COURSE SYLLABUS

FRESNO STATE

PHYS 2A General Physics (Lecture) Syllabus

Fall 2024 (Corrected on 8/21/2024)

Table of Contents

Instructor Information

Instructor Name: Pei-Chun Ho
Department: Physics
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Office: McLane 255 (Doorbell on McLane 254)
Student Support Hours: (days/times):
Tuesday & Thursday at McLane 162: 7:45 PM – 9 PM
Monday & Wednesday at McLane 255: 12:15 PM – 1:15 PM

Course Information

Course Modality: face to-face
Course ID: PHYS2A-01-75663-2247
Units: 3
Class Meeting Location & Time: McLane 162 & M,W,F 8 AM – 8:50 AM
Canvas: fresnostate.instructure.com
Prerequisites:

Proficiency in High-School Algebra, Geometry, and Trigonometry

MATH 75*/Calculus I*: Functions, graphs, limits, continuity, derivatives and applications, definite and indefinite integrals.

or MATH 75A*/ Calculus with Review* IA: Functions, graphs, limits, continuity, derivatives, and applications, with extensive review of algebra and elementary functions.

or MATH 70*/Calculus for Life Science*: Functions and graphs, limits, derivatives, antiderivatives, differential equations, and partial derivatives with applications in Life Sciences..

or Math 6*/Precalculus*: Basic algebraic properties of real numbers; linear and quadratic equations and inequalities; functions and graphs; polynomials; exponential and logarithmic functions; analytic trigonometry and functions..

or DS 71*/Quantitative Analysis*: Quantitative formulation and solution of problems in various disciplines, including mathematics of finance, linear programming, probability, and differential calculus.

or permission to register from the physics department office

Course description:
This three-unit course will introduce the fundamentals of classical Newtonian mechanics. Topics includes linear and circular motion; energy; linear and angular momentum; energy; systems of particles; rigid-body motion; gravity; waves and sound; heat and thermodynamics. In addition, the course fits into the curriculum General Education (G. E.) Breadth B1 which requires 3 lecture and 3 laboratory hours. (catalog.fresnostate.edu).

♦ It is usually expected that students will spend approximately 2 hours of study time outside of class for every one hour in lecture. Since this is a 3-unit class, you should expect to study an average of 6 hours outside of class each week.

Required Course Materials

I. *Immediate Access* (*IA*) is set up in Canvas for this course by choosing "Macmillan Learning", then "Achieve."

- Enrolling into an Immediate Access (IA) course means that all of the materials are delivered to students digitally through ***Canvas***.

  Course Name: **2024 Fall PHYS2A**
  Course ID: **tahygq**

- IA contains an eBook, prelecture activities, and homework, and iClicker-Reef from MacMillan Learning-Achieve:
  - eBook of "**College Physics, Volume 1**" (by ***OpenStax***), which is licensed under a Creative Commons Attribution 4.0 International License (CCBY4.0). A PDF format of this textbook can **"Download for free at https://openstax.org/details/books/college-physics-2e."**
  - Prelecture activities (prelecture video and bridge assignment (by ***Achieve***),
  - Homework (by ***Achieve***).
  - iClicker-Reef operated through APP (on laptops or Mobile device) is required for in-class quick quizzes. The iClicker-Reef Class is "**PHYS2AHo24F**" (remember that it has been synced with the Achieve course).

- An Immediate Access (IA) access code will be delivered to each enrolled student's Fresno State email account, in the Canvas IA VitalSource link. It is the STUDENT'S RESPONSIBILITY to read all communication coming from the Kennel Bookstore. They should look for email headers such as "IMPORTANT INFORMATION" or "REMINDERS" and check the SPAM folder!
- ALL IA materials are accessible for the first few days of the start of the semester to all students enrolled. After the opt-out date of the term, students who did not OPT OUT of the materials will be charged on their Fresno State student account the cost of the materials. This information can be found in their welcome letter email from the Kennel Bookstore. If they did not receive an email, please contact ecarmona@mail.fresnostate.edu
- OPTING OUT means that students DO NOT want the digitally delivered materials we are offering. STUDENTS will then be responsible to get the materials on your own – usually at a higher cost. If students OPT OUT, their digital IA access will be revoked. **IMPORTANT!** If students OPT OUT of the program, they will also OPT OUT of the required ADAPTIVE materials associated with the IA eBook including their homework, quizzes, tests, etc. This access will be turned off after the last date to opt-out for the semester.
- We ask students to **NOT purchase IA digital materials directly from the Publisher website or make any other outside purchase** that would require them to enter a credit card or pay out of pocket. This will result in a DOUBLE charge! If they are OPTED IN, the campus will bill their Fresno State student account after the opt out date.
- **DO NOT pay for your materials through Canvas!!!** If the link provided requires an "ACCESS CODE" it will be delivered to the student in their **IA VitalSource** link or on any IA emails sent to their Fresno State email account

