WACO, TEXAS

COURSE SYLLABUS
AND
INSTRUCTOR PLAN

College Physics I

PHYS 1401_O080

Dr. Ke (Mike) Qiao

NOTE: This is a 16-week course.
NOTE: This is an Online course.
NOTE: This is a Fall course.

I reserve the right to change any term on this syllabus at any time during the semester.

Course Description: Fundamental principles of physics, using algebra and trigonometry; the principles and applications of classical mechanics and thermodynamics, including harmonic motion, mechanical waves and sound, physical systems, Newton's Laws of Motion, and gravitation and other fundamental forces; with emphasis on problem solving.

Prerequisites and/or Corequisites: Credit for MATH 1316 or equivalent.

Instructor Information:

Instructor Name:	Dr. Ke (Mike) Qiao
MCC E-mail:	kqiao@mclennan.edu
Office Phone Number:	NA
Office Location:	NA
Contact Hours:	Th 5:30 - 6:30 PM. Zoom
Zoom meeting ID:	895 2477 0713

Required Text & Materials:

- *Physics*, 5th Edition
  James S. Walker
- *Mastering Physics Student Access Kit*
  Pearson Addison-Wesley
  ISBN: 9780134019666
  (License can be purchased online through www.masteringphysics.com)
- A "scientific" calculator: This means something that can handle exponents, trig functions, hyperbolic trig functions, and logarithms.

MCC Bookstore Website: http://www.mclennan.edu/bookstore/

Methods of Teaching and Learning:
Students will learn through watching lecture videos, reading e-text book, and practice through assignments, online labs and exams. Additional methods may be used as opportunities present themselves.

Course Objectives and/or Competencies:

1. Determine the components of linear motion (displacement, velocity, and acceleration), especially motion under conditions of constant acceleration.
2. Apply Newton's laws to physical problems including gravity.
3. Solve problems using principles of energy.
4. Use principles of impulse and linear momentum to solve problems.
5. Solve problems in rotational kinematics and dynamics, including the determination of the location of the center of mass and center of rotation for rigid bodies in motion.
6. Solve problems involving rotational and linear motion.
7. Describe the components of a wave and relate those components to mechanical vibrations, sound, and decibel level.

8. Demonstrate an understanding of equilibrium, including the different types of equilibrium.
9. Discuss simple harmonic motion and its application to quantitative problems or qualitative questions.
10. Solve problems using the principles of heat and thermodynamics.
11. Solve basic fluid mechanics problems.
12. Demonstrate techniques to set up and perform experiments, collect data from those experiments, and formulate conclusions from an experiment.
13. Record experimental work completely and accurately in laboratory notebooks and communicate experimental results clearly in written reports.

CORE OBJECTIVES – LIFE AND PHYSICAL SCIENCES: Courses in this category focus on describing, explaining, and predicting natural phenomena using the scientific method. Courses involve the understanding of interactions among natural phenomena and the implications of scientific principles on the physical world and on human experiences.

A. Critical Thinking Skills - to include creative thinking, innovation, inquiry, analysis, evaluation and synthesis of information. These will be assessed through lecture exams, problems assigned for homework, and/or laboratory exercises.
B. Communication Skills - to include effective development, interpretation and expression of ideas through written, oral and visual communication. These will be assessed by presentations and/or reports based on laboratories, problems, and/or research.
C. Empirical and Quantitative Skills - to include the manipulation and analysis of numerical data or observable facts resulting in informed conclusions. These will be assessed through lecture exams, problems assigned for homework, and/or laboratory exercises.
D. Teamwork - to include the ability to consider different points of view and to work effectively with others to support a shared purpose or goal. This will be evaluated through group discussions, group laboratory projects, and/or through group presentations.

Course Attendance/Participation Guidelines:

In this online course, to be considered "Present" in each week, you must complete at least one assignment for that week. Weeks in which no assignments were completed will count as absent (not in attendance).

If a student is not in attendance in accordance with the policies/guidelines of the class as outlined in the course syllabus as of the course census date, faculty are required to drop students from their class roster prior to certifying the respective class roster. A student's financial aid will be re-evaluated accordingly and the student will only receive funding for those courses attended as of the course census date.

