

## PHYS 4A Mechanics and Wave Motion: Syllabus

Spring 2024

(Updated on 1/16/2024)

---

*After completing your changes to this template, [update this table of contents](#), go to References>Update Table and select Update Page Numbers Only.*

---

### Table of Contents

Instructor Information .....	2
Course Information.....	2
Required Course Materials.....	2
Course Specifics .....	4
Course Policies & Safety Issues .....	6
University Policies .....	9
University Services.....	10
Subject to Change Statement .....	10
Course Calendar .....	11
Tentative Course Schedule .....	11

## Instructor Information

Instructor Name: Pei-Chun Ho

Department: Physics

Email / Telephone: [peiho@mail.fresnostate.edu](mailto:peiho@mail.fresnostate.edu) / (559) 278-5990

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: 3 PM – 4 PM

## Course Information

Course Modality: face to-face

Course ID: PHYS4A-07-36224-2243

Units: 3

Class Meeting Location & Time: McLane 162 & T, Th 6:30 PM – 7:45 PM

Canvas: [fresnostate.instructure.com](https://fresnostate.instructure.com)

**Prerequisites:**

***Proficiency in High-School Algebra, Geometry, and Trigonometry***

***Math 75/Calculus I or MATH 75A & B/Calculus with Review IA& IB (definitely taken in previous semesters):*** inequalities, functions, graphs, limits, continuity, differential calculus, introductory integral calculus, and applications.

***Math 76/Calculus II (taken either concurrently or in previous semesters):***

Techniques and applications of integration, improper integrals, conic sections, polar coordinates, and infinite series.

**Course description:**

This three-unit course will introduce the fundamentals of classical Newtonian mechanics. Topics include linear and circular motions; analysis of various forces, free-body diagrams; studies of various energies: work, kinetic energy, potential energy, mechanical energy, energy in general; systems of particles; linear and angular momentum; rigid-body motion and rotational dynamics; gravity; wave motion and fluids. In addition, the course fits into the curriculum General Education (G. E.) Breadth B1 when taken with PHYS 4AL.

([catalog.fresnostate.edu](https://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 for this course by using **Macmillan Learning - Achieve**.
  - Enrolling into an Immediate Access (IA) course means that all of the materials are delivered to students digitally through the **Canvas** system.  
Course Name: **2024 Spring PHYS4A**  
Course ID: **zvdmq8**

- IA contains an eBook, prelecture activities, and homework, and iClicker-Reef from MacMillan Learning-Achieve:
  - eBook of “**University 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/university-physics-volume-1>**.”
  - 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 “**PHYS4AHo24S**” (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](mailto: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 Spring 2024 is February 2, 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](mailto:ecarmona@mail.fresnostate.edu)

- Student accounts will be charged around **February 8, 2024**...Charges will be due around **February 12, 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](mailto: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](mailto: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/](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., Macmillan Learning – Achieve accessed through IA) that should be completed before students come to each virtual class meeting (via Zoom Meeting). During the virtual or face-to-face 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 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 disciplines described in the text book of University Physics, which are universally recognized as standards in undergraduate physics education.

PHYS 4A along with PHYS 4AL 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 4AL 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 1 hour before the virtual class meeting time. They will be assigned at least a week ahead and can be accessed through Achieve. (3% of weighted 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 weighted 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 weighted grade)
- IV. Three midterms will be offered and total weighs 51%.
- V. Final exam will be given according to the University Final Exam (25% of weighted 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 55% or better is required to pass this class.

Table 1 Assignment and Percentage Distribution

Assignment	Percent
Prelecture Activities (Video & Bridge Assignment)	3 %
In-Class Quick Quizzes	6 %
Homework	15 %
Three Midterms	51 %

Assignment	Percent
Final Exam	25 %

Table 2 Distribution of Letter Grade to Percent

Letter Grade	Upper-limit Percentage	Lower-limit Percentage
A	100%	85%
B	84.99%	70%
C	69.99%	55%
D	54.99%	45%
F	44.99%	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: [Jonathan Carter](#)

Email: [jonathancarter23@mail.fresnostate.edu](mailto:jonathancarter23@mail.fresnostate.edu)

**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](mailto:dougs@mail.fresnostate.edu)

Department phone number: [\(559\) 278-2371](tel:(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](http://titleix.fresnostate.edu) | 559.278.5003

Fresno State Police Department | [fresnostate.edu/police](http://fresnostate.edu/police) | 559.278.8400