from the Kennel Bookstore. ALL CHARGES will be billed to their Fresno State student account.

- **THE LAST DAY TO OPT OUT for Fall 2024 is September 6, 2024**. – It is the STUDENT'S responsibility to OPT OUT. Once they click on the OPT OUT link in their Professor's Canvas page, they will receive a confirmation email within 24 hours. If they did not receive an email within 24 hours, please contact ecarmona@mail.fresnostate.edu
- Student accounts will be charged around **September 17, 2024**. Charges will be due around **September25, 2024**. Students may pay on their Fresno State student account either online or at Joyal Administration.

**To make an on-line payment, go to https://my.fresnostate.edu, click on Student Self Service>Student Center>My Finances>View eBills/Make a Payment.
**To see your current balance, go to Student Self Service>Student Center>My Finances>Account Inquiry.

- If students are on financial aid, scholarship, or other benefit programs they are still obligated to pay on their account…They should put this money aside.
- If students enroll **after** the Opt-out date, they will have **24 hours** to review the materials and contact ecarmona@mail.fresnostate.edu if they choose to purchase elsewhere and OPT OUT of the program.
- Any questions about the IA program can be directed to ecarmona@mail.fresnostate.edu

II. Scientific Calculator (Graphing Calculator is "Not" allowed for this course).
III. A Fresno Stat email account. Instructor will not respond to the emails not sent through the Fresno State system.
IV. Zoom (available to all Fresno State students) https://fresnostate.edu/help/students/video_conferencing/

Course Specifics

This course will include assigned prelecture activities, which includes prelecture video and bridge assignments (i.e., Macmillum-Achieve through IA) that should be completed before students come to each virtual class meeting (via Zoom Meeting). During the virtual class sessions there will be lectures, demonstrations, quick quizzes, and discussions. Associated assigned reading for each lecture can be found in the ebook. In order to facilitate your understanding of assigned readings, lecture notes in PDF format can be available after each Zoon class meeting, which may review portions of the readings, but they will not serve as a substitute for reading the materials. Important additional information will be presented during the lectures, which will be included in the exams.

Course goals: Upon completion of this course, students are expected to be able to analyze, predict, and model the linear or rotational motion of macroscopic objects under the influences of various external forces.

Student Learning Outcomes: Students will develop a strong foundation to identify, analyze, and solve problems with physical models within the core driplines described in the textbook of College Physics, which are universally recognized as standards in undergraduate physics education.

PHYS 2A along with PHYS 2AL is also a General Education (GE) course in the area B1, which is expecting students to understand and actively explore fundamental principles in the Physical Sciences and the methods of developing and testing hypotheses used in the analysis of the physical universe.

GE Program ePortfolio Requirement for Students (APM 215). Students can upload one of their best PHYS 2AL lab reports to Canvas in order to fulfill the requirement of GE assessment.

Course Requirements/Assignments:

I. Prelecture Activities: prelecture video and bridge assignment need to be completed 2 hours before the virtual class meeting time. They will be assigned at least a week ahead and can be accessed through Achieve. (3% of lecture grade)
II. Quick Quizzes: In order to encourage students to preview the ebook contents, perform prelecture activities before class, focus learning in the virtual class room, and engages in interactive learning, 1-10 questions will be randomly given as quick quizzes in most of the class meeting time. Total of the quick-quiz score which will be counted as 6% of the lecture grade. Full participant points will only be given when students complete all quick-quiz questions.
III. Homework will be assigned via Achieve and usually given in the end of each week. Homework passes the deadline will be counted as zero. (15% of Lecture weighted grade)
IV. Three midterms will be offered and total weighs 51% of lecture grade.
V. Final exam will be given according to the University Final Exam (25% of lecture grade).