Before the 60% point of the semester, a student who misses 25% or more of assigned work **for an online course (These include homework assignments, exams, labs, discussion and the final exam)** will be withdrawn from the course with a grade of W. A student may also request to be withdrawn with a grade of W before the 60% point of the semester. After the 60% point of the semester, the student may request to be withdrawn if the student is passing or be assigned the final grade earned at the end of the semester after grades have been updated to reflect missing work.

Course Outline:
This course will encompass the following material. Objectives 12-13 are covered in laboratory work. Core Objectives are covered throughout the entire semester.

Chapter 1 – Introduction to Physics
Chapter 2 – One-Dimensional Kinematics
Chapter 3 – Vectors in Physics
Chapter 4 – Two-Dimensional Kinematics
Chapter 5 – Newton's Laws of Motion
Chapter 6 – Applications of Newton's Laws
Chapter 7 – Work and Kinetic Energy
Chapter 8 – Potential Energy and Conservation of Energy
Chapter 9 – Linear Momentum and Collisions
Chapter 10 – Rotational Kinematics and Energy
Chapter 11 – Rotational Dynamics and Static Equilibrium
Chapter 12 – Gravity
Chapter 13 – Oscillations about Equilibrium
Chapter 14 – Waves and Sound
Chapter 15 – Fluids
Chapter 16 – Temperature and Heat
Chapter 17 – Phases and Phase Changes
Chapter 18 – The Laws of Thermodynamics

	Chapter Coverage	Objectives		Chapter Coverage	Objectives
Week 1-3	1-3	1	Week 10-12	12-15	7, 9, 11
Week 4-6	5-7	2, 3	Week 13-15	16-18	10
Week 7-9	9-11	3, 4, 5, 6, 8	Week 16	Final	1-11

Course Grading Information:
(Homework) Assignments: 40%
Labs: 20%
Discussion: 5%
Exams: 20%
Final Exam: 15%

A: 90%+ B: 80% – 89% C: 70% – 79% D: 60% – 69% F: 0% – 59%

Assignments (40%): Homework assignments are involved numeric problems designed to challenge you to gain a deeper understanding of the course material. Assignments will be completed through Mastering Physics. Each unit you will have 3-4 assignments to do.

Labs (20%): You will need to complete 1-2 labs for each unit. All the labs will be completed online on Brightspace. They will mostly be in the form of simulations designed to enhance your understanding of each week's lessons. Instructions for each lab will be given through Brightspace.

Exams (20%): There will be five (Unit) Exams during the semester (one for each unit). Exam questions will come from the material covered in each unit. Exams will be taken, turned in and graded utilizing Mastering Physics. All exams will be timed and due at the end of the week they are given.

Discussion (5%): For most units you will need to complete 1-2 discussion board assignments. You will be given a prompt and expected to answer thoughtfully. You need also to respond to other students' posts. To receive full credit for the discussion, you must have at least one answer to the prompt and one response to another student. Your answer to the prompt or your response to other students must be thoughtful and civil.

Final Exam (15%): The final exam is comprehensive and has the same format as the other exams. It will be taken, turned in and graded utilizing Mastering Physics. It is timed and must be taken and submitted before 11:59 pm **on the Final Exam Day of the Fall semester**.

Late Work and Make Up Work Policies:

Assignments, labs, exams and discussions for each week are all due at 11:59 PM CT on **the Sunday** of that week. **For assignments only,** you will receive a 2% penalty for each hour an assignment is late, regardless of the reason it is late. Exams, discussion boards, and lab assignments will not be accepted late, for any reason. If you miss any assignment on the dates explained above due to an MCC excused absence reason, you must contact me as soon as possible (before any applicable due dates, if possible) and provide acceptable documentation as listed above for your absence, so that I can make arrangements for you to make up the affected assignment(s). Absences without documentation or for reasons that do not fall under the above will not be considered for makeup and you will receive a zero for each affected assignment.