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

Survivor Advocates | [fresnostate.edu/survivoradvocate](http://fresnostate.edu/survivoradvocate) | 559.278.6796

Counseling Services | [fresnostate.edu/health/counseling](http://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](http://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
Thursday, 2/15/2024 (Time: To Be Announced)	1st Midterm on Canvas with Lockdown Browser + Webcam	100
Thursday, 3/7/2024 6:30 PM – 7:45 PM	2nd Midterm on Canvas with Lockdown Browser + Webcam	100
Thursday, 4/11/2024 (Time: To Be Announced)	3rd Midterm (To Be Assigned)	100

Date	Exam	Points
Tuesday, 5/14/2024 8 PM – 10 PM	Final Exam McLane 162 or Bulldog Testing Center	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 Spring 2024 Tentative Course Schedule: Tuesday, Thursday Courses

Day	Date	Topic	Reading Assignment
1	Thurs., Jan 18	<p>Course Syllabus &amp; General Rules</p> <p>Fundamental Quantities, Units, Significant Figures (<i>study on students' own</i>)</p> <p>1-D Kinematics</p>	<p>Math Review On Sapling (Self Test)</p> <p>Syllabus Posted on Canvas</p> <p>Ch1 Units and Measurement</p> <ul style="list-style-type: none"> <li>1.1 The Scope and Scale of Physics</li> <li>1.2 Units and Standards</li> <li>1.3 Unit Conversion</li> <li>1.4 Dimensional Analysis</li> <li>1.5 Estimate and Fermi Calculations</li> <li>1.6 Significant Figures</li> <li>1.7 Solving Problems in Physics (<i>study on students' own; end-of-chapter problems of Tipler Chapter 1 will be assigned but not collected and will be included in the exams</i>)</li> </ul> <p>Ch3 Motion along a straight line</p> <ul style="list-style-type: none"> <li>3.1 Position, Displacement, and Average Velocity</li> <li>3.2 Instantaneous Velocity and Speed</li> <li>3.3 Average and Instantaneous Acceleration</li> <li>3.4 Motion with Constant Acceleration</li> </ul>
2	Tues., Jan 23	1-D Kinematics	<p>Ch3 Motion along a straight line</p> <ul style="list-style-type: none"> <li>3.4 Motion with Constant Acceleration</li> <li>3.5 Finding Velocity and Displacement from Acceleration</li> </ul>
3	Thurs., Jan 25	Vector Addition	<p>Ch2 Vectors</p> <ul style="list-style-type: none"> <li>2.1 Scalars and Vectors</li> </ul>

Day	Date	Topic	Reading Assignment
			2.2 Coordinate Systems and Components of a Vector 2.3 Algebra of a Vectors
4	Tues., Jan 30	2-D Kinematics	Ch4 Motion in 2 and 3 Dimensions 4.1 Displacement and Velocity Vectors 4.2 Acceleration Vector
5	Thurs., Feb 1	2-D Kinematics & Projectile Motion	Ch4 Motion in 2 and 3 Dimensions 4.3 Projectile Motion
6	Tues., Feb 6	Relative & Circular Motion	Ch4 Motion in 2 and 3 Dimensions 4.5 Relative Motion in 1 and 2 Dimensions 4.4 Uniform Circular Motion
7	Thurs., Feb 8	Relative & Circular Motion	Ch4 Motion in 2 and 3 Dimensions 4.4 Uniform Circular Motion
8	Tues., Feb 13	Newton's Laws	Ch5 Newton's Laws of Motion 5.1 Forces 5.2 Newton's 1 <sup>st</sup> Law 5.3 Newton's 2 <sup>nd</sup> Law 5.4 Mass and Weight 5.5 Newton's 3 <sup>rd</sup> Law Ch13 Gravitation 13.1 Newton's Law of Universal Gravitation
9	Thurs., Feb 15 <b>Midterm 1</b>	Forces & Free-Body Diagrams	Ch5 Newton's Laws of Motion 5.7 Drawing Free-Body Diagrams 5.6 Common Forces
10	Tues., Feb 20	Forces & Free-Body Diagrams	Ch6 Applications of Newton's Laws 6.1 Solving Problems with Newton's Laws 6.3 Centripetal Force Ch13 Gravitation 13.4 Satellite Orbits 13.5 Kepler's 3 <sup>rd</sup> Law of Planet Motion
11	Thurs., Feb 22	Friction	Ch6 Applications of Newton's Laws 6.2 Friction 6.3 Centripetal Force