Besides the Zoom Office hours student can talk to the instructor through Zoom, other communications are preferred done through Fresno State email. *When sending an email message you **must** use a specific format. Type your last name and first initial in the 'subject' line along with the course number (PHYS 2A). Example: Doe, John PHYS2A.*

Instructions for significant assignments: If your course has a project, a paper, or other significant assignment, please give detailed requirements and instructions on how to complete them, such as length, fonts and/or number of references that must be used for the project/paper.

Attendance: Attendance is mandatory.

Grading policy:

A grade of 60% or better is required to pass this class.

Table 1 Assignment and Percentage Distribution

Assignment	Percent
Prelecture Activities (Video & Bridge Assignment)	3 % (× 85%)

Assignment	Percent
In-Class Quick Quizzes	6 % (× 85%)
Homework	15 % (× 85%)
Three Midterms	51 % (× 85%)
Final Exam	25 % (× 85%)
Laboratory (reports & Quizzes)	100% (× 15%)

Table 2 Distribution of Letter Grade to Percent

Letter Grade	Upper-limit Percent	Lower-limit Percent
A	100%	87%
B	86.99%	74%
C	73.99%	60%
D	59.99%	50%
F	49.99%	0%

Course Policies & Safety Issues

Classroom Behavior

Both the instructor and the students are to adhere to high standards of professionalism, common courtesy, and respect for others. Please refrain from the following behaviors, bearing in mind that if your behavior interrupts the class you may be asked to leave the class for the rest of the period:

- Coming to class late, please use the back doors for entrance. If you must leave early, please sit near a door.
- During lecture sessions, mute all cell phones, laptops and other electronic devices. You only need one electronic device to run iClicker-Cloud.
- Do not speak or write to anyone in a rude or aggressive fashion, or speak of others in a disrespectful fashion
- The University Policy on Disruptive Classroom Behavior (APM 419) is well worth reading and can be found in the Class Schedule and the Academic Policy Manual.
- If you are absent from class, it is your responsibility to check on announcements made while you were away.

If you are absent from class, it is your responsibility to check on announcements made while you were away.

- ❖ Audio and video recordings of class lectures are prohibited unless I give you explicit permission to do it. Students with an official letter from the Services for Students with Disabilities office may record the class if SSD has approved that service."

Late work and make-up work policy: Either delayed or make-up exams for three midterms and final exam will not be allowed by the instructor. If a midterm is missed for a compelling reason (e.g. illness documented by a physician's note), the part of the

grade that midterm would have counted will be voided, and the rest of the grade will be counted as 100%. If the final exam is missed for a compelling reason (e.g. illness documented by a physician's note), the student will receive a grade of **"I"** (incomplete) for PHYS 4A for the semester. It will also be the student's responsibility to contact the university administration in a timely manner, and make the necessary arrangements to remove the **"I"** grade. Please check "the California State University Fresno General Catalog" for regulation regarding the **"I"** grade. Only students who can document very compelling reasons to miss final exams, e.g. with a physician's note, will be eligible for incompletes; other students missing the final exam will receive 0% for the grade of final exam.

The following sections regarding COVID are subject to change given changing circumstances on-campus and in the community. Please check the COVID website for the most up-to-date information

Vaccination: The California State University system strongly recommends the COVID-19 vaccination and booster for all students, faculty, and staff. As a reminder, you are eligible for a booster five (5) months after receiving a final dose of the Pfizer or Moderna vaccine; or two (2) months after receiving a Johnson & Johnson vaccine.

Face Coverings: Fresno State no longer requires masks to be worn indoors, but based on updated guidance from public health experts, the University highly recommends that all students, faculty, and staff, regardless of vaccination status, wear a surgical grade or KN95 mask indoors. ***Faculty will continue to have the discretion to require face coverings for their in-person classes as they evaluate the health and safety needs of their individual classroom environments***.

Testing: The campus was fortunate to receive the Higher Education Emergency Relief (HEERF) Funds during the pandemic and through June 2023 but funds are no longer available. Students will still be able to obtain free kits from the Student Health and Counseling Center. Additionally, free COVID-19 test options are offered by the Fresno County Department of Public Health.