The final exam is required for all students, and it is due at 11:59 pm CT **on the Final Exam Day of Fall**. Unless there is a college approved, documented excused absence the final exam may not be made up. Any unexcused absence for the final exam will result in a grade of zero for that exam.

Student Behavioral Expectations or Conduct Policy:

Students are expected to maintain classroom decorum that includes respect for other students and the instructor, prompt and regular attendance, and an attitude that seeks to take full advantage of the education opportunity.

Click Here for the MCC Attendance/Absences Policy
(https://www.mclennan.edu/highlander-guide/policies.html)
Click on the link above for the college policies on attendance and absences. Your instructor may have additional guidelines specific to this course.

06/24/2025

MCLENNAN COMMUNITY COLLEGE

ACADEMIC RESOURCES/POLICIES

Accommodations/ADA Statement:

Any student who is a qualified individual with a disability may request reasonable accommodations to assist with providing equal access to educational opportunities. Students should contact Accommodations (Disability Services) as soon as possible to begin the steps for requesting accommodations. Once that process is completed, appropriate verification will be provided to the student and instructor. Please note that instructors are not required to provide classroom accommodations to students until appropriate verification has been provided by Accommodations (Disability Services). For additional information, please visit www.mclennan.edu/disability

Students with questions or who require assistance with disabilities involving physical, classroom, or testing accommodations should contact:

disabilities@mclennan.edu (254)299-8122
Room 319, Student Services

Title IX:

Title IX of the Education Amendments of 1972 is a Federal civil rights law that prohibits discrimination on the basis of sex in educational programs and activities that receive Federal funds. We care about your safety and value an environment where students and instructors can successfully teach and learn together. If you or someone you know experiences unwelcomed behavior, we are here to help. Individuals who would like to report a Title IX incident are encouraged to immediately contact the Title IX Coordinator at titleix@mclennan.edu or by calling, Dr. Claudette Jackson, (Accommodations/Title IX) at (254) 299-8465.

Additionally, Title IX provides rights and protections for pregnant and newly parenting students which can include educational accommodations such as excused absences

and the opportunity to make up assignments and tests. Lactation spaces are also available on campus. Please email titleix@mclennan.edu for more information.

MCC employees are mandatory reporters and must report incidents immediately to the Title IX Coordinator. Faculty and Staff may email titleix@mclennan.edu to submit a report.

Individuals may also contact the MCC Police Department at (254) 299-8911 or the MCC Student Counseling Center at (254) 299-8210. The MCC Student Counseling Center is a confidential resource for students. Any student may report sexual harassment anonymously by visiting https://www.lighthouse-services.com

Visit McLennan's Title IX webpage at https://www.mclennan.edu/titleix/ to learn more about Title IX protections, reporting, and resources.

Student Support/Resources:

MCC provides a variety of services to support student success in the classroom and in your academic pursuits to include counseling, tutors, technology help desk, advising, financial aid, etc. A listing of these and the many other services available to our students is available at http://www.mclennan.edu/campus-resource-guide/

Paulanne's Pantry (MCC's food pantry) provides free food by appointment to students, faculty and staff. To schedule an appointment, go to https://calendly.com/paulannespantry-mcc/15min.

Academic Support and Tutoring is here to help students with all their course-related needs. Specializing in one-on-one tutoring, developing study skills, and effectively writing essays. Academic Support and Tutoring can be found in the Library and main floor of the Learning Commons. This service is available to students in person or through Zoom. You can contact the Academic Support and Tutoring team via Zoom or email (ast@mclennan.edu) by going to our website (https://www.mclennan.edu/academic-support-and-tutoring/)

Success Coaching Services is here for you.

We know life can be overwhelming sometimes—and that challenges outside the classroom can impact your success inside it. That's why our Success Coaches provide personalized support to help you navigate it all.

Success Coaching is available to every MCC student, no matter where you're starting from. Whether you're looking for direction, need quick advice, or just want someone to talk to, our coaches are here to listen, celebrate your strengths, and help you move forward with confidence. At Success Coaching Services, your voice is heard, your goals matter, and your future is our focus.

