



Course Syllabus: Physics I (Mechanics, Wave Motion, & Heat)

College of Science, Mathematics & Engineering

PHYS 1624 Section X10

FALL 2021 August 23rd to December 6th

Contact Information

Instructor: Walid Shihabi

Office hours: MTW 1:30 PM – 2:30 PM via zoom (upon student's request with 24 hours prior notification). Other times can be arranged as well

E-mail: walid.shihabi@msutexas.edu

Course Description

This course is designed to introduce the student to the basic concepts of physics. We will cover linear and rotational kinematics to Work and Energy.

Textbook & Instructional Materials

Randall D. Knight, Physics for Scientists and Engineers: A Strategic Approach, 5th Edition. Required digital materials for this course are part of the Courseware Access and Affordability Program at MSU Texas. Students are charged for required course materials on their student account with the Business Office. Any students who wish to opt-out of the Program and purchase the required course materials on their own must do so prior to 09/07/21. Opt-out instructions are sent to students' official my.msutexas.edu email address after the first day of class. Please contact the MSU Bookstore if you have any questions about the opt-out process.

The course content is available via Desire2Learn (D2L) and the Mastering Physics (MP) can be accessed directly through D2L..

Student Handbook

Refer to: [Student Handbook-2018-19](#)

Academic Misconduct Policy & Procedures

Academic Dishonesty: Cheating, collusion, and plagiarism (the act of using source material of other persons, either published or unpublished, without following the accepted techniques of crediting, or the submission for credit of work not belonging to the individual whose credit is given). Additional guidelines on procedures in these matters may be found in the Office of Student Conduct. [Office of Student Conduct](#)

Academic honesty: https://msutexas.edu/student-life/_assets/files/handbook.pdf

In the lab and homework, cheating or plagiarism will not be tolerated. You

may have group work to study. Completing lab report, solving homework or submitting an exam, however, must be your own work in your own words. Any case of cheating, collusion, and plagiarism will lead to a zero credit on the assignment and possible “F” on the course based on your instructor assessment.

Grading

Table 1: Percentage allocated to each assessment:

Assessment	Grade Percentage
Exams (2 at 10% each)	20%
Homework	33%
Discussion	7%
Labs	20%
Final Exam	20%

Table 2: percentage for final grade:

Grade	Percentage
A	90% and above
B	80% to 89.9%
C	70% to 79.9%
D	60% to 69.9%
F	Less than 60%

Homework

The homework for each chapter is composed of Mastering Physics assignment and discussion board post.

The Mastering Physics assignments for each chapter will be solved and submitted via the Mastering Physics (MP) website. The MP assignments include textbook-related exercises, video questions, simulation questions, and “dynamic study module” problems. MP assignments constitute 33% of the final grade. ALL Mastering Physics assignments are mandatory except when (a) “Optional” or (b) “Extra Credit” are included in the title of the assignment. Example: “Optional Introduction to mastering physics”. Other than (a) and (b) cases above, all Mastering assignments are mandatory, this includes the dynamic study modules.

The discussion board posts

The discussion board posts constitute 7% of the final grade. Each chapter discussion’s post should be posted in the pertinent chapter forum in D2L’s Discussion board. The posts are due 12 hours prior to their pertinent Homework deadline. Example: If chapter 1 homework is due 8/28 at 11:59 PM, the discussion post is due 8/28 at 11:59 am. The purpose of the discussion forum is to collaborate with your classmates in solving the homework problems and to provide feedback to each other. Past the homework due date, I will be posting the ideal solution to the textbook part of the homework problems in the pertinent content area of D2L.

You need to post on how you solved one of the problems in the homework assignment.

- 1) Do not post the answer to the problem you selected, instead post on how you went about solving the problem. You need to state the quantities given, the unknowns that you need to evaluate, the

equations used and how you rearranged them to solve for the unknown(s). Make sure to address ALL the parts of the selected question a,b,c... and do NOT state any of the given numerical values. Note that the numerical values given in each homework problem varies for each student and with each attempt.