Please remember that the same student conduct rules that are used for in-person classroom instruction also apply for virtual/online classrooms. Students are prohibited from any unauthorized recording, dissemination, or publication of any academic presentation, including any online classroom instruction, for any commercial purpose. In addition, students may not record or use virtual/online instruction in any manner that would violate copyright law. Students are to use all online/virtual instruction exclusively for the educational purpose of the online class in which the instruction is being provided. Students may not re-record any online recordings or post any online recordings in any other format (e.g., electronic, video, social media, audio recording, web page, internet, hard paper copy, etc.) for any purpose without the explicit written permission of the faculty member providing the instruction. Exceptions for disability-related accommodations will be addressed by Student Disability Services working in conjunction with the student and faculty member.

Plagiarism Detection: The campus subscribes to Turnitin, a plagiarism prevention service, through Canvas. You will need to submit written assignments to Turnitin. Student work will be used for plagiarism detection and for no other purpose. The student may indicate in writing to the instructor that they refuse to participate in the plagiarism detection process, in which case the instructor can use other electronic means to verify the originality of their work.

Supplemental Instruction
Supplemental Instruction (SI) is provided for all students enrolled in this course who want to improve their understanding of the material. SI sessions are led by a student who has already mastered the course material and been trained to facilitate group sessions where students can meet to compare class notes, review and discuss important concepts, develop strategies for studying, and prepare for exams. The SI leader attends this class and communicates regularly with the instructor to ensure that accurate information is given. Attendance at SI sessions is free and voluntary for any student enrolled in this course. Students may attend as many times as they choose.

The Supplemental Instruction (SI) leader and SI schedule for this class are below:

Name:
Email:

Dispute Resolution: If there are questions or concerns that you have about this course that you and I are not able to resolve, please feel free to contact the Chair of the department to discuss the matter.

Chair's name: Doug Singleton
Department name: Physics
Chair's email: dougs@mail.fresnostate.edu
Department phone number: (559) 278-2371

Intellectual Property: All course materials, including but not limited to the syllabus, readings, quiz questions, exam questions, and assignments prepared by the instructor are property of the instructor and University. Students are prohibited from posting course materials online (e.g., Course Hero) and from selling course materials to or being paid for providing materials to any person or commercial firm without the express written permission of the professor teaching this course. Doing so will constitute both an academic integrity violation and a copyright violation. Audio and video recordings of class lectures as well as images of chat or messages shared during course sessions are prohibited unless I give you explicit permission in advance. Students with an official letter from the Services for Students with Disabilities office may record the class if SSD has approved that service. Otherwise, recordings of lectures are included in the intellectual property notice described above. These provisions exist regardless of the modality of the course. That is they apply to in-person, hybrid and online courses.

Student Ratings of Instruction: In the final weeks of the semester, you will be asked to complete a short survey to provide feedback about this class. The primary goal of student ratings is to help your instructor improve the class. Feedback will also be

reviewed by the department chair and the college dean. You will be given 15 minutes of class time to complete student ratings. Please offer feedback honestly and thoughtfully. Your participation is appreciated. You can access your student rating surveys and get more information at Fresno State Student Ratings for Instruction (SRI)

University Policies

Students with Disabilities: Upon identifying themselves to the instructor and the university, students with disabilities will receive reasonable accommodation for learning and evaluation. For more information, contact Services to Students with Disabilities in the University Library, Room 1202 (278-2811).

The following University policies can be found on the web at:

- Adding and Dropping Classes
- Cheating and Plagiarism
- Computers
- Copyright Policy
- Disruptive Classroom Behavior
- Honor Code
- Title IX

Fresno State is committed to fostering a safe, productive learning environment for all students. Title IX and CSU policy prohibit discrimination on the basis of sex, which includes sexual harassment, domestic and dating violence, sexual assault, sexual exploitation, and stalking. We understand that sexual violence can undermine students' academic success and we encourage students who have experienced some form of sexual misconduct to access appropriate resources so they can get the support they need and deserve.

As an instructor, I have a mandatory reporting responsibility as a part of my role. It is my goal that you feel comfortable sharing information related to your life experiences in classroom discussions, in your written work, and in our one-on-one meetings. I will seek to keep the information you share private to the greatest extent possible. However, I am required to report information I receive regarding sexual misconduct or information about a crime that may have occurred during your time at Fresno State.