To learn more or schedule an appointment, visit www.mclennan.edu/successcoaching, call 254-299-8226, or email success@mclennan.edu.

College personnel also recognize that food, housing, and transportation are essential for student success. If you are having trouble securing these resources and other essential resources, we encourage you to contact the CREW - Campus Resources Education Web by calling 254-299-8561 or emailing crew@mclennan.edu.

Success Coaching Services, the CREW, and Paulanne's Pantry are located on the second floor of the Student Services building in Success Coaching Services, suite 249.

The Student Counseling Center offers confidential mental health counseling to currently enrolled students at no charge. Counselors are trained to help students with problems related to personal, social, and emotional concerns. Sessions focus on short-term goals in order to facilitate students college success and adjustment. This service is available to students in person or through Zoom.

Make an appointment to meet with a counselor by visiting the center in the Wellness & Fitness building, room 101, calling 254-299-8210, or emailing counseling@mclennan.edu.

MCC Foundation Emergency Grant Fund:

Unanticipated expenses, such as car repairs, medical bills, housing, or job loss can affect us all. Should an unexpected expense arise, the MCC Foundation has an emergency grant fund that may be able to assist you. Please go to https://www.mclennan.edu/foundation/scholarships-and-resources/emergencygrant.html to find out more about the emergency grant. The application can be found at https://www.mclennan.edu/foundation/scholarships-and-resources/emergencygrant.html

MCC Academic Integrity Statement:

Please view our Academic Integrity statement for more information about academic integrity, dishonesty, and cheating. The unauthorized use of artificial intelligence (AI) for classwork can be a violation of the College's General Conduct Policy. Whether AI is authorized in a course and the parameters in which AI can be used in a course will be outlined by each instructor.

Minimum System Requirements to Utilize MCC's D2L|Brightspace:
For online and blended/hybrid courses, students must have access to a reliable computer and internet. For more information on the minimum system requirements needed to reliably access your courses in MCC's D2L|Brightspace learning management system go to: https://www.mclennan.edu/center-for-teaching-and-learning/Faculty-and-StaffCommons/requirements.html

Minimum Technical Skills:
Students should have basic computer skills, knowledge of word processing software, and a basic understanding of how to use search engines and common web browsers.

Backup Plan for Technology:
In the event MCC's technology systems are down, you will be notified via your MCC student email address. Please note that all assignments and activities will be due on the date specified in the Instructor Plan, unless otherwise noted by the instructor.

Email Policy:
McLennan Community College would like to remind you of the policy (http://www.mclennan.edu/employees/policy-manual/docs/E-XXXI-B.pdf) regarding college email. All students, faculty, and staff are encouraged to use their McLennan email addresses when conducting college business.

A student's McLennan email address is the preferred email address that college employees should use for official college information or business. Students are expected to read and, if needed, respond in a timely manner to college emails. For more information about your student email account, go to www.mclennan.edu/studentemail.

Instructional Uses of Email:
Faculty members can determine classroom use of email or electronic communications. Faculty should expect and encourage students to check the college email on a regular basis. Faculty should inform students in the course syllabus if another communication

method is to be used and of any special or unusual expectations for electronic communications.

If a faculty member prefers not to communicate by email with their students, it should be reflected in the course syllabus and information should be provided for the preferred form of communication.

Email on Mobile Devices:

The College recommends that you set up your mobile device to receive McLennan emails. If you need assistance with set-up, you may email Helpdesk@mclennan.edu for help.

You can find help on the McLennan website about connecting your McLennan email account to your mobile device:

- Email Setup for iPhones and iPads
- Email Setup for Androids

Forwarding Emails:

You may forward emails that come to your McLennan address to alternate email addresses; however, the College will not be held responsible for emails forwarded to an alternate address that may be lost or placed in junk or spam filters.

For more helpful information about technology at MCC, go to MCC's Tech Support or email helpdesk@mclennan.edu.

Disclaimer:

The resources and policies listed above are merely for informational purposes and are subject to change without notice or obligation. The College reserves the right to change policies and other requirements in compliance with State and Federal laws. The provisions of this document do not constitute a contract.