Day	Date	Topic	Reading Assignment
12	Tues., Feb 27	Work & Kinetic Energy	Ch7 Work and Kinetic Energy 7.1 Work 7.2 Kinetic Energy 7.3 Work-Energy Theorem 7.4 Power
13	Thurs., Feb 29	Conservative Forces Work & Potential Energy	Ch8 Potential Energy and Conservation of Energy 8.2 Conservative and Non-Conservative Forces 8.1 Potential Energy of a System
14	Tues., Mar 5	Conservation of Energy	Ch8 Potential Energy and Conservation of Energy 8.3 Conservation of Energy 8.4 Potential Energy Diagrams
15	Thurs., Mar 7 Midterm 2	<b>Midterm 2</b>	
16	Tues., Mar 12	Center of Mass	Ch9 Linear Momentum and Collisions 9.6 Center of Mass
17	Thurs., Mar 14	Conservation of Momentum	Ch9 Linear Momentum and Collisions 9.1 Linear Momentum 9.2 Impulse and Collisions 9.3 Conservation of Linear Momentum
18	Tues., Mar 19	Conservation of Momentum Perfectly Inelastic Collision (i.e., Totally Inelastic Collision)	Ch9 Linear Momentum and Collisions 9.1 Linear Momentum 9.2 Impulse and Collisions 9.3 Conservation of Linear Momentum 9.4 Types of Collisions
19	Thurs., Mar 21	Perfectly Inelastic Collision (i.e., Totally Inelastic Collision) Explosion	Ch9 Linear Momentum and Collisions 9.3 Conservation of Linear Momentum 9.4 Types of Collisions 9.7 Rocket Propulsion
N/A	Tues., Mar 26	Spring Break	
N/A	Thurs., Mar 28	Spring Break	
20	Tues., Apr 2	Rotational Kinematics	Ch10 Fixed Axis Rotation 10.1 Rotational Variables 10.3 Relating Angular and Translational quantities

Day	Date	Topic	Reading Assignment
			10.2 Rotation with constant angular Acceleration
21	Thurs., Apr 4	Rotational Kinetic Energy & Moment of Inertia Parallel Axis Theorem	Ch10 Fixed Axis Rotation 10.4 Moment of Inertia and Rotational Kinetic Energy 10.5 Calculating Moment of Inertia
22	Tues., Apr 9	Torque Newton's 2 <sup>nd</sup> Law for Rotation Rotational Dynamics	Ch10 Fixed Axis Rotation 10.6 Torque 10.7 Newton's 2 <sup>nd</sup> Law for Rotation
23	Thurs., Apr 11 Midterm 3	Static Equilibrium	Ch12 Static Equilibrium 12.1 Conditions for Static Equilibrium 12.2 Examples of Static Equilibrium
24	Tues., Apr 16	Static Equilibrium	Ch12 Static Equilibrium 12.1 Conditions for Static Equilibrium 12.2 Examples of Static Equilibrium
25	Thurs., Apr 18	Conservation of Angular Momentum	Ch11 Angular Momentum 11.2 Angular Momentum 11.3 Conservation of Angular Momentum 11.4 Precession of a Gyroscope (Possibly Omitted)
26	Tues., Apr 23	Simple Harmonic Motion (i.e., S.H.M.)	Ch15 Oscillations 15.1 Simple Harmonic Motion 15.2 Energy in Simple Harmonic Motion 15.3 Comparing Simple Harmonic Motion and Circular Motion 15.4 Pendulum (Possible Omitted)
27	Thurs., Apr 25	Fluid Statics	Ch14 Fluid Mechanics 14.1 Fluids, Density, and Pressure 14.2 Measuring Pressure
28	Tues., Apr 30	Fluid Statics	Ch14 Fluid Mechanics 14.3 Pascal's Principle and Hydraulics 14.4 Archimedes' Principle and Buoyancy
29	Thurs., May 2	Fluid Dynamics	Ch14 Fluid Mechanics 14.5 Fluid Dynamics

Day	Date	Topic	Reading Assignment
			14.6 Bernoulli's Equation
30	Tues., May 7 <b>Last Day of Instruction</b>	Fluid Dynamics	Ch14 Fluid Mechanics 14.5 Fluid Dynamics 14.6 Bernoulli's Equation

*Table 4 Finals Week Schedule*

Finals week	Days	Dates
Final Exam Preparation & Faculty Consultation Days:	Thursday and Friday	May 9 and 10
Final Semester Examinations	Monday – Thursday	May 13 to 16
Final Exam in this course	<b>Tuesday</b>	<b>May 14 8 – 10 PM</b>