Students can report incidents of alleged sexual misconduct to either or both of the following resources:

Title IX and Clery Compliance Office | titleix.fresnostate.edu | 559.278.5003
Fresno State Police Department | fresnostate.edu/police | 559.278.8400

Students can access confidential support from two separate resources on campus:

Survivor Advocates | fresnostate.edu/survivoradvocate | 559.278.6796
Counseling Services | fresnostate.edu/health/counseling | 559.278.2734

If you have concerns and you are unsure who to contact, please visit the Concern & Action Guide.

Emergency Information: In the event of an emergency, everyone in the campus community becomes a partner in the response. To ensure you are prepared and remain calm you must make yourself familiar with campus protocols. To contact the Fresno State Police Department call 559.278.8400 from your cell phone or 911 from a campus phone. Prior to an emergency, assess your environment for options depending on the emergency. Identify all possible exit routes, in an emergency always use the closest most safe exit. Once you exit the building go to the predetermined evacuation assembly point, if that is unavailable then go to an open safe space away from the emergency. Identify where and how you can secure yourself inside if you need to shelter in place or hide from a threat. Be prepared to help guide those around you and assist individuals who may be in need. Additional information can be found at www.fresnostate.edu/emergency

University Services

The following University services can be found on the web at:

- Associated Students, Inc.
- Students with Disabilities
- Dream Success Center
- Library
- Learning Center Information
- Student Health and Counseling Center
- Academic Success Coaching
- Survivor Advocacy
- Writing Center

Subject to Change Statement

THIS SYLLABUS AND SCHEDULE ARE SUBJECT TO CHANGE IN THE EVENT OF EXTENUATING CIRCUMSTANCES.

Course Calendar

Date	Exam	Points
Friday, 9/20/2024 8 – 8:50 AM	1st Midterm Either in Bulldog Testing Center or on Canvas with Lockdown Browser + Webcam	100
Friday, 10/18/2024	2nd Midterm	100

Date	Exam	Points
8 – 8:50 AM	Either in Bulldog Testing Center or on Canvas with Lockdown Browser + Webcam	
Friday, 11/15/2024 8 – 8:50 AM	3rd Midterm Either in Bulldog Testing Center or on Canvas with Lockdown Browser + Webcam	100
Wednesday, 12/18/2024 8:45AM – 10:45 AM	Final Exam McLane 162	100

Tentative Course Schedule

(May be given as a separate document)
Following are schedules showing class meeting dates for Spring 2024 for Monday and Wednesday courses, Monday, Wednesday, and Friday courses, and Tuesday and Thursday courses.

Table 3 Fall 2024 Tentative Course Schedule: Monday, Wednesday, Friday Courses

Day	Date	Topic	Reading Assignment
1	Wed., Aug 21	Course Syllabus & General Rules Fundamental Quantities, Units, Significant Figures (study on students' own) 1-D Kinematics	Math Review On Sapling (Self Test) Syllabus Posted on Canvas Ch1 Introduction: The Nature of Science and Physics 1.1 Physics: An Introduction 1.2 Physics Quantities and Units 1.3 Accuracy, Precision, and Significant Figures 1.4 Approximation (study on students' own and will be included in the exams) Ch2 Kinematics (Motion in 1 D) 2.1 Displacement 2.2 Vectors, Scalars, and Coordinate Systems 2.3 Time, Velocity, and Speed 2.4 Acceleration

Day	Date	Topic	Reading Assignment
			2.8 Graphical Analysis of 1-D Motion
2	Fri., Aug 23	1-D Kinematics	Ch2 Kinematics (Motion in 1 D) 2.5 Motion Equations for Constant Acceleration in 1D 2.6 Problem-Solving Basics for 1-D Kinematics 2.7 Falling Objects 2.8 Graphical Analysis of 1-D Motion
3	Mon., Aug 26	1-D Kinematics	Ch2 Kinematics (Motion in 1 D) 2.7 Falling Objects 2.8 Graphical Analysis of 1-D Motion 2.2 Vectors, Scalars, and Coordinate Systems 2.8 Graphical Analysis of 1-D Motion
4	Wed., Aug 28	Vector Addition	Ch2 Kinematics (Motion in 1 D) 2.2 Vectors, Scalars, and Coordinate Systems Ch3 Two-Dimensional Kinematics 3.2 Vector Addition and Subtraction: Graphical Methods
5	Fri., Aug 30	Vector Addition	Ch2 Kinematics (Motion in 1 D) 2.2 Vectors, Scalars, and Coordinate Systems Ch3 Two-Dimensional Kinematics 3.2 Vector Addition and Subtraction: Graphical Methods
N/A	Mon., Sep 2	Holiday, Labor Day	
6	Wed., Sep 4	2-D Kinematics & Projectile Motion	Ch3 Two-Dimensional Kinematics 3.1 Kinematics in 2D 3.4 Projectile Motion
7	Fri., Sep 6	2-D Kinematics & Projectile Motion	Ch3 Two-Dimensional Kinematics 3.1 Kinematics in 2D 3.4 Projectile Motion
8	Mon., Sep 9	2-D Kinematics & Projectile Motion	Ch3 Two-Dimensional Kinematics 3.1 Kinematics in 2D 3.4 Projectile Motion
9	Wed., Sep 11	Relative Motion (Classic Relativity)	Ch3 Two-Dimensional Kinematics 3.5 Addition of Velocities (Relative Motion, Non-Relativistic)