Here is an example from a student (from a different class) on what I expect:

“In problem 17.5 chapter 17, In part (a) we are given the magnitude and the sign of an electric charge, we are given an unknown charge, and we are given the distance between the two charges and the force between them. We are asked to calculate the magnitude of this unknown charge and its sign. I drew a schematic to visualize the problem and the distances given. I know that the unknown charge experiences an electric force in the downward direction (repulsion), hence it has the same sign as the known charge. I used Coulomb’s law (equation 17.5 on page 356 in the textbook) to relate the unknown charge to the given electric force, the known charge and the separation distance. Then rearranged the equation to solve for the unknown charge. The answer seems to be reasonable comparing the charge given and the force between them.

In part (b) we are given the mass of the unknown charge in grams and we are asked to calculate the acceleration of the charge based on the given information in the previous part. We know that acceleration is force divided by mass. We have the mass from the information in part (a), so now we divide the force by the mass. In order to apply the equation and obtain the acceleration in m/s^2 , we need first to convert the mass from grams to kg (by dividing by 1000). We know the force is repulsion, therefore the acceleration will be directed away from the known charge.”

NOTE the following in the above example:

a) No numerical values were included in the post, the quantities given are stated and the quantities that need to be evaluated (the unknowns) as stated too e.g. “we are given the distance and we are asked to find the charge”.

b) The concepts and the equations that enabled the student to solve the problem were stated clearly e.g. notice lines 5 to 9 and lines 13 to 14 in the example above

c) The question number and the chapter were stated clearly in the subject line of the post and again in the post. Here are examples on how to state the question number/title and chapter clearly:

* problem 17.5 chapter 17

* Pre-lecture Video: Conservation of Linear Momentum. Chapter 7

* Video Tutor: Conservation of angular Momentum. Chapter 8.

d) Notice that ALL the parts (a,b,..).of the question were addressed.

2) Make sure to post about a question that none of your classmates addressed. Check your classmates’ posts first to make sure no one else posted about the problem you selected. If you are the first in the class to post, you will get to select any question you want 😊. If you are the last, most probably you have one or two questions left to choose from! If all the problems are discussed, then reply to two students and discuss/correct the way they solved the problems

Exams and Final Exam

Exams constitute 40% of the course grade. Three online exams are scheduled for this course. The exams are due on the dates listed below. You will have four-day window to submit each exam. The final exam is cumulative.

Exam 1: Due Monday September 20th

Exam 2: Due on Monday October 18th

Final Exam: Due on Monday, December 6th

After you submit an exam to the mastering physics, go to our course page on D2L, click “assessments” tab on the top, select “assignments”, then submit your complete work on each problem in the exam to the

pertinent folder in the “assignments” area. Read the instructions there.

For each problem’s grade to be accepted, student’s work should to be submitted. Make sure to submit your exam’s work within 1 hour of submitting it on mastering physics.

Extra Credit

Few extra credit questions will be provided via the Mastering Physics website, as part of some of the homework assignments.

NOTE: The exam’s grade may not exceed the maximum grade (i.e. if you got 12 out of 10, it will be recorded as 10/10)

In the case of homework, the extra credit may exceed the maximum homework grade (i.e. if you got 22 out of 20, it will be recorded as 22, with 2 points extra credit).

Late and Makeup Work

Regarding the Homework assignments, late submissions will incur 20% penalty per day. Exams cannot be made up unless you have an excused absence for the entire exam window. Illness counts only if you can provide a doctor’s note for the entire exam window. Other than illness, planned absences should be discussed with the instructor at least two weeks beforehand so that make-up plans (if approved) may be arranged. Since the exam is online, you need to convince me why you cannot take the exam within its open window.

I am willing to discuss the following excuses: university sponsored events, scheduled surgery set before the first day of class (documentation required – you do not need to disclose why), funerals for immediate family only (documentation required).

NOTE that each exam has multiple-day window, an excuse absence must include the whole duration of the exam’s window (not just the last day).

Important Dates

Refer to: <https://msutexas.edu/busoffice/wd-schedule.php>

Desire-to-Learn (D2L) and Mastering Physics (MP)

Frequent use of D2L and Mastering Physics is a part of this course. Each student is expected to be familiar with these systems as they provide primary sources of communication regarding expectations, examination materials, assignments, and general course information. You can log into D2L through the MSU Homepage. If you experience difficulties, please contact the technicians listed for the program and cc your instructor.

The mastering course code and how to register in mastering physics (MP) is in the “START HERE” area of D2L.

Attendance

While attendance is not directly factored into your grade, you must log into D2L regularly if you want to do well.

