 3 – April 3, Test 4 – April 26. Calculators will not be allowed during the tests, unless stated otherwise. The test dates above might change depending on how quickly we cover the material.
Final Exam: The final will cover material from the entire semester. Calculators will not be allowed on the final unless stated otherwise. The date and time of the final will be announced in class. Your grade on the final will be used to replace your lowest test grade. The final is scheduled for May 1.
Make-up: No late work will be accepted. If you have an excused absence you must make up the work before the due date.
Grading: The components of your final grade are given below

4 Tests - 75 %
HW- 5%
Final - 20 %

Your final letter grade will be given based on the following percentages: A (90%-100%), B (80%-89%), C (70%-79%), D (60%-69%),F (<60%).
Disability Statement: "If you have a disability, including a learning disability, for which you request disability support services/accommodation(s), please contact Ida MacDonald in the Disability Support Services office so that the appropriate arrangements may be made. In accordance with federal law, a student requesting disability support services/accommodation(s) must provide appropriate documentation of his/her disability to the Disability Support Services counselor. In order to assure approved services, the first week of class, diagnostic, prognostic, and prescriptive information should be received 30 days prior to the beginning of the semester services are requested. For more information, call or visit the Student Services Center located in the University Center, Room 282. The telephone number is 566-7079 (TDD 565-5579)." Additional information may also be obtained at the following UT Tyler Web address: http://www.uttyler.edu/disabilityservices.

Social Security Statement: It is the policy of The University of Texas at Tyler to protect the confidential nature of social security numbers. The University has changed its computer programming so that all students have an identification number.
Note Regarding Student Absence due to Religious Observance: Students who anticipate being absent from class due to a religious observance are requested to inform the instructor by the second class meeting of such absences.

Grade Replacement
If you are repeating this course for a grade replacement, you must file an intent to receive grade forgiveness with the registrar by the Census date. Failure to file an intent to use grade forgiveness will result in both the original and repeated grade being used to calculate your overall grade point average. A student will receive grade forgiveness (grade replacement) for only three (undergraduate student) or two (graduate student) course repeats during his/her career at UT Tyler. (2006-08 Catalog, p.35)

Student Academic Conduct
In this course students are encouraged to work in groups when doing homework and preparing for quizzes and tests. However, during quizzes and examinations a code of honor will apply under which students are to work alone and neither give help to others nor receive help from any sources. Cheating will not be tolerated.

Concealed Campus Carry
We respect the right and privacy of students who are duly licensed to carry concealed weapons in this class. License holders are expected to behave responsibly and keep a handgun secure and concealed. More information is available at http://www.uttyler.edu/about/campus-carry/index.php.

A more complete description of University policies is listed at the following website:
http://www.uttyler.edu/academicaffairs/syllabuspolicies.pdf

The Census day is January 29
Last Day to withdraw from a course is March 25

Course Objectives/Student Learning Outcomes
1. Critical Thinking Skills (includes creative thinking, innovation, inquiry and analysis, evaluation and synthesis of information)

The student will demonstrate their critical thinking skills by using mathematical models and physical concepts to analyze physical systems. This Student Learning Outcome (SLO) will be assessed using test questions.
2. Communication Skills (includes effective development, interpretation and expression of ideas through written, oral and visual communication
The student will communicate an understanding of the physics principles discussed in class on free response test questions. The questions will require the student to express a qualitative understanding through written communication of the physics concepts covered in class. This SLO will be assessed using test questions.

Departmental statement on cell phones and electronic devices.
Cell phones, smart watches, and any similar electronic devices must be turned off and put away during exams. If they observed out in a visually accessible place (*i.e.* between legs, on the floor, *etc.*), it will be assumed that they are being used to cheat; your exam will be taken away, you will receive a zero score (0 points) for the test, and you will be referred to the Office of Judicial Affairs.

General Course Information
1. You are responsible for all the material covered in class.
2. Physics builds on itself. It is very important that you do not fall behind on the material.
3. You should read the book multiple times. If you do not understand the material in the book you will not understand the material on the tests.
4. It is very important that you spend time outside class reading the material and doing the homework. The only way you will understand the material is to spend time working the problems.
5. I strongly encourage you to ask questions in class and come by my office any time you need help with physics.
6. Regular classroom attendance is expected.

Online Physics Resources
1. http://lightandmatter.com/
2. http://hyperphysics.phy-astr.gsu.edu/hbase/hframe.html
3. http://www.physicsclassroom.com/

4. http://ocw.mit.edu/courses/physics/8-01t-physics-i-fall-2004/lecture-notes/
5. http://ocw.mit.edu/courses/physics/
6. http://www.splung.com/

Spring 2024
PHYS 1301
Schedule

Wednesday January 17- Introduction & Chapter 1- Motion diagrams
Friday January 19- Chapter 2- kinematics
Monday January 22- Chapter 2- graphs of position, velocity and acceleration
Wednesday January 24 Chapter 2- kinematic equations
Friday January 26- Chapter 2 and Chapter 3- vectors
Monday January 29- Chapter 3- motion in two dimensions
Wednesday January 31- Chapter 3- projectile motion
Friday February 2 - Chapter 3- projectile motion
Monday February 5- Chapter 3- circular motion
Wednesday February 7- Test 1
Friday February 9 - Chapter 4- catalog of forces
Monday February 12- Chapter 4- newton's 1^{st} and 2^{nd} laws
Wednesday February 14- Chapter 5- equilibrium
Friday February 16- Chapter 5- newton's 2^{nd} law
Monday February 19- Chapter 5- newton's 3^{rd} law
Wednesday February 21- Chapter 6- uniform circular motion
Friday February 23- Chapter 6- centripetal force
Monday February 26- Chapter 6- newton's law of gravity
Wednesday February 28- Chapter 6- gravity and orbits
Friday March 1-Test 2
Monday March 4- Chapter 7- rotational kinematics
Wednesday March 6- Chapter 7- moment of inertia
Friday March 8- Chapter 7- torque
Monday March 11- Spring Break
Wednesday March 13- Spring Break
Friday March 15- Spring Break
Monday March 18- Chapter 7-rotional dynamics
Wednesday March 20- Chapter 7-newton's 2^{nd} law
Friday March 22- Chapter 8-static equilibrium
Monday March 25- Chapter 8- static equilibrium
Wednesday March 27- Chapter 8- springs and Hooke's law
Friday March 29- Chapter 8- springs and Hooke's law
Monday April 1- Chapter 8 -Stability and Center of Mass
Wednesday April 3- Test 3
Friday April 5- Chapter 9- impulse and momentum
Monday April 8- Chapter 9- conservation of momentum (inelastic collisions)
Wednesday April 10– Chapter 9-collisions in 2d and angular momentum
Friday April 12- Chapter 9- collisions in 2d and angular momentum
Monday April 15- Chapter 10- work
Wednesday April 17- Chapter 10-kinetic and potential energy
Friday April 19- Chapter 10- conservation of energy and conservative and non-conservative forces
Monday April 22- Chapter 10- conservation of energy for a system of objects and collisions

Wednesday April 24- Chapter 10-energy and power
Friday April 26- Test 4
Monday April 29
Wednesday May 1 Final Exam
Friday May 3