Day	Date	Topic	Reading Assignment
10	Fri., Sep 13	Relative Motion (Classic Relativity)	Ch3 Two-Dimensional Kinematics 3.5 Addition of Velocities (Relative Motion, Non-Relativistic)
11	Mon., Sep 16	Newton's Laws of Motion	Ch4 Dynamics: Force and Newton's Laws of Motion 4.1 Development of Force Concept 4.2 Newton's 1st Law of Motion: Inertia 4.3 Newton's 2nd Law of Motion: Concept of a System 4.4 Newton's 3rd Law of Motion: Symmetry in Forces Ch6 Uniform Circular Motion and Gravitation 6.5 Newton's Universal Law of Gravitation
12	Wed., Sep 18	Forces & Free-Body Diagrams	Ch4 Dynamics: Force and Newton's Laws of Motion 4.5 Normal, Tension, and Other Examples of Forces Ch5 Further Applications of Newton's Laws: Friction, Drag, and Elasticity 5.3 Elasticity: Stress and Strain (Most Omitted, except "Hooke's Law" for Spring Force) Ch16 Oscillatory Motion and Waves 16.1 Hooke's Law (for Spring Force) Ch4 Dynamics: Force and Newton's Laws of Motion 4.6 Problem-Solving Strategies
13	Fri., Sep 20 **Midterm 1**	Forces & Free-Body Diagrams	Ch4 Dynamics: Force and Newton's Laws of Motion 4.5 Normal, Tension, and Other Examples of Forces Ch5 Further Applications of Newton's Laws: Friction, Drag, and Elasticity 5.4 Elasticity: Stress and Strain (Most Omitted, except "Hooke's Law" for Spring Force) Ch16 Oscillatory Motion and Waves 16.1 Hooke's Law (for Spring Force) Ch4 Dynamics: Force and Newton's Laws of Motion 4.6 Problem-Solving Strategies

Day	Date	Topic	Reading Assignment
14	Mon., Sep 23	Forces & Free-Body Diagrams Friction	Ch4 Dynamics: Force and Newton's Laws of Motion 4.6 Problem-Solving Strategies 4.7 Further Applications of Newton's Laws of Motion Ch5 Further Applications of Newton's Laws: Friction, Drag, and Elasticity 5.1 Friction 5.2 Drag Forces (Omitted) 5.3 Elasticity: Stress and Strain (Omitted)
15	Wed., Sep 25	Uniform Circular Motion	Ch6 Uniform Circular Motion and Gravitation 6.1 Rotational Angle and Angular Velocity 6.2 Centripetal Acceleration 6.3 Centripetal Force 6.4 Fictitious Forces and Non-inertial Frames: The Coriolis Force (Omitted)
16	Fri., Sep 27	Free-Body Diagram in Circular Motion	Ch6 Uniform Circular Motion and Gravitation 6.3 Centripetal Force 6.4 Fictitious Forces and Non-inertial Frames: The Coriolis Force (Omitted) 6.5 Newton's Universal Law of Gravitation 6.6 Satellites and Kepler's Laws: An Argument for Simplicity
17	Mon., Sep 30	Work & Kinetic Energy	Ch7 Work, Energy, and Energy Resources 7.1 Work: The Scientific Definition 7.2 Kinetic Energy and the Work-Energy Theorem
18	Wed., Oct 2	Work by Conservative Forces (Gravitational Force and Spring Forces) Potential Energy Conservation of Mechanical Energy	Ch7 Work, Energy, and Energy Resources 7.4 Conservative Forces and Potential Energy 7.3 Gravitation Potential Energy 7.6 Conservation of Energy