Expectations: Students should log into the D2L and go to the content area. Study the power points and the videos while reading the chapter in the textbook and its examples. Solve the “check your understanding” questions in the power points before checking the answers on the next slide.

After you complete the reading, go to mastering physics area in D2L and take the homework pertinent to that chapter. Make sure to post on the discussion board. Email me if you have questions.

Labs and Lab Attendance:

It is mandatory to enroll in the lab component of this course. You will not pass this course without enrolling in the lab.

Labs will begin the week of September 13 and will be completed entirely face to face.

All lab assignments must be completed during the lab period unless otherwise noted. If you cannot attend your normal section at any time, please try to attend the other section of the same week. If this is not possible, you must make arrangement with the TA to make-up the lab.

In the event that you must quarantine due to COVID-19 exposure or positive testing, you must email professor Dunn at jackie.dunn@msutexas.edu for an online lab to be completed during the quarantine period in lieu of the face to face lab. This is the only condition under which you may complete an online lab.

Students may also have the option of attending a make-up lab week at the end where you may make up one lab only for normal absences.

Online Computer Requirements

Taking an online class requires you to have access to a computer (with Internet access) to complete and upload your assignments. It is your responsibility to have (or have access to) a working computer in this class. Assignments and tests are due on specific dates, and personal computer technical difficulties will not be considered reason for the instructor to allow students extra time to submit assignments/ tests. Computers are available on campus in various areas of the buildings as well as the Academic Success Center. Your computer being down is not an excuse for missing a deadline!! Our online classes can be accessed from any computer in the world which is connected to the internet. Contact your instructor immediately upon having computer trouble. If you have technical difficulties in the course, there is also a student helpdesk available to you. The college cannot work directly on student computers due to both liability and resource limitations however they are able to help you get connected to our online services.

Instructor Class Policies

It is important to recognize that the online classroom is in fact a classroom, and certain behaviors are expected when you communicate with both your peers and your instructor. These guidelines for online behavior and interaction are known as netiquette.

When communicating online, you should always:

- Treat instructor with respect, in email or in any other online communication
- Always use your professors' proper title: Dr. or Prof.
- Articulate your posts and emails, and make sure they are well-written and coherent
- Be concise and avoid slang as "wassup?" or abbreviations such as "u" instead of "you"
- Use standard fonts such as Times New Roman and use a size 12 or 14 pt. font
- Avoid using the caps lock feature AS IT CAN BE INTERPRETTED AS YELLING
- Be cautious as tone is sometimes lost in an email or discussion post and your message might be hostile or offensive
- Be careful with personal information (both yours and other's)

- Do not send confidential patient information via e-mail

When you send an email to your instructor, teaching assistant, or classmates, you should:

- Use a descriptive subject line that should include the course title. Keep in mind that your instructor is teaching several different courses.
- Sign your message with your name and return e-mail address

When posting questions on the Discussion Board or via email, you should:

- Ask questions that are on topic and within the scope of the course material
- Be as brief as possible while still making a thorough question.
- Make sure to state what you know and specify clearly the confusion point. Invest some time analyzing the problem in hand. I would like to see how you think. The more specific your question is, the clearer the answer you will get.

Example of BAD question: “ I have no idea how to solve problem 2” Example of good question: “ I see that the speed, and time values are given in problem 2, but I do not know what equation should I use to solve for the acceleration”.

Change of Schedule

Refer to: <https://msutexas.edu/busoffice/wd-schedule.php>

Refund and Repayment Policy

A student who withdraws or is administratively withdrawn from Midwestern State University (MSU) may be eligible to receive a refund for all or a portion of the tuition, fees and room/board charges that were paid to MSU for the semester.

HOWEVER, if the student received financial aid (federal/state/institutional grants, loans and/or scholarships), all or a portion of the refund may be returned to the financial aid programs. As described below, two formulas (federal and state) exists in determining the amount of the refund. (Examples of each refund calculation will be made available upon request).

Services for Students with Disabilities

In accordance with Section 504 of the Federal Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1990, Midwestern State University endeavors to make reasonable accommodations to ensure equal opportunity for qualified persons with disabilities to participate in all educational, social, and recreational programs and activities. After notification of acceptance, students requiring accommodations should make application for such assistance through Disability Support Services, located in the Clark Student Center, Room 168, (940) 397-4140. Current documentation of a disability will be required in order to provide appropriate services, and each request will be individually reviewed. For more details, please go to Disability Support Services.