Day	Date	Topic	Reading Assignment
19	Fri., Oct 4	Work done by Nonconservative Force (Friction) Conservation of Energy Power	Ch7 Work, Energy, and Energy Resources 7.5 Nonconservative Forces 7.6 Conservation of Energy 7.7 Power
20	Mon., Oct 7	Center of Mass	
21	Wed., Oct 9	Linear Momentum, Impulse, and Momentum Conservation	Ch8 Linear Momentum and Collisions 8.1 Conservation of Linear Momentum 8.2 Impulse 8.3 Conservation of Momentum
22	Fri., Oct 11	Elastic Collisions	Ch8 Linear Momentum and Collisions 8.4 Elastic Collisions in 1D 8.6 Collisions of Point Masses in 2D 8.3 Conservation of Momentum
23	Mon., Oct 14	Inelastic Collisions	Ch8 Linear Momentum and Collisions 8.5 Inelastic Collisions in 1D 8.6 Collisions of Point Masses in 2D 8.7 Introduction to Rocket Propulsion
24	Wed., Oct 16	Torque	Ch9 Statics and Torque 9.2 The 2nd Condition for Equilibrium 8.6 Collisions of Point Masses in 2D 8.7 Introduction to Rocket Propulsion
25	**Fri., Oct 18** **Midterm 2**		
26	Mon., Oct 21	Torque Static Equilibrium	Ch9 Statics and Torque 9.1 The 1st Condition for Equilibrium 9.2 The 2nd Condition for Equilibrium 9.3 Stability 9.4 Application of Statics, Including Problem-Solving Strategies
27	Wed., Oct 22	Static Equilibrium	Ch9 Statics and Torque 9.1 The 1st Condition for Equilibrium 9.2 The 2nd Condition for Equilibrium 9.3 Stability 9.4 Application of Statics, Including Problem-Solving Strategies

Day	Date	Topic	Reading Assignment
			9.6 Forces and Torques in Muscles and Joints (Study on Student's Own)
28	Fri., Oct 25	Rotational Kinematics	Ch10 Rotational Motion and Angular Momentum 10.1 Angular Acceleration 10.2 Kinematics of Rotational Motion
29	Mon., Oct 28	Rotational Kinematics & Rotational Kinetic Energy & Moment of Inertia	Ch10 Rotational Motion and Angular Momentum 10.3 Dynamics of Rotational Motion: Rotational Inertia 10.4 Rotational Kinetic Energy
30	Wed., Oct 30	Pure Rolling Motion – Rolling Without Slipping	Ch10 Rotational Motion and Angular Momentum 10.4 Rotational Kinetic Energy
31	Fri., Nov 1	Angular Momentum & Conservation of Angular Momentum	Ch10 Rotational Motion and Angular Momentum 10.5 Angular Momentum and Its Conservation 10.6 Collisions of Extended Bodies in 2D
32	Mon., Nov 4	Angular Momentum & Procession	Ch10 Rotational Motion and Angular Momentum 10.6 Collisions of Extended Bodies in 2D 10.7 Gyroscopic Effects: Vector Aspects of Angular Momentum
33	Wed., Nov 6	Simple Harmonic Motion (S.H.M.) in a Spring-Mass System	Ch16 Oscillatory Motion and Waves 16.1 Hooke's Law (Review) 16.2 Period and Frequency in Oscillations 16.3 Simple Harmonic Motion: A Special Periodic Motion
34	Fri., Nov 8	S.H.M. in a Spring-Mass System	Ch16 Oscillatory Motion and Waves 16.5 Energy and the Simple Harmonic Oscillator 16.6 Uniform Circular Motion and Simple Harmonic Motion 16.7 Damped Harmonic Motion (Omitted)