College Policies

Campus Carry Rules/Policies:

Refer to: [Campus Carry Rules and Policies](#)

Smoking/Tobacco Policy:

College policy strictly prohibits the use of tobacco products in any building owned or operated by

WATC. Adult students may smoke only in the outside designated- smoking areas at each location.

Alcohol and Drug Policy:

To comply with the Drug Free Schools and Communities Act of 1989 and subsequent amendments, students and employees of Midwestern State are informed that strictly enforced policies are in place which prohibits the unlawful possession, use or distribution of any illicit drugs, including alcohol, on university property or as part of any university-sponsored activity. Students and employees are also subject to all applicable legal sanctions under local, state and federal law for any offenses involving illicit drugs on University property or at University- sponsored activities.

Grade Appeal Process

Update as needed. Students who wish to appeal a grade should consult the Midwestern State University <https://catalog.msutexas.edu/index.php>

Notice

Changes in the course syllabus, procedure, assignments, and schedule may be made at the discretion of the instructor.

Course Schedule

Notice

Changes in this schedule may be made at the discretion of the instructor.

Course Schedule

Each week there are Homework assignments, a Discussion board (**Db**) post and a Lab. Check the “Homework” and “Discussion board” sections in this syllabus for details. Mastering assignments are due at 11:59 PM while Discussion board’s post is due at 11:59 am. Check your schedule regarding to the lab day and time.

Ch or week	Activities/Assignments/Exams	Due Date
Chapter 1	Instructor’s power point, book Chapter 1, “check your understanding” questions, videos. Mastering Physics (MP) and Discussion board (Db) homework (H.W).	Due Friday 8/27
Chapter 2	Instructor’s power point, book Chapter 2, “check your understanding” questions, videos, MP & Db H.W.	Due Friday 9/3
Chapter 3	Instructor’s power point, book Chapter 3, “check your understanding” questions, videos, MP & Db H.W.	Due Friday 9/10
Chapter 4	Instructor’s power point, book Chapter 4, “check your understanding” questions, videos, MP & Db H.W.	Due Friday 9/17
Exam 1 preparation and review (chapters 1-4). Exam 1 is due Monday September 20 th online.		
Chapter 5	Instructor’s power point, book Chapter 4, “check your understanding” questions, videos, MP & Db H.W.	Due Friday 9/24
Chapter 6	Instructor’s power point, book Chapter 5, “check your understanding” questions, videos, MP & Db H.W.	Due Friday 10/1
Chapter 7	Instructor’s power point, book Chapter 6, “check your understanding” questions, videos, MP & Db H.W.	Due Friday 10/8
Chapter 8	Instructor’s power point, book Chapter 7, “check your understanding” questions, videos, MP & Db H.W.	Due Friday 10/15
Exam 2 preparation and review (chapters 5-8). Exam 2 is due Monday October 18 th online.		
Chapter 9	Instructor’s power point, book Chapter 8, “check your understanding” questions, videos, MP & Db H.W.	Due Friday 10/22
Chapter 10	Instructor’s power point, book Chapter 8, “check your understanding” questions, videos, MP & Db H.W.	Due Friday 10/29
Chapter 11	Instructor’s power point, book Chapter 9, “check your understanding” questions, videos, MP & Db H.W.	Due Friday 11/5
Chapter 12	Instructor’s power point, book Chapter 10, “check your understanding” questions, videos, MP & Db H.W.	Due Friday 11/19
Chapter 13	Instructor’s power point, book Chapter 13, “check your understanding” questions, videos, MP & Db H.W.	Due Friday 12/3
Final Exam preparation (chapters 1- 13 review). Final Exam is due online Monday, December 6 th		

The Mastering and Discussion assignments have 24-hour grace period. This is the reason the deadline on Mastering are set on Saturdays. The Exams, however, have NO Grace period.

Topics to be Covered:

Kinematics in One and Two or Three Dimensions

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Dynamics and Newton's Laws of Motion

Friction and Circular Motion

Gravitation

Work and Energy

Conservation of Energy

Linear Momentum

Rotational Motion and Angular Momentum

If time permits, we will also discuss:

Fluids

Oscillations

Sound