Day	Date	Topic	Reading Assignment
			16.8 Force Oscillation and Resonance (Omitted) 16.9 Waves (Omitted) 16.10 Superposition and Interference (Omitted) 16.11 Energy in Waves: Intensity (Omitted)
N/A	Mon., Nov 11	Holiday, Veterans Day	
35	Wed., Nov 13	Simple Harmonic Motion (S.H.M.) in a Simple Pendulum	Ch16 Oscillatory Motion and Waves 16.4 Simple Pendulum
36	**Fri., Nov 15** **Midterm 3**	Simple Harmonic Motion (S.H.M.) in a Simple Pendulum	Ch16 Oscillatory Motion and Waves 16.4 Simple Pendulum
37	Mon., Nov 18	Fluid Statics	Ch11 Fluid Statics 11.5 Pascal's Law 11.7 Archimedes' Principle (Buoyant Force) 11.8 Cohesion and Adhesion in Liquids: Surface Tension and Capillary Action (Omitted) 11.9 Pressure in the Body (Study on Student's Own)
38	Wed., Nov 20	Fluid Dynamics	Ch12 Fluid Dynamics and Its Biological and Medical Applications 12.1 Flow Rate and Its Relation to Velocity 12.2 Bernoulli's Equation 12.3 The Most General Applications of Bernoulli's Equation 12.4 Viscosity and Laminar Flow; Poiseuille's Law (Omitted) 12.5 The Onset of Turbulence (Omitted) 12.6 Motion of an Object in a Viscous Fluid (Omitted) 12.7 Molecular Transport Phenomena: Diffusion, Osmosis, and Related Processes (Omitted)
39	Fri., Nov 22	Temperature, Ideal Gas Law & Kinetic Theory	Ch13 Temperature, Kinetic Theory and the Gas Law 13.1 Temperature 13.2 Thermal Expansion of Solids and Liquids 13.3 The Ideal Gas Law

Day	Date	Topic	Reading Assignment
			13.4 Kinetic Theory: Atomic and Molecular Explanation of Pressure and Temperature 13.5 Phase Changes 13.6 Humidity, Evaporation, and Boiling
N/A	Mon., Nov 25	Thanksgiving Break	
N/A	Wed., Nov 27	Thanksgiving Break	
N/A	Fri., Nov 29	Thanksgiving Break	
40	Mon., Dec 2	Temperature, Ideal Gas Law & Kinetic Theory	Ch13 Temperature, Kinetic Theory and the Gas Law 13.1 Temperature 13.2 Thermal Expansion of Solids and Liquids 13.3 The Ideal Gas Law 13.4 Kinetic Theory: Atomic and Molecular Explanation of Pressure and Temperature 13.5 Phase Changes 13.6 Humidity, Evaporation, and Boiling
41	Wed., Dec 4	Temperature, Ideal Gas Law & Kinetic Theory	Ch13 Temperature, Kinetic Theory and the Gas Law 13.1 Temperature 13.2 Thermal Expansion of Solids and Liquids 13.3 The Ideal Gas Law 13.4 Kinetic Theory: Atomic and Molecular Explanation of Pressure and Temperature 13.5 Phase Changes 13.6 Humidity, Evaporation, and Boiling
42	Fri., Dec 6	Temperature, Ideal Gas Law & Kinetic Theory	Ch13 Temperature, Kinetic Theory and the Gas Law 13.1 Temperature 13.2 Thermal Expansion of Solids and Liquids 13.3 The Ideal Gas Law 13.4 Kinetic Theory: Atomic and Molecular Explanation of Pressure and Temperature 13.5 Phase Changes

Day	Date	Topic	Reading Assignment
			13.6 Humidity, Evaporation, and Boiling
43	Mon., Dec 9	Temperature, Ideal Gas Law & Kinetic Theory	Ch13 Temperature, Kinetic Theory and the Gas Law 13.1 Temperature 13.2 Thermal Expansion of Solids and Liquids 13.3 The Ideal Gas Law 13.4 Kinetic Theory: Atomic and Molecular Explanation of Pressure and Temperature 13.5 Phase Changes
44	Wed., Dec 11 **Last Day of Instruction**	Heat: Thermal Energy	Ch14 Heat and Heat Transfer Methods 14.1 Heat 14.2 Temperature Change and Heat Capacity 14.3 Phase Chang and Latent Heat

Table 4 Finals Week Schedule, M, W, F courses

Finals week	Days	Dates
Final Exam Preparation & Faculty Consultation Days:	Thursday and Friday	Dec. 12 and 13
Final Semester Examinations	Monday – Thursday	Dec 16 to 19
Final Exam in this course	Wednesday	Dec 18 8:45 – 10:45 AM